

*** DEPARTMENT OF THE AIR FORCE ***

AETHER

A JOURNAL OF STRATEGIC AIRPOWER & SPACEPOWER

SPECIAL FEATURE

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BRENT TALBOT

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Tribute

In January, Air University (AU) Press and the US Air Force bid farewell to Nedra Looney, the lead Press production specialist and one of its longest serving civilian members. Nedra devoted 37 years to supporting the Air Force, Air Education and Training Command, and Air University, the final 16 of which were at the Press, where she helped the organization excel at its mission to promote US Air Force and US Space Force scholarship.

Nedra, a native of Clanton, Alabama, first interned with the personnel detachment at Maxwell Air Force Base (AFB) during her college years at H. Councill Trenholm State Technical College. After interning for the Air Force, Nedra was hired full time by the Montgomery Veterans Affairs (VA) office in 1986 as a clerk-typist in the accounting department, researching lost checks.

After a year in the VA accounting office, Nedra applied for and was hired to a position with the Air Command and Staff College (ACSC) at Maxwell AFB. During her years at ACSC, she was promoted through the positions of clerk-typist, secretary, and editorial assistant.

In 1995, Nedra was promoted to a higher-level editorial assistant position with the Air Force Institute for Advanced Distributed Learning (AFIADL) at Maxwell AFB-Gunter Annex. At AFIADL Nedra edited career development courses.

In 2007, Nedra was hired as a typesetter for Air University Press in support of the fledgling US Air Force scholarly journal, *Strategic Studies Quarterly* (SSQ). Upon retirement in 2024, Nedra's responsibilities at the Press included layout and production lead for books, papers, and journals. She retired as the Press' senior-most production specialist, having overseen the production of hundreds of influential books, papers, and journals.

Nedra holds an associate and applied technology degree in stenography from Trenholm State Technical College, and a bachelor of science degree in human services and technology management and an associate degree in general education from Troy University. She received several civilian and team awards during her 37 years of exemplary service, including the 2019 Air University Headquarters Civilian Category II of the Year.

Over the course of her career and as the computer age dawned, her work tools transformed from microfiche, double carbon paper, electric typewriters, and paper-based filing systems to digital computing. She witnessed word processors and floppy disks become cloud-based software computing and communication platforms. Despite these monumental changes, Nedra showed a consistent ability to adapt and master new tools and systems.



Former SSQ editor retired Colonel Mike Guillot, USAF, recalled, “It was my privilege to have Nedra as production manager/typesetter for SSQ for nine years. During this time we NEVER published a late edition. In fact, due to her efforts SSQ arrived early. Nedra’s warm personality and cheerful disposition made our working relationship mutually supportive.” Dr. Adam Lowther, vice president for research at the National Institute for Deterrence Studies and a former colleague at AU Press, said “Nedra is one of those people who always has a smile on her face and a kind word, even on the days she may not feel chipper. In all the years we worked together, I always admired her ability to keep a positive attitude even during the toughest of times. She was a pleasure to work with.”

Reflecting on her career, Nedra returned steadfastly to the importance of prayer and faith, declaring that when times were tough, she stood firm on Philippians 4:13: “I can do all things through Christ which strengthens me.” She emphasized her gratitude for the flexibility of the Air Force and of the friends she made over the years. Her next life chapter includes a shared retirement with her husband of 36 years, Wayne, supporting their sons, Joseph, a US Army captain, and Nicholas, an area manager with Amazon. Nedra and Wayne will continue working on their family cattle farm in Clanton.

AU Press—*Æther* (formerly SSQ) and *ASOR* (formerly *Air & Space Power Journal*) in particular—have benefited in untold ways from Nedra’s expertise, adaptability, willingness to learn, exhaustive patience, compassionate spirit, and encouragement, all accompanied by good humor evidenced by a ready laugh. These qualities were ever present, even in the stressful times of looming and passed deadlines, and when a certain editor requested yet another change to a table of contents, text, graphics, or a title. We will miss Nedra’s collegueship and her commitment to the mission. Even more so, we will miss her as a rock solid Air University Press team member.

~The Editor

FROM THE EDITOR

Dear Reader,

The end of a calendar year offers a time to reflect on what the preceding 12 months held and what we, in turn, face in the next. While 2023 saw historic gains in technology, particularly artificial intelligence, it also left us with significant global uncertainty. The list is long, but it includes a simmering war between Israel and Hamas that threatens to come to a rolling boil, spilling over into the broader Middle East—a conflict further aggravated by Iranian proxies that are not only targeting global shipping, but as of this writing, have also taken the lives of three American service members and injured dozens more.

Predictably, our twenty-first-century collective attention span has tragically shifted away from Russia's war in Ukraine. Nuclear weapons policy, including modernization, arms control, and deterrence, overshadows our defense policy considerations with the continued suspension of New START and the realities of a multipolar world. A civil war rages in Sudan, while some African nations are realigning their allegiances away from the West. And in a crime against humanity on a national scale that began in 2021, an evil Taliban government continues to repress the Afghan people—most especially women and girls—and worse.

Yet despite these and other challenges, there are signs of hope for a better year. At home the economy is improving, and unemployment is low. Open conflict has not erupted either in space or with China. Abroad, Taiwan recently elected a pro-democracy government, and key Arab states are working with the United States and other Western governments to help Israel and Hamas achieve a desperately needed ceasefire, one that will bring home Israelis brutally abducted by Hamas and begin to alleviate the suffering of millions in Gaza. Looking to the stars, commercial space companies continue to make gains in efforts to utilize space for peaceful global economic and scientific progress.

Persistent geopolitical uncertainty—the sum of these challenges, tragedies, opportunities, and setbacks—is arrayed against a broader backdrop of ongoing climate change; technology-based challenges and opportunities for individuals, society, nations, and culture; growing populism; and an increasing need for global attention to extraterrestrial matters across the economic, informational, and political spectrums, in which national military considerations play an important role.

Into this somewhat impossible melee, we introduce some food for thought on particular events and ideas national security practitioners will contend with in 2024. Our

Special Feature by Brent Talbot considers the implications of the Begin Doctrine with regard to Israeli foreign policy and its options for an increasingly aggressive Iran. Namely, what factors may come into play in an Israeli calculation to strike Iran's nuclear facilities?

Our lead forum, **Nuclear Deterrence**, begins with an article by Lieutenant General David Miller, Kate Boehlefeld, and Jim Forsyth. They present ten propositions to guide leaders, strategists, and planners as they establish and execute policy in the name of deterring nuclear war. In the second article in the forum, Adam Lowther and Steve Cimbala examine New START, currently on hold, to highlight challenges, including whether to include China, and the ability of that treaty to provide surety in deterrence and to promote arms race stability.

In **Perspectives on Strategic Competition** Arjun Subramaniam explores the Indian Air Force's posture as it relates to China in the context of continued low-level conflict along the Line of Actual Control. The Indian Air Force deficits call for an increased focus on modernization and a reduction in aircraft shortages. In the second article in the forum, Wendy Whitman Cobb details the current state of commercial competition in space. She argues the heightened focus on economic security and the growing power of international commercial space companies may lead to a commercial space security dilemma focused on the companies driving innovation in space.

In **Conflict and the Mind**, our final forum, Brent Lawniczak analyzes our strategic pivot away from counterinsurgency back to great power competition through the framework of moral injury to a nation. He argues the United States seeks to reduce collective anxiety and reinforce state identity—reactions to moral injury—by seeking a concrete object of fear, namely China, which distorts the creation and execution of US foreign policy. In the closing article of the issue, Samuel Zilincik examines the emotion regulation literature to propose that kinetic and information operations influence emotions through different regulatory mechanisms. This has serious implications for effects-based operations, especially when integrating information and kinetic operations for synergic effect.

Happy New Year from Team *Æther*, and thank you for your continued support of the journal. Æ

~The Editor

ISRAEL'S BEGIN DOCTRINE

Preventive Strike Tradition and Iran's Nuclear Pursuits

BRENT TALBOT

The Begin Doctrine declares any regional enemy that intends to destroy the State of Israel cannot be permitted to obtain weapons of mass destruction, principally, nuclear weapons. Global efforts to prevent the Iranian government from producing a nuclear bomb are showing to be ineffective, as Tehran is closer than ever to achieving that capability. With the emboldened Axis of Resistance, evidenced chiefly by the incursion into Israel by Hamas on October 7 and potential escalation by Lebanese Hezbollah and proxies in Syria, Israel may determine it strategically necessary to conduct a debilitating strike on Iran's nuclear facilities.

It has now been over 40 years since Israel launched a preventive airstrike on the Osirak nuclear complex near Baghdad, Iraq. Then Israeli Prime Minister Menachem Begin ordered the strike and thereby inaugurated what has become known as the Begin Doctrine, which holds that “no regional enemy committed to the destruction of the Jewish state can be allowed to obtain weapons of mass destruction.”¹

Israel acted again in 2007, this time in Syria, where another nuclear reactor optimized for plutonium production was under construction. The al-Kibar complex was destroyed via air attack. In both the Iraqi and Syrian cases, defender reactions were minimal and did not lead to war, and Israel suffered no losses. International responses to both attacks were also minimal, though in the Iraqi case, both condemnation and short-lived sanctions followed. The Syrian attack was actually supported by the international community since the reactor was illegal—Syria had not made it known to the International Atomic Energy Agency (IAEA), in violation of the Non-Proliferation Treaty, and North Korea had supplied the reactor.²

Dr. Brent Talbot is a professor in the Department of Military and Strategic Studies, US Air Force Academy.

1. Jay Solomon, “What Happens When Everyone’s Trying to get Nukes?,” Washington Institute for Near East Policy, December 4, 2019, <https://www.washingtoninstitute.org/>.

2. Amos Yadlin, “Israel’s Shadow War with Iran Doesn’t Have to Strain Relations with the U.S.,” *Foreign Affairs*, April 19, 2021, <https://www.foreignaffairs.com/>.

Iran is now the third regional enemy of Israel suspected of seeking nuclear weapons. Recently retired Chairman of the Joint Chiefs General Mark Milley estimated in September 2023 that Iran may be able to construct a nuclear warhead in “just a few months” once it obtained sufficient enriched material for a warhead.³ Debates in Israel are ensuing about whether the Begin Doctrine can be enforced in the same way it was against Iraq and Syria.⁴ In those cases, nuclear programs were contained to one site and easy to strike, and both took place before the reactors went hot. Iran learned from those attacks. The Islamic Republic has spread its nuclear infrastructure to multiple locations and placed the most critical complexes underground, where they are more difficult to target.

Still, Israel is more willing to take risks since the Trump administration withdrew from the Joint Comprehensive Plan of Action (JCPOA) in 2018, and the US military has expanded its cooperation with Israel, especially after President Joseph Biden’s efforts to revive JCPOA broke down in 2022, even suggesting support of Israel’s stance against Iran.⁵

Moreover, Israel has a history of conducting persistent offensive campaigns. Directed against Hezbollah and Palestinian terror groups, such campaigns are often referred to as “mowing the grass,” or keeping radical factions off-balance so they cannot conduct major attacks against Israel. One analysis suggests the “term in Israel’s strategic parlance . . . reflects the assumption that Israel finds itself in protracted intractable conflict with extremely hostile non-state entities, which is qualitatively different than inter-state conflict” and that “Israel’s use of force can achieve only temporary deterrence.”⁶ Thus, mowing the grass suggests further military action will be necessary in the future—the grass will regrow and need mowing again.

While mowing the grass was intended for nonstate actors, the Israeli military has adopted another term for use in its ongoing proxy war with Iran, which until recently, has mostly played out over the skies of Syria in order to deny Iranian weapons to Hezbollah and the Palestinian terror organization Hamas. Israel refers to its strategy by the Hebrew acronym, MABAM, meaning “campaign between wars,” as a new phase of war between “preparing for war” and “conducting war.”⁷ This concept is related to mowing the grass in that Israeli actions to deny weapons to terror groups are also prolonging the need for the next large-scale conflict. Sustained, low-intensity conflict is the state of affairs between wars and fits the current situation being played out between

3. Michael Singh, “Iran’s Nuclear Diplomacy: Feint and Advance,” Policy Watch 3782, Washington Institute for Near East Policy, September 14, 2023, <https://www.washingtoninstitute.org/>.

4. Keren Setton, “On the Brink: Unpacking Israeli’s Unilateral Strike Threat against Iran,” *Jerusalem Post*, June 7, 2023, <https://www.jpost.com/>.

5. Dalia Dassa Kaye, “Israel’s Dangerous Shadow War with Iran,” *Foreign Affairs*, February 27, 2023, <https://www.foreignaffairs.com/>.

6. Efraim Inbar and Eitan Shamir, “‘Mowing the Grass’: Israel’s Strategy for Protracted Intractable Conflict,” *Journal of Strategic Security* 37, no. 1 (2014): 67–68.

7. See Joshua Dryden, “Iran, Israel, and the Struggle for the Skies over the Middle East,” *Æther: A Journal of Strategic Airpower & Spacepower* 2, no. 1 (Spring 2023): 91, <https://www.airuniversity.af.edu/>.

Israel and Iran's proxies—the so-called Axis of Resistance, notwithstanding the war against Hamas that began in October 2023. Such low-level actions remain below the threshold of both retaliation by Iran and condemnation by the United States and international community.

Still, beyond the skies of Syria and the borders with Lebanon and the Palestinian territories, such actions have also played out against the nuclear infrastructure of Iran. Israel has supposedly conducted cyberattacks, sabotage, and assassinations over the past decade or more in an effort to slow Iran's progress toward attaining a nuclear weapon. Furthermore, Israel is primed to launch an all-out kinetic air attack as soon as it decides Iran is on the verge of crossing the nuclear threshold.

In 2008 in fact, Israel conducted a massive aerial exercise over the Mediterranean Sea believed to simulate an air attack on Iran.⁸ It was rumored that in May of that year then-Prime Minister Ehud Olmert asked President George W. Bush for permission to overfly Iraq—whose airspace was controlled by the United States at that time—enroute to Iran, which Bush repudiated.⁹

Israel is less likely to seek an American green light when it decides to attack Iran the next time around. Such a time is probable in the near future, particularly in response to the October 2023 Hamas attack on Israel, which was made possible by Iran.¹⁰ For this reason, the United States and its Gulf partners will need to be ready for the repercussions of an extensive Israeli air campaign targeting Iranian nuclear sites.

Israel's Campaign between Wars

Israel is suspected of sabotaging Iranian nuclear infrastructure and assassinating key nuclear scientists in order to slow Iran's progress toward a bomb, though in both cases the evidence has been circumstantial. Israel has not claimed responsibility.

In 2010, Belarussian cybersecurity experts discovered the first instance of such sabotage, a cyberattack on the Natanz uranium enrichment plant in Iran. Over a period of months, the Stuxnet malware damaged approximately a thousand of the plant's six to eight thousand spinning centrifuges and was meant to make Iranian scientists believe they were using defective equipment in the underground enrichment halls. Investigative journalists gaining access to anonymous sources have said the cyber weapon was the joint effort of both Israel and the United States and was likely an effort to reduce Israel's need for an overt air force attack on Iran's nuclear infrastructure at that time.¹¹

8. Donald Macintyre, "Israel's Dry Run 'Attack on Iran' with 100 Jet Fighters," *Independent*, June 21, 2008, www.independent.co.uk/.

9. David Sangor, "U.S. Rejected Aid for Israeli Raid on Iranian Nuclear Site," *New York Times*, January 11, 2009, <https://www.nytimes.com/>.

10. Nicholas Carl, Brian Carter, and Katherine Zimmerman, "Iran's Hand in Attacks Targeting US, Israel," AEIdeas, American Enterprise Institute, October 20, 2023, <https://www.aei.org/>.

11. Ron Rosenbaum, "Richard Clarke on Who Was behind the Stuxnet Attack," *Smithsonian Magazine*, April 2012, <https://www.smithsonianmag.com/>.

The next case of potential sabotage occurred at Parchin in 2014. The Parchin military base includes a missile testing complex, and some suspect that detonator testing has also taken place there. As a military complex, Iran has severely restricted access to International Atomic Energy Agency inspectors, even while the JCPOA agreement was in place during 2015–18.¹²

A large explosion occurred at the center of the Parchin facility and may have been accidental.¹³ A second explosion and fire occurred six years later in July 2020, this time at Khojir, an adjacent facility to Parchin just outside Tehran. Satellite imagery shows widespread fire damage over several acres and remains of burnt buildings. Less than a week after the Khojir incident, yet another explosion rocked Natanz, this time aboveground in buildings where new advanced centrifuges were prepared for enrichment use.¹⁴

In April 2021, a bomb exploded in one of the underground enrichment halls at Natanz, likely destroying multiple centrifuges as occurred via cyber means in 2010 with Stuxnet. Foreign media sources attributed this attack to a covert operation by Israel's Mossad, but no one has claimed responsibility.¹⁵ Aljazeera reported in March 2022 a similar attack attempt against the Fordow underground enrichment facility was foiled. Notably, this attempt occurred just days after talks in Vienna resumed for Biden's effort to restore JCPOA.¹⁶

Even more recent—in January 2023—short-range quadcopter drones, which US officials claimed were of Israeli origin, attacked a military facility near Isfahan. No indications of damage were included in the report, though Iran claims minimal damage resulted from the attack.¹⁷ Interestingly, the attack came only two days after the conclusion of Juniper Oak, the largest combined US-Israel military exercise in history, intended to enhance interoperability of US and Israeli air, land, and naval forces, which involved 100 US and 42 Israeli aircraft and was likely intended to send a deterrent message to Iran.¹⁸

12. Olli Heinonen et al., *Revisiting Parchin: Institute for Science and International Security* (Washington, DC: Foundation for Defense of Democracies, August 22, 2017), <https://www.fdd.org/>.

13. "Satellite Images Show Explosion Took Place within the Parchin Military Complex," Haaretz, October 9, 2014, <https://www.haaretz.com/>.

14. Joe Truzman, "Explosions Damage Site at Iranian Missile Complex and Nuclear Facility," Long War Journal, July 7, 2020, <https://www.longwarjournal.org/>.

15. Yadlin, "Israel's Shadow War."

16. Maziar Motamedi, "Iran Says Israel 'Sabotage' on Fordow Nuclear Plant Foiled," Aljazeera, March 14, 2022, <https://www.aljazeera.com/>.

17. Daniel Shapiro, Holly Dages, and Thomas Warrick, "Experts React: What's behind the Drone Strike on an Iranian Military Facility?," Atlantic Council, January 30, 2023, <https://www.atlanticcouncil.org/>.

18. Michael Eisenstadt, "The Juniper Oak Military Exercise: Implications for Innovation, Experimentation, and U.S. Policy Toward Iran," Policy Watch 3698, Washington Institute, February 1, 2023, <https://www.washingtoninstitute.org/>.

In terms of assassinations, seven nuclear scientists have been targeted and six killed since 2007. Ardeshir Hosseinpour was poisoned and died in January of that year.¹⁹ Three car-bomb attacks against Iranian scientists occurred in 2010, killing two and injuring one. In 2011, Darioush Rezaeinejad was killed by motorcycle gunmen; in 2012, Mostafa Ahmadi Roshan was killed by another car bomb.²⁰ And finally, during November 2020 Iran's chief nuclear scientist, Mohsen Fakhrizadeh, was killed in a sophisticated attack by a remote sniper rifle mounted in the bed of a pickup truck.

The above-mentioned incidents and assassinations have certainly slowed, but not halted, Iran's progress toward a nuclear bomb and provide evidence of Israel following its MABAM, or campaign between wars strategy, directly against Iran. While not yet considered a nuclear power, Iran has enough enriched uranium to construct five nuclear warheads within three weeks.²¹ So in spite of its restrictions, Iran no longer abides by the JCPOA agreement since the United States withdrew, and it also inhibits intrusive inspections by the IAEA. In short, Iran's progress is not being sufficiently monitored at its uranium enrichment sites.

Moreover, its intentions as a pariah state are clear. Iran's supreme leader Ayatollah Khamenei praised the October 2023 devastating Hamas terror attacks on Israel. Further, Tehran was likely complicit in the cruise missile attacks—intercepted by the US Navy in the Red Sea—launched from Yemen toward Israel two weeks into the crisis to support Hamas in the ongoing conflict.²²

Iran continues to train and equip Hezbollah and encouraged its attacks on Israel, and it supports Syria in efforts to keep President Bashar al-Assad in power. Syria has also fired upon Israel in support of the 2023 Hamas attack.²³ Even Shia militia from Iraq have reportedly moved toward the Syrian border with Israel on the Golan Heights and expressed its “full readiness” to supply fighters and weapons to support Hamas. These militias are also funded and trained by Iran.²⁴

Such a confluence of Iranian proxies willing to join the Hamas fight has to concern Israel: Iran is close to weaponizing an atomic bomb and aiding and abetting what may become the largest war against Israel since 2006, involving not only Hamas, but also Hezbollah, Syria, the Houthis of Yemen, and Iraqi Shia militias, all of which are trained and armed by Iran.

19. Yossi Melman, “U.S. Website: Mossad Killed Iranian Nuclear Physicist,” Haaretz, February 4, 2007, <https://www.haaretz.com/>.

20. Mehdi Jedinia, “History of Assassinations of Iran's Top Nuclear Scientists,” Voice of America, December 3, 2020, <https://www.voanews.com/>.

21. “Iran's Nuclear Timetable: The Weapon Potential,” Iran Watch, September 21, 2023, <https://www.iranwatch.org/>.

22. Emily Olson, “Pentagon Says It Shot Down Yemen Missiles That May Have Been Headed towards Israel,” NPR, October 20, 2023, <https://www.npr.org/>.

23. “Israel Fires Back after Syrian Shells Land in Israeli Territory,” Reuters, October 10, 2023, <https://www.reuters.com/>.

24. “IntelBrief: Hand on the Trigger: Iranian Proxies Threaten to Escalate the Conflict with Israel,” Soufan Center, October 19, 2023, <https://thesoufancenter.org/>.

At the time of this writing, Israel's army has invaded Gaza and has moved forces to defend its northern border with Lebanon. The United States is supporting deterrence with assets in the Mediterranean region.²⁵ Moreover, it is reported that there is "greater consensus than ever before in the Israeli defense establishment about the need to confront Iran militarily, because there is no other way to prevent them from becoming nuclear."²⁶ According to Dennis Ross, "Iran is hardening its defenses, meaning Israel could lose the option to attack." Ross also noted Israel "will never allow themselves to lose the option" and that "you don't wait until it is one minute to midnight."²⁷

Thus, fighting the Iranian proxies is not enough. The elevated tensions in the region demonstrate that Iran is already at war with Israel.

Iran's Nuclear Capability

The campaign between wars is failing to stop Iran's nuclear progress. Israel may decide to take the fight to the source. For Israel, the Begin Doctrine necessitates it.

Constructing a nuclear weapon requires 1) sufficient fissile material; 2) a detonator and metal uranium, or plutonium, sphere; and 3) a delivery mechanism. Iran already has the missile technology and inventory to deliver a bomb.²⁸ In terms of fissile material, the 2015 JCPOA agreement negotiated between Iran and the P5+1 countries was intended to ensure Iran stayed below the fissile-material threshold and froze all progress toward a weapon. But US President Donald Trump's withdrawal from the agreement in 2018 has been followed by Iranian violations. New centrifuges that had been reduced by JCPOA have been added back to the cascades. In October 2021, the new head of Iran's Atomic Energy Organization announced his country had produced more than 120 kilograms of 20-percent-enriched uranium, in violation of the agreement, and also enriched some to the 60-percent level.²⁹

More recently and of even greater concern, IAEA inspectors found traces of uranium enriched to 83.7 percent at Fordow, dangerously close to the 90-percent weapons-grade level, and Iran's known stockpile of 60-percent-enriched uranium has grown to 87 kilograms, enough for several nuclear weapons; this is confirmed by Iran Watch.³⁰ In sum, Iran likely has sufficient fissile material for atomic weapons that

25. Sam LaGrone, "USS Eisenhower Now Operating in the Red Sea," USNI News, November 3, 2023, <https://news.usni.org/>.

26. Marilyn Stern, "Efraim Inbar: Israel Will Confront Iran Militarily, Deal or No Deal," Middle East Forum, June 24, 2022, <https://www.meforum.org/>.

27. Ethan Bronner and Henry Meyer, "Will Israel Attack Iran? What to Know about Netanyahu's Military Posturing," *Time*, June 13, 2023, <https://time.com/>.

28. Lazar Berman, "Word Games: What Does Lapid Mean When He Pushes 'Other Options' on Iran?," *Times of Israel*, October 15, 2021, <https://www.timesofisrael.com/>.

29. Simon Henderson, "While Washington Argues, Iran Makes Nuclear Advances," Washington Institute, October 15, 2021, <https://www.washingtoninstitute.org/>.

30. "IAEA Report Says Pressing Iran on Enrichment to Near Bomb-Grade," Reuters, February 28, 2023, <https://www.reuters.com/>; and "Iran's Nuclear Timetable."

could be enriched to weapons grade within three weeks. It is reported to have a bomb design, is fabricating uranium metal, and may be conducting detonator experiments.

Building a detonator and creating a metal sphere of uranium is the most difficult task, but a September 2021 IAEA report concluded Iran has been converting uranium into a metal form needed for a weapon, and that Pakistan handed over bomb design documents to Iran some years ago, which are thought to be an adaptation of a Chinese design given to Pakistan. The report also mentioned initiator experiments, inferring efforts to produce a detonator may be ongoing in Iran, and concluded that Iran now has the ability to build a nuclear weapon.³¹

And finally, Iran has a ready-made delivery system that can reach Israel in the form of the Shahab 3 and 4 intermediate-range ballistic missiles. The biggest unknown is whether Iran can build a weapon small enough for its missiles. Should it be able to do so and cross the nuclear threshold, Iran is likely to become much more emboldened in its foreign policy, which is a problem for Israel, the Gulf region, Europe, and the United States as well.

Another worrying development is a strategic cooperation deal signed between China and Iran in 2021, which includes a commitment to military cooperation, research, and intelligence sharing. In addition to concerns about the intelligence sharing, given that the above-mentioned Chinese bomb design passed to Iran via Pakistan, it is not beyond imagination that more nuclear technology sharing might accompany the new ties between Iran and China. The deal also gives Iran a break from US sanctions since China has agreed to invest \$400 billion in Iran in exchange for oil.³² Moreover, when considering North Korea was engaged in construction of the Syrian reactor, it is possible the Kim regime could be aiding Iran as well; the two are known to have exchanged missile technology.³³

The most pressing question at this time is whether Israel's MABAM strategy is sufficient to keep Iran from reaching the nuclear threshold. If not, Israel is likely to use its airpower to enforce the Begin Doctrine and eliminate what it can of Iran's nuclear infrastructure.

Arguments against Attacking Iran

Former Israeli Defence Forces (IDF) Intelligence Chief Amos Yadlin identified three critical arguments against attacking a nuclear complex in enemy territory. The first involves operational risks. Nuclear infrastructure is highly valuable and well protected, and attack risks casualties and mission failure—note the botched US attempt to rescue its embassy personnel in Tehran in 1979. In the case of Iran, highly capable

31. Henderson, "Washington Argues."

32. TOI Staff and Agencies, "Ex-IDF Intel Head: Iran-China Megadeal Includes Worrying Military Info-Sharing," *Times of Israel*, March 21, 2021, <https://www.timesofisrael.com/>.

33. United Against Nuclear Iran (UANI), "Iran and North Korea: Proliferation Partners," UANI (website), August 19, 2022, <https://www.unitedagainstnucleariran.com/>.

S-300 anti-aircraft missiles protect key sites from aerial bombardment, meaning Israeli fighter jets may not escape getting shot down, which they avoided in Iraq and Syria.

The second argument involves political risks. The international community generally opposes preventive strikes and labels them as acts of aggression and illegal under international law rather than as defensive actions. The third argument concerns the risk of deterioration into war: the enemy response could be “wide and painful.”³⁴ Iran can retaliate with long-range missile volleys launched from its territory but also with shorter-range missiles and artillery from Syria and from ship-borne sources in the Mediterranean. Its proxy forces in Lebanon and Gaza can conduct terror attacks or launch missiles, drones, and artillery supplied by Iran.

The operational risks are the greatest, but allowing Iran to obtain nuclear weapons is an even greater existential threat to Israel. The risks are numerous—increasingly accurate ballistic missiles that can reach Israel from Iran, more capable drones that can be launched from proxy territories, the training and arming of proxies, cyberattacks, Iranian military deployments to Syria, and plots to kill or kidnap Israeli citizens. Israel is already experiencing volleys of missiles, proxy attacks, and cyber and drone attacks. Iraqi militias are deploying to Syria, and Hamas has taken over 200 hostages.

Political risks are mixed. The global response to the war with Hamas may be an indicator regarding the international response to an attack by Israel on Iran's nuclear facilities. The United States, United Kingdom, France, India, Norway, and Austria have clearly sided with Israel in the ongoing conflict—some 84 nations have issued statements supporting Israel's right to self-defense. Iran, Qatar, and Lebanon lead the way in backing Hamas, along with some other Middle Eastern states.³⁵ So there are many more significant and powerful political partners siding with Israel than there are with Iran.

Additionally, US support includes military aid and deterrence deployments of two carrier battle groups along with an amphibious ready group carrying 3,000 Sailors and Marines to the region. The United States is also resupplying Israel with antiballistic missiles for the Israeli Iron Dome missile defense system, and the cruisers and destroyers accompanying the carrier battle groups in the Eastern Mediterranean and Middle East region are armed with Aegis missile defense systems.³⁶

The final risk—deterioration to war—has come to fruition. Iran continues to promise retaliation from its so-called Axis of Resistance, referring to its proxies Hamas, Hezbollah, and others in Syria, Iraq, and Yemen.³⁷ In sum, Israel is already

34. Amos Yadlin, “The Begin Doctrine: The Lessons of Osirak and Deir ez-Zor,” INSS Insight No. 1037, INSS – Institute for National Security Studies, March 21, 2018, <https://www.inss.org.il/>.

35. “Hamas-Israel Conflict: A Look at the Countries Supporting Palestinian Militant Group,” CNBCTV18.com, October 9, 2023, <https://www.cnbctv18.com/>.

36. Sam LaGrone, “Pentagon Extends USS Gerald R. Ford Deployment, Will Move U.S. Marines Closer to Israel,” USNI News, October 17, 2023, <https://news.usni.org/>.

37. Henry Ridgwell, “Iran Warns Israel of ‘Axis’ Response as Fears Grow of Regional War,” Voice of America, October 13, 2023, <https://www.voanews.com/>.

facing the risks spelled out by Yadlin since the October Hamas rocket attacks and incursion into Israel, and Israel's resulting ground invasion of the Gaza Strip.

In terms of international efforts to forestall a potential Israeli attack against Iran's nuclear facilities, the Biden administration focused on renewing JCPOA in its early days in office. But last year, negotiations collapsed in light of antiregime protests in Iran, an expanding Russian-Iranian relationship over the war in Ukraine, and intensifying clashes between Iran and Israel.³⁸ Moreover, Iran has increased its attacks against US service members, partners, and interests in the Middle East beginning in 2021 to levels not seen since 2018. In effect, diplomacy is "off the table."³⁹

Notably, Israel praised the United States' withdrawal from the Iran deal and is against renewal. Israeli Prime Minister Benjamin Netanyahu has long been opposed to such a deal and relations between him and President Barack Obama were strained during negotiations which led to the JCPOA agreement.⁴⁰

Risks of Iranian Proliferation

Iran's president Ebrahim Raisi has developed a defense posture revolving around two principles: enhancing Iran's ability to swiftly retaliate against the United States and its sanctioning efforts, as well as delinking Iran's economy from Western influence by building a self-reliant and Asia-focused economy. This suggests Iran will deal less with the West and as a result, will be less influenced by US or P5+1 efforts to thwart Iran's nuclear program.⁴¹ Raisi also believes Iran is a natural regional hegemon, a modern-day successor to the Persian and Safavid empires.⁴² Attaining nuclear weapons will confirm his perception of great power status.

A nuclear Iran presents a complex security challenge, not just for Israel, but also for the Middle East region and beyond. As one security studies analysis argues, there are six specific concerns.

- A nuclear Iran will limit US, European, and Israeli military mobility in the Gulf region and give Iran significant leverage over neighboring Arab states.

38. "Iran Update – September 2021," JINSA [Jewish Institute for National Security of America], October 1, 2021, <https://jinsa.org/>; Natasha Bertrand et al., "Intelligence Shows Iranian-backed Militias Are Ready to Ramp Up Their Attacks against US Forces in the Middle East," CNN, October 23, 2023, <https://www.cnn.com/>; and Ellen Mitchell, "US Troops in Iraq, Syria Attacked 13 Times in Past Week, Pentagon Says," *Hill*, October 24, 2023, <https://thehill.com/>.

39. Kaye, "Shadow War"; and "Iran Update."

40. Max Greenwood, "Netanyahu Lauds Trump's 'Bold Decision' to Pull Out of Iran Deal," *Hill*, May 8, 2018, <https://thehill.com/>.

41. Mohammad Ayatollahi Tabaar, "Iran Won't Back Down: As Nuclear Talks Resume, Tehran Isn't Looking to Compromise," *Foreign Affairs*, November 2, 2021, <https://www.foreignaffairs.com/>.

42. Ariel Levite, "Deciphering Iran's Nuclear Strategy," September 10, 2021, Carnegie Endowment for International Peace, <https://carnegieendowment.org/>; and see also Roby C. Barrett, *Iran, Illusion, Reality, and Interests*, Joint Special Operations University (JSOU) Report 12-8 (MacDill AFB, FL: JSOU, September 2012), ch. 1–2, <https://apps.dtic.mil/>.

- Iran's foreign policy will be more ambitious, emboldened, and risk-accepting—its support and encouragement of the October 2023 Hamas attack provides ample evidence of this already, even without nuclear weapons.
- Iran will provide more support to and defend its proxies.
- Iran's support for terrorism will increase and could include nuclear terrorism.
- Iran is likely to confront Israel directly.
- Iranian nuclear weapons will undermine the Non-Proliferation Treaty due to the potential creation of a cascade effect as other states, namely Saudi Arabia and Turkey, vow to become nuclear powers in response to Iran's weapons.⁴³

It should also be said that Iran's continued violations of the Non-Proliferation Treaty have already weakened the document since the United States has so far failed to inhibit Iran's evolution towards a bomb.

Israeli Government Policy and Attack/Defense Assets

According to the US Institute for Peace, as early as 2021, "Israel's top military official announced that funding and preparations for an attack on Iran's nuclear sites had 'dramatically accelerated' " and highlighted eight combined US-Israeli military exercises conducted so far in 2023. The IDF has also formed a new intelligence unit to prepare for potential hostilities with Iran.⁴⁴

Most experts agree Iran is already a nuclear threshold state, so the implication may be that an attack could be forthcoming. In 2021, while he was serving as Israeli foreign minister, Yair Lapid emphasized that "other options are on the table if diplomacy fails . . . by saying other options, I think everyone understands here, in Israel, in the Emirates, and in Tehran, what it is that we mean."⁴⁵ A year later, Biden assured Lapid, then serving as Israel's prime minister, that the United States would never allow Iran to acquire nuclear weapons.⁴⁶

In May 2023, Netanyahu held a mock wartime security cabinet meeting in a bunker. Analysts believe this demonstrated a substantial increase in the probability of an attack on Iran: Lapid is now the key opposition leader and "on the same note" as Netanyahu on Iran; the inner security cabinet that decides on war is hawkish on Iran; and the perceived window of vulnerability is closing as Iran builds a relationship with Russia and hardens its defenses against attack.⁴⁷

43. Alex S. Wilner, "Apocalypse Soon? Deterring Nuclear Iran and Its Terrorist Proxies," *Comparative Strategy* 31, no. 1 (2012): 18–40, <https://doi.org/>.

44. "Israel: The Iran Threat & Options," United States Institute of Peace – *Iran Primer* (blog), September 11, 2023, <https://iranprimer.usip.org/>.

45. Berman, "Word Games."

46. "U.S. Will Never Allow Iran to Acquire a Nuclear Weapon, Biden Tells Israel's Lapid," Reuters, August 31, 2022, <https://www.reuters.com/>.

47. Bronner and Meyer, "Will Israel Attack Iran?"

Netanyahu has also stated that “95 percent of Israel’s security problems come from Iran.”⁴⁸ More notable, most experts agree delaying Iran’s development of a nuclear weapon can only be accomplished in three ways: economic pressure, which the United States has been pursuing since 2005 in the form of sanctions; covert attacks, which have caused meaningful delays, but only slowed progress by months (and have been attributed to Israel by anonymous media sources); and the military option.⁴⁹

The Military Option

With the likelihood that sanctions and covert attacks will continue to be minimally effective in stalling Iran’s march toward a nuclear weapon, the remainder of this article focuses on Israel’s military preparations, which suggest an Israeli military attack on Iran in the not-too-distant future. The Begin Doctrine will apply to Iran in the same way it did to Iraq and Syria.

Some have asked why Israel did not strike Iran’s nuclear program when it was less developed and easier to target. In 2010, Netanyahu ordered IDF Chief Benny Gantz to prepare for an attack, which Gantz resisted. Netanyahu wanted to attack Iran’s nuclear program again in 2012, but the United States discouraged his efforts.⁵⁰

More recently, former Deputy IDF Chief Uzi Dayan has stated his belief that Israel now has the operational capability to strike Iran’s nuclear facilities, though it would still prefer that Washington take the lead or at least share in the effort.⁵¹ Presently, Netanyahu is said to be leading his most-hawkish coalition, meaning his opportunity to attack Iran is likely to garner more support than past efforts.⁵²

Air-Launch Capabilities

Israel is in the process of acquiring stealth-capable F-35 fighter jets from the United States and will soon have 50 in its inventory.⁵³ It recently announced that it will buy 25 more, which will bring its total to 75.⁵⁴ These fifth-generation assets are invisible to surface-to-air missiles, which defend nuclear targets in Iran. Accordingly, these fighter assets have given Israel much greater capability than they had just a few years ago to attack Iran’s nuclear targets.

48. “Israel: The Iran Threat.”

49. Berman, “Word Games.”

50. Charles Bybezezer, “‘Begin Doctrine’ at Bay: Why Israel Did Not End Iran’s Nuclear Program in Its Infancy,” Media Line, June 6, 2018, <https://themedialine.org/>.

51. Bronner and Meyer, “Will Israel Attack Iran?”

52. See Dan Williams, “Tapped to Head New Hard-Right Government, Netanyahu Pledges Israeli Unity,” Reuters, November 13, 2022, <https://www.reuters.com/>.

53. Seth J. Frantzman, “Israel Reveals First Time It Used F-35 to Shoot Down Iranian Drone,” *Defense News*, March 8, 2022, <https://www.defensenews.com/>.

54. Julia Frankel, “Israel to Buy More F-35 Fighter Jets from U.S. Deal Expands Fleet by 50% and Deepens Partnership,” AP, July 2, 2023, <https://apnews.com/>.

Moreover, Israel now has the required earth-penetrating weapons for its fighters. With inventories of the US-supplied GBU-28 deep-penetrating bunker-buster, Israel can penetrate the underground uranium enrichment facilities at Natanz and possibly Fordow; at the same time, the United States provided Israel with an ample supply of small diameter bombs in May 2023, another earth-penetrating weapon.⁵⁵ Israel had also previously designed its own 500-pound bomb, the MP-500, another bunker-buster that can penetrate four reinforced concrete walls.⁵⁶ Remaining known nuclear infrastructure and missile sites are aboveground and can be struck with standard conventional weapons.

Sea-Launch Capabilities

The Dolphin submarine is also crucial to an attack plan using submarine-launched cruise missiles. These low-flying missiles have projected ranges of 1,500 kilometers, meaning they could be launched from the Mediterranean Sea, Persian Gulf, or Arabian Sea, to reach targets in Iran and travel below radar, thus complicating Iran's missile and artillery defense systems' ability to shoot them down. Israel has six submarines carrying five or more of these missiles each, and they are also armed with torpedoes for defense or attacking shipping assets. Interestingly, the newest (sixth) Dolphin may also have vertical launch tubes for ballistic missiles.⁵⁷

Air Defense Capabilities

More important to Israel are its defensive assets since Iran's retaliation capability is much greater than Iraq's or Syria's were at the time of the preventive strikes. Israel has an overlapping missile defense system designed to thwart missile attacks.

Israel's first layer of defense is the Arrow antiballistic missile, designed to shoot down intermediate-range missiles such as Iran's Shahab 3 and 4 systems. The Arrow is centered on protecting Tel Aviv and Haifa from long-range attack.⁵⁸ One was recently launched and successfully shot down a surface-to-surface missile launched from the Red Sea region—most likely by the Houthis in Yemen who claimed responsibility for the attempted strike on Israel.⁵⁹ David's Sling is Israel's second layer of defense. Operational in 2017, this system is similar to the US Theater High Altitude Air Defense (THAAD) system and was designed jointly with American defense contractors. The

55. Dan De Luce and Courtney Kube, "Can Israel Take Out the Tunnels That Hamas Uses to Move Its Fighters and Weapons?," NBC News, October 13, 2023, <https://www.nbcnews.com/>.

56. Tzvi Ben Gedalyahu, "Video: Israel Tests Its Own Bunker Buster Bomb," Israel National News, March 14, 2012, <https://www.israelnationalnews.com/>.

57. H. I. Sutton, "Israel's Submarine Secret: New Dolphin-II's Could Have VLS," Naval News, January 19, 2022, <https://www.navalnews.com/>.

58. Hemnath Kumar, "Arrow 3 Air Defence Missile System, Israel," Air Force Technology, September 16, 2022, <https://www.airforce-technology.com/>.

59. Emanuel Fabian, "In First, Arrow Downs Eilat-Bound Missile from 'Red Sea Area'; Houthis Claim Attack," Times of Israel, October 31, 2023, <https://www.timesofisrael.com/>.

first batteries have been deployed and are designed to protect most of Israel from medium-range missile threats.⁶⁰ Note that the United States is also adding additional THAAD and Patriot batteries to the Middle East—likely to Israel—as an effort to deter Iran and its allies’ increased attacks against American troops in the region, which are likely in response to the October 2023 Hamas war.⁶¹

As a third layer of defense, Israel developed the Iron Dome missile defense system to defeat short-range incoming missile and artillery attacks from Hamas and Hezbollah. This system is well known for its success in protecting Israeli cities near Gaza. The Iron Dome has successfully shot down well over 90 percent of its targets, saving hundreds of lives on the ground.⁶²

Resilient Population

Finally, Israel may have the best-prepared society to withstand attacks: the nation has over a million bomb shelters, and all citizens are outfitted with gas masks and trained in emergency procedures. A large share of citizens are also members of Israel’s reserve army, meaning they are trained for resilience during incoming missile volleys or against any other form of attack.

Conclusion and Implications for US Policy

Considering all the wars Israel has fought in its short history as a state—1948, 1956, 1967, 1973, 1982, the Palestinian intifadas of 1987 and 2000, two insurgencies in Lebanon and a limited war of attrition that continued several years after the 1967 war, the Hezbollah war of 2006, Gaza conflicts in 2008, 2012, 2014, 2021, and the ongoing Gaza War of 2023—its civil society is “best described as a ‘national security’ culture, focused upon the survival of a state ever involved in war or gearing up for war.”⁶³

For Israel, “security has always taken priority over economics, personal concerns, or other governmental matters.”⁶⁴ The war mentality has driven Israel to preparedness in both the offensive and defensive means described above. And noting that this most recent Hamas attack is the most violent to date, and that Israel declared war on Hamas and seeks its destruction, it is also reasonable to assume Israel will do everything in its power to cut off Iran’s resupply and support efforts. It may conclude attacking Iran may be the best means to do so.

And while Israel would prefer not to “go it alone” against Iran, it is prepared to do so if necessary. US strategists estimate it will take 12,000 sorties requiring more than a

60. Judah Ari Gross, “Israel to Deploy David’s Sling, Final Piece of Missile Defense Shield,” *Times of Israel*, March 20, 2017, <https://www.timesofisrael.com/>.

61. Andres Martinez, “US Sends More Missile Defense Systems to Middle East,” *New York Times*, October 22, 2023, <https://www.nytimes.com/>.

62. Anshel Pfeffer, “The Costly Success of Israel’s Iron Dome,” *Atlantic*, May 24, 2021, <https://www.theatlantic.com/>. Talbot.

63. Brent Talbot, “Stuxnet and After,” *Journal of International Security Affairs* 21 (Fall/Winter 2011): 70.

64. Talbot.

week to execute in order to destroy Iran's nuclear infrastructure, and that is something Biden is not ready to commit to.⁶⁵ His administration—at least before the October 2023 Hamas attacks—indicated preference for a return to the now-dead nuclear deal. Such preference may mean the US administration is likely to continue to pressure Israel to not attack Iran on its own due to the risk of an expanded war and danger to US assets and partners in the region.⁶⁶

Still, Biden's support to Israel during the ongoing Hamas war is encouraging—he labeled the Hamas attack “sheer evil,” and his main caution has been against occupying Gaza. He even called the current crisis “an inflection point in history—one of those moments where the decisions we make today are going to determine the future for decades to come.”⁶⁷ Perhaps that rationale will persuade him to be more supportive of going after Iran—the source of Hamas' evil attack and of all the Iranian proxies threatening Israel at present.⁶⁸

Considering Iran is also facing an internal rebellion, one led by women protesting the mandatory hijab requirement, one Iranian expert suggests the focus of US policy should be on “championing the aspirations of the Iranian people to live in a free society at peace with the world.”⁶⁹ Doing so suggests enabling their freedom by countering government censorship. Elon Musk's effort to activate Starlink over Iran as a counter to its shutting down the internet during the 2022 hijab protests exemplifies this.⁷⁰ After all, events in Iran represent a social media-inspired movement much like the Arab Spring, so continued flow of the reporting of new killings, beatings, and arrests of women and others protesting against the Islamist government may weaken its hand, while at the same time turn its attention from nuclear proliferation.

Another option is to work with Arab partners and European allies to “contain Tehran” until it is defeated from within.⁷¹ But that is likely to take more time than Israel can afford. Instability within Iran will at least distract it from its ongoing efforts to destabilize this resource-rich region of the globe. Easing sanctions, trading Americans for ransoms, and other forms of cooperation at a time when Iran is persecuting its own citizens and supporting terrorism against Israel reward the regime for its evil deeds and send the wrong signal to Allies, partners, and enemies alike.

In the meantime, the United States must realize Israel is primed to attack Iran to enforce the Begin Doctrine with or without US approval, and thus, should be prepared for Iranian reprisals in the Gulf region. Biden has made the right choice sending carrier

65. Edward Luttwak, “The Prospects of a New Iran Deal,” *Strategika* 74, August 2, 2021, <https://www.hoover.org/>.

66. Luttwak.

67. Solcyre Burga and Mallory Moench, “Everything President Biden Has Said about the Israel-Hamas War,” *Time*, October 23 2023, <https://time.com/>.

68. Summer Said, Benoit Faucon, and Stephen Kalin, “Iran Helped Plot Attack on Israel over Several Weeks,” *Wall Street Journal*, October 8, 2023, <https://www.wsj.com/>.

69. Karim Sadjadpour, “What the West Should Learn from the Protests in Iran,” *Washington Post*, September 24, 2022, <https://www.washingtonpost.com/>.

70. Nicholas Gordon, “Musk Says He's ‘Activating Starlink’ in Iran As Its Government Blocks the Internet to Stop Spreading Protests,” *Fortune*, September 26, 2022, <https://fortune.com/>.

71. Karim Sadjadpour, “Iran's Hollow Victory: The High Price of Regional Dominance,” *Foreign Affairs* 101 (March/April 2022): 36–39.

strike groups and an amphibious ready group, along with more missile defenses to the Middle East.⁷² These may help deter Iranian attacks on Israel, and particularly against US forces stationed in Iraq, Syria, and the Gulf, as well as Gulf partners Kuwait, Bahrain, the United Arab Emirates, and Saudi Arabia. **Æ**

72. LaGrone, "Pentagon Extends."

TEN PROPOSITIONS REGARDING NUCLEAR WEAPONS AND DETERRENCE

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All progress toward a more peaceful, nuclear-free world made both during and since the Cold War seems to be receding. The United States is returning to a strategic situation not seen since the 1950s, and yet one that is also far more complex. The need to understand nuclear weapons and their deterrent value has never been higher. Given this era of unbalanced nuclear multipolarity, ten propositions can help guide leaders, strategists, and planners as they establish and execute policy overseeing the most important deterrent effort of humankind, that of nuclear war.

In March 2023, the UN announced the threat of nuclear weapons use was higher than it had been at any time since the Cold War.¹ This announcement came after increasing nuclear rhetoric and moves by the Russian Federation. Since the beginning of Russia's war in Ukraine in 2022, Moscow has made frequent and extreme nuclear threats.² In June 2023, Russian President Vladimir Putin announced the country would be deploying tactical nuclear weapons to Belarus.³ Concurrently, nuclear arms treaties between the United States and Russia have been unraveling.⁴ All progress toward a more peaceful, nuclear-free world made both during and since the Cold War seems

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1. "Risk of Nuclear Weapons Use Higher Than at Any Time Since Cold War, Disarmament Affairs Chief Warns Security Council," United Nations, March 31, 2023, <https://press.un.org/>.

2. Lauren Sukin, "Rattling the Nuclear Saber: What Russia's Nuclear Threats Really Mean," Carnegie Endowment for International Peace, May 4, 2023, <https://carnegieendowment.org/>.

3. Guy Faulconbridge, "Putin Says Tactical Nuclear Weapons to Be Deployed in Belarus in July," Reuters, June 9, 2023, <https://www.reuters.com/>.

4. "Putin: Russia Suspends Participation in Last Remaining Nuclear Treaty with U.S.," Reuters, February 21, 2023, <https://www.reuters.com/>.

to be slipping away. The United States is returning to a strategic situation not seen since the 1950s, and yet one that is also far more complex. The need to understand nuclear weapons and their deterrent value has never been higher. For nearly 50 years, nuclear deterrence was the central tenet of national defense for the United States and the Soviet Union. Its logic was brutally simple: to avert war, be prepared to destroy each other.⁵ Since the end of the Cold War, neither side has had a security policy so intense or dangerous as those in place during that period.

In fact, when the Cold War ended and the proximate security threats to the United States shifted to rogue nations, nonstate actors, and terrorist groups, nuclear weapons and their place in international security increasingly came into question. Accordingly, their role in the national defense strategy was downplayed or overlooked.⁶ By September 11, 2001, those who continued to tout the value of nuclear weapons were considered legacy thinkers. This is no longer the case today.

The United States has entered a period of unbalanced, nuclear multipolarity, where three or more great powers compete for power and security every day.⁷ This raises two immediate issues for the United States. First, the country has never been here before. The Cold War was a bipolar arrangement. With only two players in the game, it was easier to understand and less difficult to play. Of note, theoretical conceptions of three-player deterrence are rare.⁸

Second, due to the passing of time, negligence, or both, the term deterrence has taken on new meanings. Once synonymous with avoiding nuclear war, deterrence now comes in many forms. Strategic deterrence, integrated deterrence, extended deterrence, conventional deterrence, cyber deterrence, space deterrence, and cross-domain deterrence all compete for attention.⁹ But it is important to be clear: nothing possesses a higher imperative than deterring a nuclear war. It remains the original, existential threat, and its avoidance is, or should be, what deterrence is all about. Given the stakes, this article offers the following propositions for leaders, strategists, and planners to consider as the United States prepares to fight the next war.

5. Thomas Schelling, *Arms and Influence*, 2008 ed. (New Haven, CT: Yale University Press, 2008); Bernard Brodie, *Strategy in the Missile Age* (Princeton: Princeton University Press, 1965); Herman Kahn, *On Escalation: Metaphors and Scenarios*, 1st ed. (New Brunswick, NJ: Routledge, 2009); and Herman Kahn and Evan Jones, *On Thermonuclear War*, 1st ed. (New Brunswick, NJ: Routledge, 2007).

6. See, for example, Donald H. Rumsfeld, *Quadrennial Defense Review Report* (Washington, DC: DoD, September 2001); and Rumsfeld, *The National Defense Strategy of the United States of America* (Washington, DC: DoD, March 2005).

7. Kenneth N. Waltz, *Theory of International Politics*, 1st ed. (Longrove, IL: Waveland Press, 2010).

8. Melvin Deaile, "The Problem with Three: Great Power Competition Deterrence," Wild Blue Yonder, April 13, 2021, <https://www.airuniversity.af.edu/>.

9. See John Mearsheimer, *Conventional Deterrence* (Ithaca, NY: Cornell University Press, 1983); and Chairman of the Joint Chiefs of Staff (CJCS), *Joint Operations*, Joint Publication 3-0 (Washington, DC: CJCS, 2018).

1. The power to punish deters.

During the Cold War, the power to punish was universally recognized and well understood, and nuclear weapons epitomize this power.¹⁰ In what remains one of the most quoted statements in the field of security studies, Bernard Brodie made the main objective of the US military clear at the close of World War II: “Thus far, the chief purpose of our military establishment has been to win wars. From now on, its chief purpose must be to avert them. It can have no other useful purpose.”¹¹

As a rationalist and RAND analyst, Brodie would develop a deep-seated understanding of nuclear weapons and their destructive potentialities. The examples here focus on strategic or high-yield nuclear weapons. This logic is likely to hold for tactical nuclear weapons as well, for two reasons. First, there is a widely understood distinction between conventional and nuclear warfare creating a threshold over which it would be difficult to cross without significantly altering the status quo.¹² Second, the risk of introducing tactical nuclear weapons and not having the conflict spiral into a strategic exchange is non-negligible, as the incentive for each side to strike first strategically increases exponentially in magnitude.

For illustrative purposes, the destructive power of nuclear weapons cannot be overstated: one 300-kiloton weapon is more than enough to destroy a city the size of Washington, DC.¹³ If a bomb of that size were detonated above the National Mall, approximately 335,540 people would die, and 587,800 casualties would be sustained. Nearly everything within a three-mile radius would be destroyed, with burn victims as far away as American University. The same bomb detonated above Midtown Manhattan in New York City would kill nearly 1.2 million people and produce more than 1.9 million casualties. Damage would extend as far away as Queens.¹⁴

An equally great danger is the targeting of a state’s nuclear arsenal, the loss of which would inhibit the ability of that state to deter further attack by threatening to respond in kind. Yet even if one were to assume the worst, a bolt from the blue in which a state lost 50 percent of its nuclear capability to a first strike, a relatively small force of even 100 weapons would allow that state to strike back over 50 times before it had to negotiate.¹⁵ The existence of survivable nuclear forces, such as nuclear submarines, allows

10. James J. Wirtz, “How Does Nuclear Deterrence Differ from Conventional Deterrence?” *Strategic Studies Quarterly* 12, no. 4 (2018).

11. Bernard Brodie, *The Absolute Weapon: Atomic Power and World Order* (New York: Harcourt, Brace and Company, 1946), 76.

12. Schelling, *Arms and Influence*.

13. Hans M. Kristensen and Matt Korda, “United States Nuclear Weapons, 2023,” *Bulletin of the Atomic Scientists* 79, no. 1 (January 2, 2023), <https://doi.org/>; and Hans Kristensen, Matt Korda, and Eliana Reynolds, “Russian Nuclear Weapons, 2023,” *Bulletin of the Atomic Scientists* 79, no. 3 (May 4, 2023), <https://doi.org/>.

14. Figures calculated using “NUKEMAP by Alex Wellerstein,” accessed June 14, 2023, <https://nuclearsecrecy.com/>.

15. See also Matthew Kroenig, *The Logic of American Nuclear Strategy: Why Strategic Superiority Matters* (Oxford, UK: Oxford University Press, 2018), ch. 2.

states to hold adversaries at risk from the destruction wrought by nuclear retaliation, even in the event of a bolt from the blue.

This cuts to the heart of the matter: nuclear weapons deter. They raise the costs of war so high and so fast that few states, if any, can afford to run the risks of a nuclear confrontation. This does not mean nuclear deterrence cannot fail. Indeed, it might. But if it does, it will not be because leaders are insensitive to the punishments they face should they choose to use a nuclear weapon.¹⁶ If this were true, deterrence would not work at all.

It is important to note here that, related to deterrence resulting from punishment, nuclear weapons also provide nuclear states with a certain level of impunity when it comes to taking actions against nonnuclear states. Russia's actions with regard to Ukraine in 2022 are an excellent example, as many took Russia's nuclear threats as a warning to NATO to stay out of the conflict. Yet nuclear threats also serve as critical communication in identifying issues of great importance to nuclear states.

Such freedom, however, has its limits. In November 2022, when a "Russian-made" missile landed in Poland, killing two people, NATO leaders were quick to convene, taking time out from the G20 summit in order to determine how to respond, ultimately deciding to wait for verification of the most likely provocation. Russia, meanwhile, vehemently denied the strike, claiming its missiles came no closer than 22 miles from the Polish border.¹⁷ Regardless of what Russia was doing in Ukraine, it is clear neither Russia nor NATO wanted to engage one another.

2. The spread of nuclear weapons is neither universal nor universally threatening.

There are 195 states in the world; fewer than 10 have nuclear weapons. This number is far below that predicted during the height of the Cold War.¹⁸ Why? A sensible answer begins with the exigencies of security and the pursuit of power.

The world is made of rich, poor, strong, and weak states. Strong states, with robust economies and generally capable militaries, can presumably do more than weak ones, but this comes with a price. They must deal with one another all the time and as a result, tend to fight more wars than most.¹⁹ Strong states acquire nuclear weapons because the

16. Michael D. Cohen, *When Proliferation Causes Peace: The Psychology of Nuclear Crises* (Washington, DC: Georgetown University Press, 2017).

17. Sukin, "Rattling the Nuclear Saber"; Tim Lister et al., "World Leaders Hold Emergency Meeting as 'Russian-Made' Missile Kills Two in Poland," CNN, November 15, 2022, <https://www.cnn.com/>; "Russia Says Missile Strike in Poland Caused by Ukrainian Air Defence," Reuters, November 16, 2022, <https://www.reuters.com/>; and Phil Mattingly et al., "Poland, NATO Say Missile That Killed Two Likely Fired by Ukraine Defending against Russian Attack," CNN, November 16, 2022, <https://www.cnn.com/>.

18. Schelling, *Arms and Influence*.

19. Kenneth N. Waltz, *Theory of International Politics*; and John J. Mearsheimer, *The Tragedy of Great Power Politics*, updated ed. (New York: W. W. Norton & Company, 2014).

threats they face from other nuclear powers are existential. The same is the case with weak states.

Since nothing exists to protect weak states from the harmful intentions of others, they must either attempt to ally themselves with a nuclear protector or undertake severe costs to acquire a nuclear arsenal. Those that live in tough nuclear neighborhoods, such as Pakistan or Iran, are hard pressed to find a nuclear patron and so are likely to pursue an independent nuclear weapons capability to ensure their own survival.

Extending this logic further, one can deduce that states, regardless of their internal composition, wealth, or desires, acquire nuclear weapons because their security, however defined, demands it. Should their security not demand it, they never pursue nuclear weapons, abandon their attempts to pursue them, or give them up altogether, as in the case of Argentina, Brazil, and South Africa.

Further, nuclear weapons can be stabilizing, particularly during periods of power transition. Across history, such transitions have often involved a clash between great powers. The rise of Athenian power in ancient Greece and the fear it aroused in Sparta are said to have caused the Peloponnesian War. Similarly, in the summer of 1914, a rising Germany created uncertainty and fear within Britain prefacing World War I.²⁰ As China rises, the United States may be witnessing a power transition between itself and China that could result in war. While war may not be inevitable, power transitions are tricky things if not downright dangerous. The exception, of course, was 1989, when the Cold War ended peacefully.

Certainly, Soviet Union leader Mikhail Gorbachev and US President Ronald Reagan receive some of the credit for the peaceful culmination of the Cold War. Their extraordinary relationship softened positions on both sides of the Atlantic and ushered in the end of the Cold War. Crushing defense expenditures inside Russia also contributed. Put simply, the Soviet Union could not afford to pay for the rising costs of security, and this accelerated its demise.

But one should not overlook the role played by nuclear weapons. Nuclear weapons were the guarantor of last resort. They stabilized the system as one great power fell and another became paramount. Even in such an unequal world, Russian security was underwritten by its thermonuclear stockpile. From this, one can deduce that nuclear weapons can certainly threaten some states, but they can have a stabilizing effect as well. As Kenneth Waltz notes, nuclear weapons have a maturing effect on the gaining country.²¹ Yet this maturing takes place over time.²² As discussed in proposition five below, nuclear weapons socialize leaders into behaving more cautiously regardless of their relative power position.

20. See A. F. K. Organski, *World Politics*, 2nd (rev.) ed. (New York: Alfred A. Knopf, 1968).

21. Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: An Enduring Debate* (New York: W. W. Norton & Company, 2013).

22. Cohen, *Proliferation*.

3. States need not demonstrate a capacity to win a nuclear war to prevent one.

A state does not have to demonstrate a capacity to win a nuclear war to prevent one, because the devastating consequences of nuclear war are clear. Reflecting on this, McGeorge Bundy, national security adviser under Presidents John F. Kennedy and Lyndon B. Johnson, commented, “A decision that would bring even one hydrogen bomb on one city of one’s own country would be recognized in advance as a catastrophic blunder; ten bombs on ten cities would be a disaster beyond history; and a hundred bombs on a hundred cities are unthinkable.”²³

Along these lines, Brodie observed that “few people were unexcited or unimpressed with the first atomic weapons. That something tremendously important had happened was immediately understood by almost everyone.”²⁴ Yet, just one year after using nuclear weapons in combat, the United States proposed to turn over its nuclear weapons to an international governing council under what became known as the Baruch Plan.²⁵ That the country would do so at a time when it enjoyed an unbroken monopoly of nuclear weaponry testifies to the collective realization that these weapons were, in today’s parlance, game changers. From the beginning, policies were meticulously devised on both sides of the Atlantic to prevent the outbreak of a nuclear war, not to win one.

Today, the variety of nuclear postures pursued by regional nuclear powers suggests some states, particularly those who lack an assured retaliation posture, use nuclear weapons to prevent invasion or other attack on their homeland.²⁶ Indeed, some scholars argue states pursue nuclear weapons for one of three reasons—security concerns, domestic politics, and prestige—and further assert that they work concurrently but nearly always in the presence of an overwhelming security concern.²⁷

4. Nuclear weapons—regardless of numbers—are strategic weapons.

It is generally recognized that throwing more forces and weapons into battle may increase the carnage but not necessarily procure victory. The same holds with nuclear numbers. This presupposes that government leaders are not sensitive to the actual number of nuclear weapons a state may possess; they are sensitive to whether other nations may dominate it militarily. As one strategist aptly puts it, American

23. McGeorge Bundy, “To Cap the Volcano,” *Foreign Affairs* 48, no. 1 (October 1969): 9–10.

24. Brodie, *Strategy*, 150.

25. “The Acheson-Lilienthal & Baruch Plans, 1946,” Office of the Historian, US Department of State, accessed December 4, 2023, <https://history.state.gov/>.

26. Vipin Narang, *Nuclear Strategy in the Modern Era: Regional Powers and International Conflict* (Princeton, NJ: Princeton University Press, 2014).

27. Scott D. Sagan, “Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb,” *International Security* 21 (January 1, 1997), <https://cisac.fsi.stanford.edu/>; and Scott Curtice, *Why Do States Build Nuclear Weapons? Proliferation Models as Concurrent Pressures on a State* (Maxwell AFB, AL: Wright Flyer Papers, Air Command and Staff College, 2021), <https://media.defense.gov/>.

policymakers understand this logic, or “they would not be so worried when a state like North Korea or Iran makes a move to join the nuclear club.”²⁸

This begs the question, How many nuclear weapons do states need to achieve relative security? That is a big question for which there is, theoretically, a small solution: one an adversary can take out with a first strike and one it knows it cannot. Since deterrence holds because of a viable second-strike capability, the capability to deter need not be large.²⁹

But suppose a nuclear armed adversary were contemplating a first strike. What would the second question put to the leader be? Given that most secure second-strike capabilities take the form of mobile (road mobile missiles) or hidden (sea-launched ballistic missiles from submarines) nuclear weapons, the response would likely be, Which city of ours are we willing to give up in exchange? The example is illustrative for two reasons. First, strategy is not contingent upon just the first move but also the following ones. Second, in high-stakes games like nuclear war, second- or third-round moves are riddled with danger, so everything turns on preventing the first move, which makes the game relatively easy to understand and simpler to play.

As Thomas Schelling wrote, nuclear war has the ability to compress the fury of war into a few hours, divorcing it from the political process.³⁰ One can surmise that when a state possesses the ability to command, deliver, and survive a nuclear attack, it is able to practice deterrence commensurate with its desire to project power. In other words, nuclear weapons—regardless of numbers or yields—are strategic ones; there is nothing tactical about their use or threats of their use. The mere presence of nuclear weapons is enough to condition state behaviors. Take China, Russia, and the United States, for example.

China’s nuclear numbers remain relatively small at less than one-tenth the number possessed by either Russia or the United States. According to the Stockholm International Peace Research Institute (SIPRI), China possesses 490 nuclear weapons, the United States possesses 5,244, and Russia possesses 5,889.³¹ Yet, despite these large nuclear inequities, China has embarked on an ambitious nuclear modernization and expansion program.³² How does one explain this behavior?

China’s nuclear modernization is driven by a desire to use its nuclear weapons to prevent the United States from interfering with its security activities and expansionist agenda, potentially including backstopping Beijing’s action toward Taiwan.³³ There is

28. Stephen Walt, qtd. in James Wood Forsyth, B. Chance Saltzman, and Gary Schaub, “Minimum Deterrence and Its Critics,” *Strategic Studies Quarterly* 4, no. 4 (2010): 3, <https://www.airuniversity.af.edu/>.

29. Schelling, *Arms and Influence*; and Brodie, *Strategy*.

30. Schelling, 20–21.

31. Stockholm International Peace Research Institute (SIPRI), *SIPRI Yearbook 2023: Armaments, Disarmament and International Security* (Oxford, UK: Oxford University Press, 2023), 248, <https://www.sipri.org/>.

32. DoD, *Military and Security Developments Involving the People’s Republic of China: Annual Report to Congress* (Washington, DC: DoD, 2022), <https://media.defense.gov/>.

33. Chris Buckley, “Fear and Ambition Propel Xi’s Nuclear Acceleration,” *New York Times*, February 4, 2024, <https://www.nytimes.com/>.

little that Russia or the United States can do militarily to prevent China from pursuing its armament programs or vice versa. The presence of even a small number of nuclear weapons makes talk of war reckless, so leaders on all sides try to avoid it. Nothing official has been declared, but all know the stakes are too high for any crisis that might lead to military conflict.³⁴

Still, why is China building up its nuclear arsenal if its small force already deters? China claims to maintain a “lean and efficient” nuclear arsenal, and that its modernization is being driven by the need for “nuclear capabilities at the minimum level required for maintaining its national security,” which some have surmised is a response to China’s perception of US actions as threats.³⁵ To that end, China’s modernization has focused on improving its secure second strike by building underground shelters for its nuclear weapons, solidifying its sea-based leg of its triad, and working to diversify its arsenal.

But there is more. China recognizes the political power of nuclear weapons. Quite simply, the possession of nuclear weapons, more so than any other weapon, serves as the great equalizer; these weapons put weaker nations on par with stronger ones in a moment’s notice. For example, China’s massive investment in its ICBM force, which includes the construction of three new fields with missiles capable of reaching the United States but out of reach of US conventional missiles, gives China’s leader increased bargaining power.³⁶ And if China recognizes this, others do, too, which is why the spread of nuclear weapons is likely to continue.

5. Nuclear weapons make leaders cautious in the face of grave danger.

Nuclear weapons socialize leaders to the dangers of adventurism and restrain them from behaving recklessly to provocation.³⁷ This is not to suggest nuclear weapons cannot embolden nuclear leaders. As Putin’s actions in Crimea and Ukraine illustrate, when faced with a nonnuclear opponent, they can. Yet when a nuclear leader is confronted by another nuclear leader, caution appears to be the order of the day. The Cuban Missile Crisis exemplifies this phenomenon.

During the Cuban Missile Crisis, President Kennedy and Soviet leader Nikita Khrushchev sought solutions short of war, despite their sharp political, cultural, and economic differences. Leftist revolutionary leader Fidel Castro did offer advice during the crisis, but the Kennedy and Khrushchev negotiations were the major drivers of

34. Barry R. Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, repr. ed. (Ithaca, NY: Cornell University Press, 2014); and Cohen, *Proliferation*.

35. China Power Team, “How Is China Modernizing Its Nuclear Forces?,” ChinaPower, December 10, 2019, <https://chinapower.csis.org/>; and M. Taylor Fravel, Henrik Stålhane Hiim, and Magnus Langset Trøan, “China’s Misunderstood Nuclear Expansion,” *Foreign Affairs*, November 10, 2023, <https://www.foreignaffairs.com/>.

36. Buckley, “Fear and Ambition.”

37. See Sagan and Waltz, *Spread of Nuclear Weapons*, ch. 1.

action. That the Soviets might have underestimated how the United States would react when confronted with a relatively small number of missiles based off the coast of Florida is not as telling as how both leaders behaved when they realized what was at stake.

Then-Secretary of State Dean Rusk's comment that "We were eyeball to eyeball" is illustrative for several reasons.³⁸ First, the two sides were staring into the face of grave danger. Second, both grasped the importance of avoiding nuclear war. Lastly, even though the situation was riddled with ambiguity, the two sides recognized the outcome of the crisis depended as much on the moves of one side as it did the other. One quotation is representative of many others. In a meeting with the Joint Chiefs of Staff, Kennedy outlined what was on his mind:

If we attack Cuban missiles, in any way, it gives them a clear line to take Berlin, as they were able to do in Hungary under the Anglo war in Egypt. We would be regarded as the trigger-happy Americans who lost Berlin. We would have no support among our allies. We would affect the West Germans' attitude toward us. And people would believe that we let Berlin go because we didn't have the guts to endure Cuba. If we go in and take them out in an air strike . . . we increase the chance greatly, as I think—there's bound to be a reprisal from the Soviet Union, there always is—of their just going in and taking Berlin by force. Which leaves me one alternative, which is to fire nuclear weapons—which is a hell of an alternative—and begin a nuclear exchange, with all this happening.³⁹

During the entire crisis, the number of Soviet nuclear weapons on Cuban soil was not the focal point of US concern; in fact, the number of these weapons—strategic and tactical—was not known until many decades later.⁴⁰ The avoidance of nuclear war was the focal point: the threshold easily recognized, best not crossed, and worth avoiding. As early as 1962, the superpowers began to wonder out loud that they could race to the brink of war but no further, lest they run the risk of nuclear war, a risk that neither side would willingly take. Following the crisis, both sides took steps to reduce uncertainty and improve crisis stability, including the installation of a direct phone line between the White House and the Kremlin and negotiations that led to the test ban treaty, which planted the seeds for meaningful arms control.⁴¹

38. Dean Rusk, qtd. in Joseph S. Nye, "Cuban Missile Crisis at 50," *Korea Times*, October 15, 2012, <https://www.koreatimes.co.kr/>.

39. Ernest R. May and Philip D. Zelikow, eds., *The Kennedy Tapes: Inside the White House during the Cuban Missile Crisis*, concise ed. (New York: W. W. Norton & Company, 2002), 175–76.

40. Svetlana Savranskaya, "Cuba Almost Became a Nuclear Power in 1962," *Foreign Policy*, October 10, 2012, <https://foreignpolicy.com/>.

41. "Cuban Missile Crisis, October 1962," Office of the Historian, n.d., accessed December 4, 2023, <https://history.state.gov/>.

6. Nuclear guarantees might be the fate of the United States, but they should not be US policy.

Former Secretary of State and then-counselor to the Center for Strategic and International Studies Henry Kissinger made this clear when he advised European leaders not to keep asking “us to multiply strategic assurances that we cannot possibly mean or if we do mean, we should not want to execute, because if we execute, we risk the destruction of civilization.”⁴² In short, guarantees put guarantors in a tough spot. They raise the moral hazard and commit the United States to nuclear use even before there is an attack on the homeland.

As such, the United States is careful about who is allowed under the nuclear umbrella. Currently, NATO Allies, Japan, South Korea, and Australia are the only states considered to have guarantees of US nuclear protection.⁴³ That is not to say the United States never extends its nuclear guarantee. When Finland and Sweden applied for NATO accession, they were, in effect, applying for nuclear protection. The United States voted in favor of both countries’ membership.⁴⁴

The alternative to extended deterrence, of course, is selective proliferation—the idea of allowing and even assisting some states to safely acquire a capability of their own. Selective proliferation was the soft US policy prior to the late 1960s, and France and Britain gained nuclear weapons during this time.⁴⁵ And while seemingly risky, given proposition two, few states will seek a capability of their own because their security does not require it. Thus, decisions for and against nuclear weapons ought to rest on the prudential security needs of states and nothing else.

7. Nuclear deterrence may be difficult to integrate.

Integrated deterrence is defined as “the seamless combination of capabilities to convince potential adversaries that the costs of their hostile activities outweigh their benefits,” and nuclear deterrence has been called “foundational to integrated deterrence.”⁴⁶ In practical terms, what does it mean? In narrow terms, it might

42. Henry A. Kissinger, “The Future of NATO,” in *NATO The Next Thirty Years: The Changing Political, Economic, and Military Setting*, ed. Kenneth A. Myers (London: Routledge, 1980), 8.

43. “NATO’s Nuclear Deterrence Policy and Forces,” NATO (website), last updated November 30, 2023, <https://www.nato.int/>; “U.S.- Japan Joint Leaders’ Statement: ‘U.S. - JAPAN GLOBAL PARTNERSHIP FOR A NEW ERA,’” White House, April 17, 2021, <https://www.whitehouse.gov/>; “Washington Declaration,” White House, April 26, 2023, <https://www.whitehouse.gov/>; and Anna Hood and Monique Cormier, “The Role of AN-ZUS in Australia’s Reliance on US Extended Nuclear Deterrence,” Australian Institute of International Affairs, September 16, 2021, <https://www.internationalaffairs.org.au/>.

44. “Finland & Sweden Accession,” NATO Parliamentary Assembly, n.d., accessed June 14, 2023, <https://www.nato-pa.int/>.

45. Nicholas L. Miller, *Stopping the Bomb: The Sources and Effectiveness of US Nonproliferation Policy* (Ithaca, NY: Cornell University Press, 2018).

46. Joseph R. Biden Jr., *National Security Strategy* (Washington, DC: White House, October 2022), 21–22.

mean nuclear deterrence should be combined with something else, but what would that be exactly?

The 2022 *National Security Strategy* calls for integration across the spectrum of conflict, so nuclear weapons might be combined with conventional weapons. The *Strategy* also requires integration across the US government, so it might mean nuclear weapons should be synchronized with other instruments of power.⁴⁷ Often, when considering the integration of nuclear weapons, thought goes into how nuclear weapons might provide deterrence to nonnuclear operations, and such use seems noncredible. After all, threatening to drop a nuclear weapon in response to, for example, economic sanctions, is unlikely to fit within the United States' commitment to proportionality, and is therefore hardly a credible threat.⁴⁸

Yet nuclear weapons can indeed backstop nonnuclear goals. For example, in the conflict with Ukraine, Russia was likely deterred from attacking vulnerable supply lines, because they were in NATO territory.⁴⁹ While the United States cannot know Russia's internal calculations, NATO's nuclear posture probably played at least some role in Putin's calculus. The question that is yet to be answered is how can these ties be clearly and credibly communicated to adversaries?

An additional puzzle is how to integrate conventional weapons into nuclear deterrence aims. Deterrence options as varied as a kinetic attack on an adversary's non-nuclear command and control space assets, cyberattacks on adversary infrastructure, and deep conventional strikes in adversary territory might all be used to manage escalation toward nuclear conflict. Incidentally, cross-domain operations can have complicating effects on escalation control measures, in part because of how cyber or space may be viewed differently from nuclear weapons by decisionmakers.⁵⁰

In short, there are two main issues when considering integrated deterrence in the nuclear context: integrating nuclear weapons into a whole-of-government deterrence strategy and integrating conventional weapons into a nuclear deterrence strategy.⁵¹ Importantly, when it comes to integrating nuclear weapons into a larger nonnuclear deterrence strategy, the practicalities are difficult and must be further examined in order to make integrated deterrence universally recognized and well understood.

47. Biden.

48. Ron Lehman, "Simplicity and Complexity in the Nth Nuclear Era," in *Cross Domain Deterrence: Strategy in an Era of Complexity*, ed. Jon R. Lindsay and Erik Gartzke (Oxford, UK: Oxford University Press, 2019), 66–91.

49. Michael Crowley, "Would Putin Strike NATO Supply Lines to Ukraine? History Suggests No," *New York Times*, March 28, 2022, <https://www.nytimes.com/>.

50. Lehman, "Simplicity and Complexity."

51. See Stephen W. Preston, *Department of Defense Law of War Manual* (Washington, DC: Office of General Consul, DoD, December 2016), <https://ogc.osd.mil/>.

8. Nuclear weapons have prevented major wars from occurring among nuclear powers.

Since the advent of nuclear weapons, there has never been a war the size and scope of World War I or World War II. Nuclear powers hesitate to engage in warfare with one another. That is not to say nuclear powers do not quarrel, threaten, or even fight proxy wars against one another—they do. But nuclear states rarely, if ever, fight wars against one another. Why? The costs of fighting a nuclear war are existential—they are tied directly to the survival of the state. And all conflicts, no matter how small, are subject to the risks of escalation.⁵²

These risks are why states such as China and India maintain strict ceasefire agreements along their contested border. Even when limited confrontations occur, as they did in the June 2020 Galwan Crisis, these states are very careful to avoid any hint of escalation.⁵³ Given their destructive power, nuclear weapons cannot credibly deter all actions that run contrary to one's national interest, and if the United States were to try to do so, it would undermine its credibility. In the final analysis, however, nuclear weapons prevent existential wars from occurring among nuclear powers. Thus, the long peace among nuclear powers should not be downplayed or overlooked.⁵⁴

9. As the deterrence landscape becomes more complex, the United States will need to pursue a more agile deterrence posture.

During the Cold War, the United States was able to posture its nuclear arsenal by matching force with the Soviet Union. Yet today, the United States is confronted with two nuclear great powers: Russia and China. The introduction of a third state to the deterrence landscape results in a more complex and unpredictable strategic environment.⁵⁵

In *On War*, Carl von Clausewitz wrote about the dynamic relationship between violent emotion, chance, and rational policy. He goes on to state that these “concern”

52. Kahn, *On Escalation*; and Posen, *Inadvertent Escalation*.

53. Kathryn M. G. Boehlefeld, “Sticks and Stones: Nuclear Deterrence and Conventional Conflict,” *Journal of Indo-Pacific Affairs* 3, no. 4 (Winter 2020).

54. John Lewis Gaddis, *Strategies of Containment: A Critical Appraisal of American National Security Policy during the Cold War*, 2nd ed. (Oxford, UK: Oxford University Press, 2005).

55. Deaile, “Problem with Three.”

the people, the commander, and the government, respectively.⁵⁶ In his explanation, Clausewitz argues “a theory [of war] that ignores any one of them or seeks to fix an arbitrary relationship between them would conflict with reality to such an extent that for this reason alone it would be totally useless.”⁵⁷ In his work, Clausewitz advocates for the need to develop a theory of the relationship between the three, which he likens to an object suspended between three magnets. The inherent chaos resulting from the attractive force between three entities is known as the three-body problem.⁵⁸

Modeling a relationship between three entities has long confounded scientists. Adding a third player to a relationship causes a jump in complexity and an inherent chaos; this applies to fields as diverse as astronomy, biology, and mathematics. When considering the application to the deterrence environment, one merely has to think about the changing dynamics in a family that moves from two children to three. With two children, one relationship exists. But when a third child is added, the number of relationship ties jumps to seven: each child has a one-on-one relationship with each of his/her siblings, there are two-on-one dynamics, and there is a whole group relationship.⁵⁹

Considering the family dynamic is particularly useful when thinking through the three-body problem in nuclear deterrence. Changes in any one-on-one relationship, for example, between the United States and China, have the potential to alter other one-on-one relationships, say between China and Russia, or the United States and Russia. Further, two-on-one dynamics must also be considered. The United States has considered the implications of an alliance or closing of ties between Russia and China, but it would be ill advised should it fail to consider how it might use its own two-on-one relationship with either state to create more favorable outcomes, such as treaties to limit an arms race. Every move made by the United States must now take each of those seven relationship ties into account.

The dynamic is more complex and more prone to deterrence failure, but as argued above, the solution is also more complex than simply building an arsenal that outweighs the sum total of China and Russia. Rather, the United States needs to pursue a more agile and responsive nuclear posture, one that has the ability to respond to the increased complexity of the strategic environment, quickly and precisely.⁶⁰

56. Carl von Clausewitz, *On War*, ed. and trans. Michael Eliot Howard and Peter Paret, indexed ed., rev. ed. (Princeton: Princeton University Press, 1989), 89.

57. Clausewitz.

58. Clausewitz; and Editors, “Three-Body Problem, Physics,” *Encyclopaedia Britannica*, Science and Tech (website), October 30, 2023, <https://www.britannica.com/>.

59. William J. Broad, “The Terror of Threes in the Heavens and on Earth,” *New York Times*, June 26, 2023, <https://www.nytimes.com/>.

60. Deaile, “Problem with Three.”

10. Reliance on nuclear weapons is a sensible strategy for some states, which is why it is likely to continue for some time.

From 1945 to 1990, the United States and the Soviet Union relied on nuclear weapons to prevent nuclear war. It was a precarious, even dangerous time filled with uncertainties. Yet, deterrence held. Why?

Deterrence held because nuclear weapons, more so than any other weapon, hold power at bay.⁶¹ Sensible strategists know this in advance, which is why relations among nuclear powers remain stable. Nuclear weapons are not perfect, but the lack of war among the nuclear powers should not be overlooked or downplayed. Until the time comes when all states decide to forgo nuclear weapons, some states will need to have them; most will not. And as tragic as it sounds, that might be as good as it gets. It can certainly get worse.

The United States uses nuclear weapons every day. Nuclear deterrence is, at its core, a game where two opponents are perpetually held in check by one another. For military leaders and policymakers who have spent the majority of their careers in a post-Cold War world, it is easy to overlook the criticality of these immense, destructive weapons precisely because they are frozen on the chessboard, postured and ready for employment, if ever needed. Yet, as the United States returns to an era of great power competition, nuclear weapons have again become salient and essential aspects of the US national defense strategy and day-to-day military posture and campaigning activities. As the United States plans for its future, it is important to recognize that twenty-first century strategic deterrence will be far more complex than Cold War deterrence, as it will need to interweave third-party influencers, global economies, and a perplexing and complex information environment. These ten propositions will help further the dialogue around nuclear deterrence and the role this deterrence will play in future conflicts.

61. Brodie, *Strategy*, 275.

**RUSSO-AMERICAN
STRATEGIC
NUCLEAR ARMS
CONTROL**

**New START or a
New Start?**

STEPHEN J. CIMBALA

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This article considers whether the temporarily iced New Strategic Arms Reduction Treaty (START) can continue to serve as a fulcrum for the renewal of Russo-American strategic nuclear arms control. Going forward, the political and military-technical challenges to rebooting the New START and/or leapfrogging over it are formidable but not insurmountable. The article first considers the existing status of New START and both Russian and American strategic nuclear forces. Second, it discusses the fivefold context of challenges that face decisionmakers and negotiators in Washington and Moscow, and, although unlikely, Beijing. Third, the article analyzes the adequacy of New START-compatible forces to provide for surety in deterrence, crisis, and arms race stability, allowing for various levels of performance under exigent conditions.

In February 2023 Russian President Vladimir Putin announced Russia was suspending participation in the New Strategic Arms Reduction Treaty (START) signed by the United States and Russia in 2010. Considering that the treaty had no measure for such an action, the act effectively equated to withdrawal.¹ Almost a year later, both nations are looking ahead at future deterrence and arms control. A new or renewed New START could tame the growth of strategic nuclear arsenals and provide a measure of deterrence and arms race stability, but this is insufficient for the longer term. Effective treaty negotiations must grapple with challenges, including Russia's war in Ukraine; China's nuclear expansion; the space and cyber domains; new offensive and defensive technologies; and the various concepts of escalation and de-escalation held by the three powers in question.

Background

New START entered into force in 2011 and was extended by mutual agreement between Russia and the United States in 2021, until 2026. The treaty limits each state to a

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1. Office of the Spokesperson, Department of State (DoS), "Russian Noncompliance with and Invalid Suspension of the New START Treaty," press release, DoS, June 1, 2023, <https://www.state.gov/>.

maximum of 800 deployed and nondeployed strategic launchers: intercontinental ballistic missiles (ICBM), submarine launched ballistic missiles (SLBM), and heavy bombers. Additionally, each country can deploy a maximum of 700 ICBM and/or SLBM launchers and heavy bombers, and an upper limit of 1,550 warheads. The treaty also provided for measures to ensure monitoring and verification of each country's deployments, including data updates and exchanges, notifications, and on-site inspections.²

Despite Putin's 2023 announcement of Russia's suspended participation in New START, both states indicated their willingness to continue to observe its numerical limits on deployed and nondeployed launchers and deployed warheads.³ This announcement came at a time when Russia was already in breach of mandatory inspections.⁴

The ability of the United States' "national technical means" to effectively monitor Russian compliance with New START is imperfect at best.⁵ Monitoring the numbers of warheads deployed on strategic-launchers is the most challenging aspect now because the on-site inspections called for in the treaty will no longer take place—unless Russia returns to full participation and compliance.

In response to Russia's suspension of participation in the treaty, the US State Department announced in June 2023 that the United States would no longer provide notifications about the status or location of items accountable under the treaty, would no longer facilitate inspections on American territory, and would cease providing Russia with telemetry information from American ICBM and SLBM launches.⁶

The absence of regular data exchanges and complete monitoring and verification of one another's forces do not pose an immediate danger to the United States or Russia. In the longer term, if soured relations lead to a deadlocked or nonexistent arms control dialogue, both the United States and Russia could lose confidence in the arms control process and resume force building on the basis of their worst fears about what the other side is doing or might do in the future. American officials have indicated a willingness to keep an open door to further discussions on these issues, but these efforts are taking place at a time when the Department of Defense's recently released annual report, *Military and Security Developments Involving the People's Republic of China* (PRC), suggests China may have tripled the size of its nuclear arsenal since

2. Treaty between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms, U.S.-Russian Federation (New START), Apr. 8, 2010, Treaty Document 111-5.

3. Guy Falconbridge, "Russia's Putin Issues New Nuclear Warnings to West over Ukraine," Reuters, February 21, 2023, <https://www.reuters.com/>.

4. Humeyra Pamuk, "US Says Russia Violating New START Nuclear Arms Control Treaty," Reuters, January 31, 2023, <https://www.reuters.com/>.

5. Michael P. Gleason and Luc Reisbeck, *Noninterference with National Technical Means: The Status Quo Will Not Survive* (Washington, DC: Aerospace Corporation, 2020), 1–4.

6. Steven Pifer, "The US and Russia Must Re-Assess Their Strategic Relations in a World without New START," *Bulletin of the Atomic Scientists*, June 13, 2023, <https://thebulletin.org/>.

2020 as it builds to a peer arsenal.⁷ China's actions are certain to change the shape of future arms control.

On June 2, 2023, US national security adviser Jake Sullivan, in a speech to the Arms Control Association, said that the United States was ready to engage with Russia on bilateral arms control talks without preconditions in order to “manage nuclear risks and develop a post-2026 arms control framework.”⁸ Russian reactions to this offer were equivocal. They also depend, to some extent, on Putin's willingness to reengage on nuclear arms control despite continued American and NATO's opposition to Russia's war in Ukraine.⁹

Although the United States and Russia both say they are in compliance with the requirements of New START, there is no guarantee this situation will continue indefinitely. Uncertainty about the durability of New START is based on several factors. First, the war in Ukraine already shows signs of being a protracted struggle that will dampen enthusiasm for further collaboration on security and foreign policy issues. Second, there is significant support among arms control and foreign policy experts for including the PRC in any future strategic nuclear arms control agreement. As mentioned above, the PRC is engaged in building a nuclear force peer to the United States.¹⁰ This would increase American extended deterrence requirements in Asia in addition to those already existing in Europe.

Third, the challenge of deterring nuclear attack involves more than maintaining strategic parity in force-building. The rising significance of the cyber and space domains as related to nuclear deterrence requires further consideration among defense leaders and policy planners. Fourth, technological innovations in offensive strike weapons and antimissile defenses may complicate American and Russian estimates of “how much is enough” for deterrence and crisis stability. A fifth issue is whether American and Russian notions of the role of nuclear weapons in military strategy, especially with regard to escalation, are correctly understood or compatible in the event that deterrence fails.

Five Challenges for Future Arms Control

Russia's War in Ukraine

The first challenge to the issue of future arms control is the protracted nature of Russia's war in Ukraine. With the conclusion of the war difficult to foresee, any of the

7. Office of the Secretary of Defense (OSD), *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China* (Washington, DC: DoD, 2023), VIII.

8. OSD.

9. See Michaela Dodge, “On Arms Control and Why New START's Suspension Does Not Really Matter,” National Institute for Public Policy (NIPP), June 19, 2023, <https://nipp.org/>.

10. See Brad Roberts et al., *China's Emergence as a Second Nuclear Peer: Implications for U.S. Nuclear Deterrence Strategy* (Livermore, CA: US Department of Energy, Lawrence Livermore National Laboratory, 2023), <https://cgsr.llnl.gov/>.

possible outcomes can complicate future Russo-American political relations. The options, broadly speaking, are a decisive victory for Russia, a decisive victory for Ukraine, or a split decision that leaves both sides with some significant payoffs but perhaps less than their maximum objectives.

Any negotiated settlement will involve side payments, trade-offs, and some disgruntlement on the part of governing elites, interest groups, media pundits, and others in Kyiv, Moscow, Washington, and Brussels. For example, Russia might have to settle for the loss of some previously occupied territory in eastern and southern Ukraine. Ukraine might have to accept Russia's foothold on a land bridge to Crimea. International mediation would almost certainly be required, perhaps on the part of the United Nations, the Organization for Security and Co-operation in Europe, and/or other key state actors such as China.

A possible sticking point to a mutually acceptable cease-fire, or to a more durable peace agreement, would be the admission of Ukraine to NATO. Member states in NATO and others are promoting this idea in public discourse, but it is a nonstarter for Putin.¹¹ The admission of Ukraine into NATO could lead to the fall of the Putin regime and to a worse option.¹² Additionally, if Ukrainian armed forces appear on the cusp of retaking Crimea, this is a red line for Russia, and it may see a total deterioration of relations between Moscow and Washington. NATO leaders should not assume that turbulence within the Russian regime works to NATO's advantage.¹³ Peace agreements have to be implemented by stable governments, not by those who are distracted and looking over their shoulders at their possible replacement.

China

A second issue is the participation of Beijing in strategic arms control agreements. China's rising political influence and economic power are now being mated to a growing nuclear arsenal and make its participation necessary. Moreover, Chinese military improvements are not only in the realm of growing force size. China's capabilities for high-end conventional warfare and for nuclear deterrence are also qualitatively improved compared to those of the pre-Xi Jinping era.

The Defense Department's 2023 annual report details expansion in numbers and system capabilities that are shocking when compared to past reports and the expected growth in China's capability.¹⁴ The PRC also plans to challenge the United States in foundational technologies such as artificial intelligence (AI), space offense and defense, cyberwar, and hypersonic weapons. China's growing arsenal of nuclear

11. Robert Pszczel, "The Consequences of Russia's Invasion of Ukraine for International Security—NATO and Beyond," *NATO Review*, July 7, 2022, <https://www.nato.int/>.

12. Jim Heinz, "Putin Is Expected to Seek Reelection in Russia, but Who Would Run If He Doesn't?," AP [Associated Press], November 1, 2023, <https://apnews.com/>.

13. Alexander Motyl, "It's High Time to Prepare for Russia's Collapse," *Foreign Policy*, January 7, 2023, <https://foreignpolicy.com/>.

14. OSD, *Annual Report*.

weapons includes launchers of intercontinental reach as well as those designed for a regional conflict.

Notwithstanding the urgency of bringing the PRC into nuclear arms control discussions with the United States and Russia, there are obstacles to three-way agreements. First, China may resist entering into any negotiations of this type until it has built up its strategic nuclear forces to higher levels.¹⁵ China does not necessarily need to duplicate the nuclear forces of the United States or Russia. It appears the PRC is seeking to field a nuclear arsenal that matches or exceeds the United States with respect to a survivable second-strike capability, a plurality of delivery systems, and the necessary supporting elements for a credible strategic nuclear deterrent, including nuclear warning and command, control, and communications (C3) systems, space-based assets, and cyber capabilities.¹⁶

China will also want to deploy nuclear retaliatory forces that can circumvent any antimissile defenses that the United States might deploy, fearing that otherwise, the credibility of its nuclear deterrent will be compromised.¹⁷

A second concern about PRC participation in nuclear arms control talks is its negative attitude toward transparency in disclosing information about its currently deployed forces and modernization plans.¹⁸ Chinese leadership and military advisers may find the transparency to which the United States and Russia have become accustomed, as a result of participation in Cold War and post-Cold War arms control, antithetical to their concepts of international negotiation and national security. Attaining agreements to detailed on-site inspections, data exchanges, test notifications, and the like, may require the United States and Russia to engage their Chinese military and political counterparts on the PRC's understandings about military strategy and arms competition in a broader sense.

Space and Cyber Domains

A third complication in the way of forward progress in nuclear arms control negotiations between the United States and Russia lies in the growing significance of the space and cyber domains for military strategy and deterrence. The space and cyber domains are no longer the provinces of a few technology enthusiasts or dedicated futurists. Space and cyber assets are critical for the United States, Russia, China, and other states aspiring to major-power status. Space-based reconnaissance and surveillance, early warning, C3, and geolocation are necessary elements for any advancing major military power, with or without nuclear weapons.

15. David C. Logan, "Trilateral Arms Control: A Realistic Assessment of Chinese Participation," Stimson Center, August 9, 2021, <https://www.stimson.org/>.

16. See OSD, *Annual Report*.

17. Timothy Wright, "Is China Gliding toward a FOBS Capability?," IISS [International Institute for Strategic Studies], October 22, 2021, <https://www.iiss.org/>.

18. Walter Lohman and Justin Rhee, eds., *2021 China Transparency Report* (Washington, DC: Heritage Foundation, 2021), 51–59, <https://www.heritage.org/>.

Future military space forces will be challenged to perform the functions of sanctuary, survivability, control, and dominance of the high ground, including decisive space-to-space and space-to-earth force application.¹⁹ At the same time, technology is providing new capabilities for attacks on satellites at various orbits and for defense against the same. The United States, Russia, and China are developing and testing satellites for rendezvous and proximity operations, enabling satellites to approach close enough to other satellites to track, repair, and/or destroy them if necessary.²⁰

Counterspace capabilities are not new, but there are now increasing incentives for the development and use of offensive counterspace capabilities. Multiple countries are developing counterspace capabilities across one or more of the following categories: direct ascent, co-orbital, electronic warfare, directed energy, and space situational awareness.²¹

The United States has tested technologies for close approach and rendezvous in both low Earth orbit and geosynchronous orbit in addition to tracking, targeting, and intercept technologies that could lead to a co-orbital intercept capability.²² The United States does not have an acknowledged, operational direct-ascent antisatellite capability, but American midcourse ballistic missile defense interceptors were demonstrated in an antisatellite role against a satellite in low Earth orbit. The United States also has an operational electronic warfare offensive counterspace system, the Counter Communications System, which is globally deployed to provide uplink jamming against geostationary communications satellites.²³

The United States has also conducted research and development on the use of ground-based high-energy lasers for counterspace and other missions. Currently, it has the most advanced space situational awareness system in the world, including for military applications. Such capabilities include a geographically dispersed network of ground-based radars and telescopes and space-based assets.²⁴ Institutionally, then-President Donald Trump established the US Space Force and reestablished US Space Command in 2019 as part of a more intensive focus on space as a warfighting domain.²⁵

19. Peter Hays, "The Space Force in Context" (presentation, Nonproliferation Policy Education Center, Arlington, VA, May 12, 2023).

20. See Brian Weeden, *US Military and Intelligence Rendezvous and Proximity Operations* (Washington, DC: Secure World Foundation, 2023).

21. Tyler Way, "Counterspace Weapons 101," Aerospace Security, Center for Strategic and International Security (CSIS), June 14, 2022, <https://aerospace.csis.org/>.

22. Brian Weeden and Victoria Samson, eds., *Global Counterspace Capabilities: An Open-Source Assessment* (Washington, DC: Secure World Foundation, April 2023), vii, <https://swfound.org/>.

23. Kyle Mizokami, "US Space Force's First Offensive Weapon Is a Satellite Jammer," *Popular Mechanics*, March 17, 2020, <https://www.popularmechanics.com/>.

24. Hays, "Space Force."

25. Theresa Hitchens, "NORTHCOM's Head Sets Record Straight on Missile Defense Boundaries with SPACECOM," *Breaking Defense*, June 16, 2023, <https://breakingdefense.com/>.

War in space is a possibility, but cyberwar among state and nonstate actors already poses a significant danger to international security.²⁶ Cyberattacks occur as solo excursions or as supplements to kinetic uses of force. Both the public and private sectors are vulnerable to cyberwar, and the possibility of a crippling attack against American infrastructure, including military forces and command-and-control systems, requires constant vigilance and upgrading of information systems.

In the event of a nuclear first strike on the United States, the attack will likely be preceded by cyberattacks against American early warning and nuclear C3 systems (NC3) in order to introduce confusion or paralysis—delaying or forestalling an effective response. Cyberattacks directed at government or private sector targets in the United States and other countries include ransomware, network infiltration, insertion of malware to corrupt digital control systems, and extraction of confidential files for espionage.²⁷

With regard to nuclear infrastructure, cyberattacks against Iran's nuclear program caused the destruction of many centrifuges, and "left of launch" techniques have allegedly been used by the United States in attempts to disable or divert adversary nuclear missile launches. In addition, breaches of internal security like the Edward Snowden affair made available to foreign powers some of the most sensitive cyber weapons used by the National Security Agency. In 2016, the so-called Shadow Brokers posted online tools used by the agency's highly classified Tailored Access Operations unit to break into computer networks in Russia, China, Iran, and elsewhere.²⁸

American capabilities for offensive cyberwar are second to none, but defenses against enemy cyberattack are a larger challenge since American civilian infrastructure contains so many potentially vulnerable targets.²⁹ One example is the electric grid. Another issue with respect to cyberwar is the potential for AI to raise the bar in providing tools for military and strategic deception, including in cyberspace.

Deepfakes can simulate politicians, generals, and others announcing decisions or conducting war games that seem very convincing to large audiences on social media. AI systems already produce encyclopedias, plays, novels, and other creative works that were previously the purview of individual artists and scholars. Future declarations of war by heads of state or announcements of victory by commanding generals are open to simulation and temporarily may convince large audiences of their validity. In the

26. Andrew Futter, *Cyber Threats and Nuclear Weapons: New Questions for Command and Control, Security and Strategy* (London: Royal United Service Institute for Defence and Security Studies [RUSI], 2016); and Erik Gartzke and Jon R. Lindsay, "Thermonuclear Cyberwar," *Journal of Cybersecurity* 3, no. 1 (2017), <https://academic.oup.com/>.

27. Chad Heitzenrater, "Cyber Attacks Reveal Uncomfortable Truths about U.S. Defenses," *Rand Blog*, September 21, 2023, <https://www.rand.org/>; and see also CSIS, "Significant Cyber Incidents since 2006" (Washington, DC: CSIS, 2023), <https://csis-website-prod.s3.amazonaws.com/>.

28. David E. Sanger, *The Perfect Weapon: War, Sabotage and Fear in the Cyber Age* (New York: Crown Publishers, 2018), 227, 268–79.

29. For a detailed look at cyber operations see Chase Cunningham, *Cyber Warfare—Truth, Tactics, and Strategies* (Birmingham, UK: Packt, 2020).

case of nuclear crisis management, misperceptions of an adversary's intentions, along with deceptions by adversary intelligence services, can lead to miscalculated escalation and an outbreak of nuclear war.³⁰

Innovations in Offensive and Defensive Weapons

A fourth set of complications with respect to the viability of New START or other nuclear arms control agreements is continuing innovation in offensive and defensive weapons. For example, the development of hypersonic weapons, including delivery systems for nuclear warheads, raises serious issues for deterrence and defense planners.³¹ In the case of nuclear deterrence, a reliable second-strike capability is a necessary condition for the success of deterrence by credible threat of retaliatory punishment. Hypersonics compress the time available for warning and selection of an appropriate response to an attack.³²

It is conceivable that national leaders might have only a few minutes from the initial launch detection of an enemy first strike to the arrival of warheads at their assigned targets. Under these conditions, leaders fearful of losing their deterrent might be more willing to authorize preemptive attacks instead of waiting for indisputable confirmation that a nuclear war is underway.³³ An arms race in deploying hypersonic weapons could also affect conventional deterrence, since intermediate- and medium-range missiles with hypersonic speeds and maneuverability could inflict massive damage over a wide area within minutes instead of hours or days.

On the other hand, future arms control will have to take into account the improving capability of antimissile and air defenses.³⁴ With respect to ballistic missiles, the Cold War era was marked by a one-sided dominance of offensive systems over defenses. The United States and other countries have already demonstrated improved missile defense technologies against missiles of short, medium, and intermediate ranges. Future missile defense technologies or platforms, including space-based systems, might provide additional leverage against ballistic missile attacks.³⁵ Herein looms the possibility of a race between states in their ability to field hypersonic offensive weapons, or other

30. See Stephen J. Cimbala and Lawrence J. Korb, "Artificial Intelligence: Challenges and Controversies for US National Security," *Bulletin of the Atomic Scientists*, June 9, 2023, <https://thebulletin.org/>.

31. See Stephen J. Cimbala and Adam B. Lowther, "Hypersonic Weapons and Nuclear Deterrence," *Comparative Strategy* 41, no. 3 (April 2022), <https://doi.org/>; and Stephen Reny, "Nuclear-Armed Hypersonic Weapons and Nuclear Deterrence," *Strategic Studies Quarterly* 14, no. 4 (Winter 2020), <https://www.airuniversity.af.edu>.

32. Adam Lowther and Curtis McGiffin, "America Needs a Dead Hand," *War on the Rocks*, August 16, 2019, <https://warontherocks.com/>.

33. R. Harrison Wagner, "Nuclear Deterrence, Counterforce Strategies, and the Incentive to Strike First," *American Political Science Review* 85, no. 3 (1991).

34. Jeremiah Rozman, *Integrated Air and Missile Defense in Multi-Domain Operations* (Washington, DC: Association of the United States Army, 2020), 3–9.

35. See Michaela Dodge, *Missile Defense Reckoning Is Coming: Will the United States Choose to Be Vulnerable to All Long-Range Missiles?* (Fairfax, VA: NIPP, 2020).

weapons designed to confuse or evade defenses, compared to their ability to improve missile defenses.

With respect to nuclear deterrence, missile defenses are always challenged by the fact that even small numbers of nuclear weapons can do historically unprecedented damage to society. Therefore, against the possibility of large-scale nuclear attacks on the homeland, deterrence by denial remains less dependable than deterrence by credible threat of retaliatory punishment.³⁶ On the other hand, defenses that are good enough to make the calculations of prospective first strikers more complicated might appeal to some national leaders and defense planners. Previously discussed left-of-launch techniques for cyber disruption of missile launches might justifiably be considered a form of antimissile defense, although critics might refer to it as a variant of preemption.

American and Russian Nuclear Strategy

A fifth aspect of the uncertain context for future strategic nuclear arms control is the challenge of managing policy-prescriptive doctrine and nuclear force planning for escalation control if deterrence fails.³⁷ This is a thorny subject because it involves two kinds of prospective nuclear use: so-called tactical or nonstrategic nuclear weapons made available for battlefield use, and limited strikes with strategic nuclear weapons that purposely aim at high-value military and/or command-and-control targets but spare cities and other value targets for coercive bargaining and war termination.

Critics scoff at the idea of limited nuclear wars as a type of war that both Russia and China see as possible without expanding to strategic nuclear conflict.³⁸ But, beginning with the administration of John F. Kennedy, every American president since has sought to escape the civilization-ending Single Integrated Operational Plan for something that offers a variety of limited nuclear options for theater or strategic nuclear war.³⁹ During the Cold War years, NATO fielded a variety of nonstrategic nuclear weapons deployed in Western Europe on the assumption that NATO conventional forces were collectively inferior to those of the Soviet Union and its Warsaw Pact allies.

The situation now is the reverse. NATO holds the commanding heights of advanced technology conventional warfare, so Russia maintains many more deployed nonstrategic nuclear weapons than NATO. Estimates of Russian theater nuclear weapons range from 2,000 to 6,000, on more than a dozen delivery platforms, against 100 to

36. Carl Rehberg, "Integrated Air and Missile Defense: Early Lessons from the Russia-Ukraine War," 1945 (website), June 10, 2022, <https://www.19fortyfive.com/>.

37. See Madison Estes, *Prevailing under the Nuclear Shadow: A New Framework for US Escalation Management* (Washington, DC: CNA [Center for Naval Analyses], 2020).

38. Stephen J. Cimbala and Lawrence J. Korb, "Karaganov's Case for Russian Nuclear Preemption: Responsible Strategizing or Dangerous Delusion?" *Bulletin of the Atomic Scientists*, August 21, 2023, <https://thebulletin.org/>.

39. See Fred Kaplan, *The Bomb: Presidents, Generals, and the Secret History of Nuclear War* (New York: Simon and Schuster, 2020).

200 B-61 gravity bombs with a low operational readiness rate.⁴⁰ The question remains whether the first use of a nonstrategic or tactical nuclear weapon would automatically expand into a much wider and more destructive conflict or remain contained below the threshold of general nuclear war. Such a scenario suggests a second question: Once one adversary launches an attack using strategic nuclear weapons against selective military targets, sparing cities, is reciprocal counterforce restraint possible?

Answering either question requires some conjecture about American and Russian approaches to escalation control and management.⁴¹ With respect to lower-yield tactical nuclear weapons, there are clear differences between them and longer-range and more destructive strategic nuclear forces. Therefore, a “firebreak” between the two kinds of weapons is imaginable, but in the exigent circumstances of confusion and alarm surrounding nuclear war, mutual agreement on thresholds for limiting escalation may be difficult to arrange. Even more challenging is the establishment of thresholds and firebreaks with respect to strategic nuclear exchanges.

The rationale for limited strategic options is that they have two aspects: the immediate destruction that they cause and the message that they send about the ability and willingness to up the ante of destruction unless the other side agrees to terms. From the American standpoint, the objective is to influence the opponent through Thomas Schelling’s “manipulation of risk” and the “threat that leaves something to chance.”⁴²

Whether this approach to messaging with (limited) mass destruction is understandable to Russian leaders, for example, is arguable, but probably circumstantial and scenario dependent. Since the beginning of Russia’s war against Ukraine in 2022, Putin has repeatedly made explicit references to the possibility of nuclear first use in the case of unacceptable losses by Russia.⁴³ What remains to be determined is when, or if, that threshold of political or military unacceptability is reached. Yet nuclear weapons can be employed without being detonated. They are not only instruments of war but are also useful for political intimidation and coercion. Russian military thinking recognizes the potential utility of nuclear weapons in this regard. Russia’s nuclear threats during its war against Ukraine are part of a larger matrix that one strategy expert has termed cross-domain coercion:

The current Russian cross-domain coercion campaign is an integrated whole of non-nuclear, informational, and nuclear types of deterrence and compellence. Finally, the campaign contains a holistic informational (cyber) operation,

40. Mark B. Schneider, *How Many Nuclear Weapons Does Russia Have?* (Fairfax, VA: NIPP, 2023), 169–210; and “Nuclear Disarmament NATO,” NTI [Nuclear Threat Initiative], February 6, 2023, <https://www.nti.org/>.

41. See Olga Olikier, *Russia’s Nuclear Doctrine: What We Know, What We Don’t, and What That Means* (Washington, DC: CSIS, 2016); and Arushi Singh, “Russia’s Nuclear Strategy: Change or Continuities,” *Journal of Advanced Military Studies* 14, no. 2 (2023).

42. Thomas C. Schelling, *Arms and Influence* (New Haven, CT: Yale University Press, 1967).

43. David Sanger and James McKinley, “Biden Warned of a Nuclear Armageddon: How Likely Is a Nuclear Conflict with Russia?,” *New York Times*, October 13, 2022, <https://www.nytimes.com/>.

waged simultaneously on the digital-technological and on the cognitive-psychological fronts, which skillfully merges military and non-military capabilities across nuclear, conventional, and sub-conventional domains.⁴⁴

It follows that cross-domain coercion applies to political and military activities prior to war, in the initial period of war, and during escalation management and/or escalation dominance. With respect to strategic deterrence, this perspective was articulated in Russia's 2015 national security strategy, which states that interrelated "political, military, military-technical, diplomatic, economic, informational, and other measures" are being developed and implemented "in order to ensure strategic deterrence and the prevention of armed conflicts."⁴⁵

If deterrence fails, Russia has not ruled out the possibility of a limited first use of nuclear weapons in order to deter expansion of the war by the opponent. There is considerable discussion in the United States of the prospect that Russia might "escalate to de-escalate" a conventional war by means of nuclear first use, but this prospect must be put into a broader context:

But while nuclear use in a first-strike mode to retrieve a losing conventional war and force NATO to de-escalate may be part of the strategy (escalate to de-escalate), that arguably is merely a part of a much broader nuclear strategy that relies heavily on the psychological and intimidating or informational components of nuclear weapons. In other words, we see a broader nuclear strategy that aims to use these weapons to control the entire process of escalation throughout the crisis from start to finish. If the crisis becomes kinetic, escalating to de-escalate may well become an operative possibility.⁴⁶

Between Russia's war on Ukraine and war more generally, the political objectives for which states fight are related to their willingness to escalate or de-escalate the intensity of fighting and the attendant costs therein. For Russia, its war on Ukraine may be perceived as existential instead of merely opportunistic.⁴⁷ Putin has repeatedly claimed that the war in Ukraine is about the survival of a uniquely Russian civilization and culture that must either extend its influence abroad or wither on the vine. From this perspective, a Russia without de facto or de jure control over Ukraine is no longer an empire, and a Russia that is not an empire is not the destined great power that its history has mandated.

44. Dmitri Adamsky, *Cross-Domain Coercion: The Current Russian Art of Strategy* (Paris: Institut Français des Relations Internationales, 2015), cited in Stephen Blank, "Nuclear Weapons in Russia's War against Ukraine," *Naval War College Review* 75, no. 4 (Autumn 2022): 58.

45. Timothy L. Thomas, *Russia: Military Strategy – Impacting 21st Century Reform and Geopolitics* (Fort Leavenworth, KS: Foreign Military Studies Office, 2015), 112.

46. Blank, "Nuclear Weapons," 61.

47. Yulia Talmazan, "From Buildup to Battle: Why Putin Stoked a Ukraine Crisis—Then Launched an Invasion," NBC News, February 25, 2022, <https://www.nbcnews.com/>; and Isabel Van Brugen, "Putin's True Motive for Ukraine Invasion Revealed in Report," *Newsweek*, April 26, 2023, <https://www.newsweek.com/>.

Along with this, in 2022 the term *Anglosaksy* (Anglo-Saxons) appeared frequently in Kremlin usage as a derogatory reference to duplicitous Americans and their European allies.⁴⁸ It predates the Putin regime, reverting to the latter 1940s and early 1950s as a reference to the Soviet Union's most important enemies who are assumed to be plotting the destruction of the regime in Moscow.⁴⁹

If ambitious political objectives in Moscow are combined with a military-strategic net assessment that a prolonged war of attrition in Ukraine favors Russia against its opponents, the likelihood going forward is a tit-for-tat expansion of conventional war fighting with a background of nuclear coercion du jour. Despite some assessments that the Russian armed forces have underperformed in Ukraine relative to expectations, from a historical perspective Russian military thinking has evolved quite substantially.⁵⁰

In a controversial essay published in June 2023, one Russian academician addressed the issue of escalation in the war in Ukraine, arguing that Russian nuclear preemption is a necessary means for reawakening NATO fears of nuclear deterrence in order to prevent an otherwise inevitable escalation to global thermonuclear war:

We will have to make nuclear deterrence a convincing argument again by lowering the threshold for the use of nuclear weapons set unacceptably high, and by rapidly but prudently moving up the deterrence-escalation ladder. . . . The enemy must know that we are ready to deliver a preemptive strike in retaliation for all of its current and past acts of aggression in order to prevent a slide into global thermonuclear war.⁵¹

Numerous rejoinders to this appeared promptly, including by Russian nuclear policy experts.⁵² Two aspects of this back-and-forth on nuclear preemption by Russians are especially interesting. First, the essay explicitly and implicitly draws upon Western notions of escalation ladders and escalation control that were controversial during the Cold War and were regarded by then Soviet political leaders and military commentators as misguided military diletantism. Second, it is possible the author is engaged in disinformation prompted by Russian government sources that would prefer this messaging to come from a purportedly objective academic source instead of the Kremlin. If so, it corroborates the arguments, cited above, which argue nuclear weapons

48. Stefano Caprio, "Showdown with the 'Anglosaksy,'" PIME Asia News, May 21, 2022, <https://www.asianews.it/>.

49. Andrei Kolesnikov, "The Plot against Russia: How Putin Revived Stalinist Anti-Americanism to Justify a Botched War," *Foreign Affairs*, May 25, 2023, <https://www.foreignaffairs.com/>.

50. See Randy Noorman, "The Russian Way of War in Ukraine: A Military Approach Nine Decades in the Making," Modern War Institute at West Point, June 15, 2023, <https://mwi.usma.edu/>.

51. Sergei A. Karaganov, "A Difficult but Necessary Decision," *Russia in Global Affairs*, June 13, 2023, <https://eng.globalaffairs.ru/>.

52. See Dmitri Trenin, "The Ukrainian Conflict and Nuclear Weapons," *Russia in Global Affairs*, June 20, 2023, <https://eng.globalaffairs.ru/>; and Ivan N. Timofeev, "A Preemptive Nuclear Strike? No!," *Russia in Global Affairs*, June 20, 2023, <https://eng.globalaffairs.ru/>.

are among the instruments in Russia's tool kit of cross-domain coercion and are best used in that role—compared to the operational uncertainties involved in nuclear first use.

New START Viability

The previous section discussed some of the obstacles to successful Russo-American strategic nuclear arms control in its future context. An immediate issue is whether New START provides a platform for interim strategic stability in the near term and/or a launching pad for more ambitious agreements in the longer term, should political relations between Washington and Moscow improve.

To help answer these questions, this article examines the current and prospective near-term strategic nuclear balance between the United States and Russia and projects alternative force structures for each state. This examination takes place in two phases. In the first phase, the model develops alternative force structures for each state and assigns appropriate numbers of weapons to each state's deployed strategic launchers. In each case, New START limitations on the numbers of accountable weapons and launchers are observed.

It is assumed that the benchmark force structure for both the United States and for Russia will deploy a mix of ICBMs, SLBMs, and heavy bombers. Yet for the sake of comparison and analysis, alternative forces for each state are also projected. For the United States, in addition to the traditional triad of strategic nuclear forces, the following alternative force structures are included: a dyad of ballistic missile submarines (SSBNs) and heavy bombers without ICBMs, a dyad of ICBMs and SLBMs without bombers, and a force composed entirely of ballistic missile submarines and SLBMs. For Russia, in addition to the traditional triad, the included alternative force structures are a dyad of ICBMs and SLBMs without heavy bombers, a dyad of ICBMs and heavy bombers without SLBMs, and a force composed entirely of ICBMs.

In the second phase, the analytical model estimates the numbers of surviving and retaliating warheads for each state's forces under each of the following conditions of alertness and launch protocols: (1) generated alert, launch on warning (maximum retaliation); (2) generated alert, riding out the attack, and then retaliating (intermediate retaliation); (3) day-to-day alert, launch on warning (intermediate retaliation); and (4) day-to-day alert, riding out the attack, and retaliating (assured or minimum retaliation).⁵³ The analysis makes no assumptions about the combinations of alert status and launch protocols that may exist in any particular situation; that is obviously scenario dependent. Nor is it assumed that American or Russian leaders will necessarily have accurate information or perceptions about the status of forces on the other side.

The results of these simulations point to several preliminary conclusions. First, New START-level numbers of operationally deployed strategic nuclear warheads and

53. Grateful acknowledgment is made to Dr. James Scouras for use of his Arriving Weapons Sensitivity Model, as adapted for this project.

launchers should provide adequate numbers of second-strike surviving and retaliating warheads under any conditions of alertness and launch protocols. Admittedly there are variations across these retaliatory options that might be important to military planners and policymakers, depending upon their assumptions about nuclear employment policy. The more ambitious the list of enemy targets assigned for prompt or delayed destruction by each side, the more demanding the requirements for surviving and retaliating weapons. It may turn out that, for example, the number of weapons available under the scenario of day-to-day alert and riding out the attack before retaliating are insufficient to provide for flexible targeting or for escalation control.

It is worth noting that the analysis presented here is premised on Russia maintaining a strategic nuclear arsenal within the New START limits. Russia's suspension of New START, which equates to withdrawal from the treaty, may mean Russia has already begun the process of uploading additional warheads on existing delivery vehicles or fielding new systems.⁵⁴ Russia certainly has the capacity to rapidly increase the size of their arsenal.

More problematical is the survivability and endurance of the respective NC3 systems for each state following a nuclear attack.⁵⁵ This system of systems has two parts: technology and people. The technology is expected to perform pre-attack and continue performing, albeit in a degraded form, postattack. The people are expected to persevere regardless of destruction already experienced by their country. These are optimistic assumptions.

Additionally, there are societal consequences of nuclear war. The detonation of even tens of weapons on American, European, or Russian soil will create widespread societal distress. What remains of the national command authority in the United States or Russia may find itself under siege for having committed the worst blunder possible. Fortunately, there is a complete lack of experience with such an event, making any predictions highly speculative.

The point is that various postattack scenarios are imaginable. Once deterrence fails, it is conceivable, but not inevitable, that control over forces is maintained sufficient to limit escalation and move toward conflict termination.⁵⁶ For that to happen, leaders in the United States and Russia need secure and reliable postattack communications and a shared desire to spare their societies further misery. Cooler heads must prevail over desire for revenge. It can happen, but history is not reassuring. The nature of warfare, according to Clausewitz, is to escalate and expand, not to de-escalate.⁵⁷

54. Adam Lowther and Derek Williams, "Why America Has a Launch on Attack Option," *War on the Rocks*, July 10, 2023, <https://warontherocks.com/>.

55. Bruce G. Blair, "Loose Cannons: The President and US Nuclear Posture," *Bulletin of the Atomic Scientists* 76, no. 1 (2020), <https://doi.org/>.

56. See Matthew R. Costlow, *Restraints at the Nuclear Brink: Factors in Keeping War Limited* (Fairfax, VA: NIPP, 2023).

57. See Stephen J. Cimbala, *Clausewitz and Escalation: Classical Perspective on Nuclear Strategy* (New York: Routledge, 1989).

Conclusion

Russo-American nuclear arms control is on life support and fading fast. If reports coming out of the November 2023 arms control meetings between Chinese and American envoys is accurate, any arms control agreement that includes China is dead on arrival.⁵⁸ Optimistically, New START redux provides a starting point for renewed efforts to limit the growth of strategic nuclear arsenals and to provide for deterrence and arms race stability between the United States and Russia. It does little, however, for the problem of incorporating China into the arms control framework.

Future negotiations should use New START as a starting baseline but not necessarily as a most preferred destination. A post-New START arms control regime will have to navigate the challenges posed by an ongoing war in Ukraine; the need to bring China into talks; the rising significance of the space and cyber domains for warfare and deterrence; new and prospective technologies in offensive and defensive weapons; and comparative concepts of escalation and de-escalation held by the United States, Russia, and China. These are large challenges and a demanding context within which to plan for American nuclear modernization and future deterrence stability. **Æ**

58. Jonathan Landay and Arshad Mohammed, "US Says China Reveals Little in Arms Control Talks," *US News & World Report*, November 7, 2023, <https://www.usnews.com/>.

AIRPOWER

A Game Changer in an India-China Limited Conflict

ARJUN SUBRAMANIAM

A unique feature of the six-decades-long India-China adversarial relationship is the absence of the use of offensive airpower in both conflict and short-of-war scenarios that have unfolded across the Line of Actual Control. The exponential growth of the People's Liberation Army Air Force in recent years and India's increasingly robust military posture vis-à-vis Beijing calls for an appraisal of how airpower could be a game changer in any future conflict, if the Indian Air Force's offensive potential is correctly leveraged. Yet, systemic aircraft shortages in the Indian Air Force and the slow pace of modernization within, India's armed forces threaten an effective employment of offensive airpower and an overall robust military posture.

India-China stand-offs have always been complicated. For decades they have followed a predictable pattern of limited escalation, posturing, rhetoric, and finally, de-escalation. Lately, encounters across multiple points of stress in Eastern Ladakh have been more complex and volatile, beginning with the bloody face-off between the Indian Army and the People's Liberation Army (PLA) in the Galwan Valley on June 15, 2020.

The complexity is highlighted in a 2020 Harvard Kennedy School report on the India-China military balance written a few months before the clashes.¹ The report argues, "India has key under-appreciated conventional advantages that reduce its vulnerabilities to Chinese threat and attacks." It also contends that "Indian strategists have not focused on this opportunity, in part because they draw pessimistic conclusions regarding China."²

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1. Frank O'Donnell and Alexander K. Bollfrass, *The Strategic Postures of China and India: A Visual Guide* (Cambridge, MA: Belfer Center for Science and International Affairs, Harvard Kennedy School, 2020), <https://www.belfercenter.org/>.

2. O'Donnell and Bollfrass, 2.

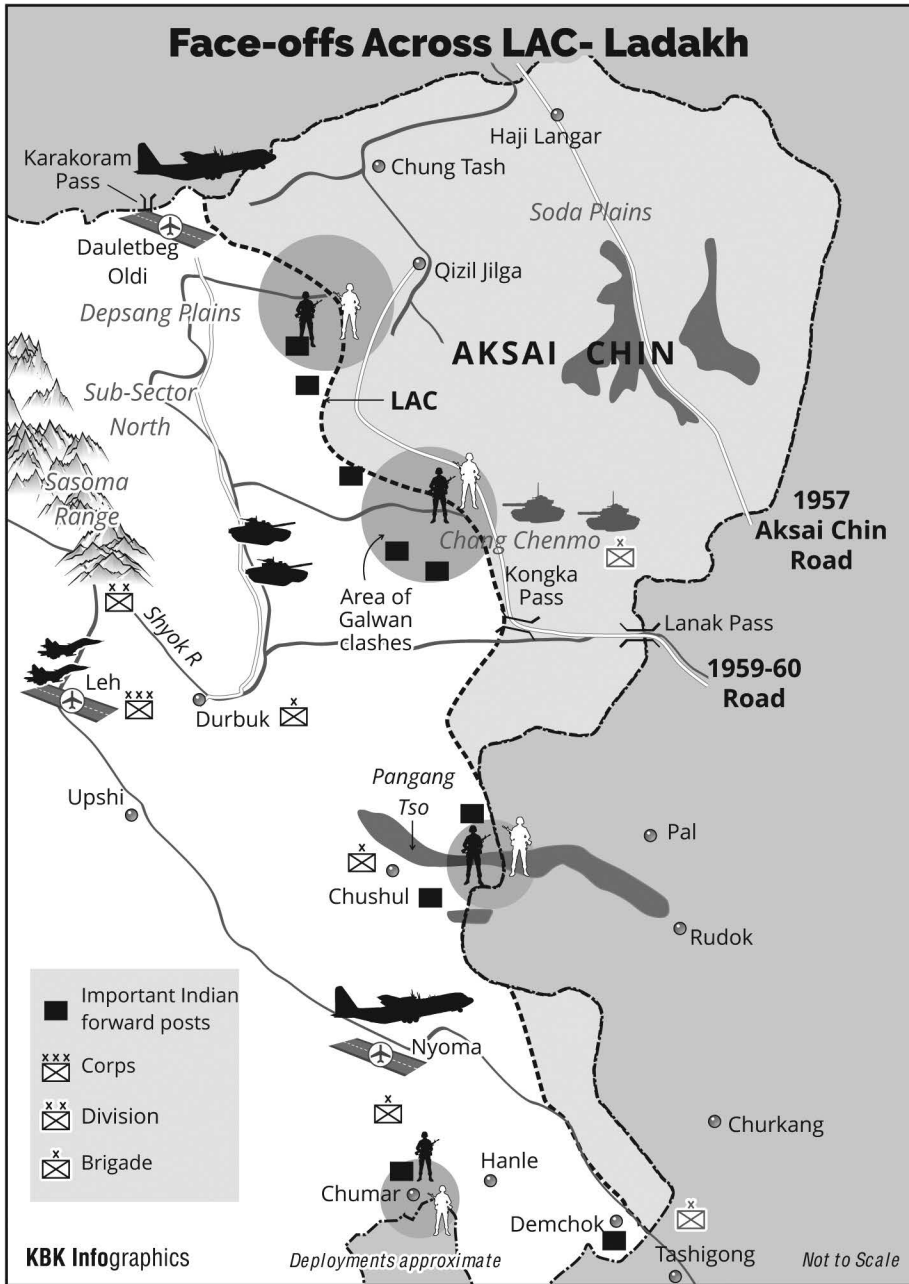


Figure 1. Map showing key areas of the contest between India and China along the Line of Actual Control in Eastern Ladakh

Such diffidence with regard to China has been a key feature of India's strategic DNA since its independence from colonial rule in 1947. Yet there is a growing realization within assertive strategic circles in India that the military must build a position of relative strength in some areas to be able to sustain a multisectoral and multidomain conflict with the country's more powerful northern neighbor. Skeptical conclusions of the growing military asymmetry between China and India, while not ill-founded, could be attributed to a land-force-centric mindset. This perspective seemingly reflects the belief that a positional and defensive attrition-based operational strategy in conditions of near parity will be at the heart of any likely limited conflict across the 3,500-kilometer Line of Actual Control (LAC) separating sovereign Indian territory from Chinese-controlled territory (fig. 1).

Though the Indo-Pacific has emerged in recent years as a region of great power rivalry and the most likely battlespace in any future US-China conflict, there is a perception in both India and China that while the Indian Ocean Region (IOR) would remain a maritime region of intense geopolitical and geoeconomic contest between the two nations, such a contest may not morph into a military flare-up in the foreseeable future. Consequently, the employment of airpower across missions and roles has remained of peripheral interest to security planners—that is, until recently.

The Galwan Crisis has partly changed this narrative with kinetic and nonkinetic airpower options emerging as potential game changers in any future limited conflict along the LAC. The growing debate in India within naval and air force circles over the trajectory of maritime air operations in the IOR and ownership of assets, roles, and missions may have come at the right time as India assesses its military options—other than the traditional land-centric ones—against China.³

The fast-tracking of the indigenously built Tejas light combat aircraft (LCA) Mk1 single-engine fighters and the purchase of 36 French Rafale multirole fighter jets and 12 additional Sukhoi Su-30MKI jets from Hindustan Aeronautics signal a possible realization that airpower could emerge as a key element of warfighting in any future India-China conflict. Yet the stalling of the additional purchase of 22 MiG-29s from Russia and procrastination over the finalization of the 114 multirole fighter aircraft (MRFA) could be a dampener in the short and medium term.⁴ This article assesses India's airpower options in a multidomain and limited military conflict with China in the future.

Lessons from Operation Falcon

Between 1986 and 1987, Indian Army Chief General Krishnaswamy Sundarji, 4 Corps Commander Lieutenant General N. S. Narahari, and 5 Division Commander

3. Arjun Subramaniam, "Pushing Boundaries: Can the Indian Military Transform?," in *Grasping Greatness: Making India a Leading Power*, ed. Ashley J. Tellis, Bibek Debroy, and C. Raja Mohan (New Delhi, India: Penguin, 2022), 558–61.

4. Manu Pubby, "IAF to Urgently Procure 21 Mig 29s and 12 Su 30s," *Economic Times*, last updated June 19, 2020, <https://economictimes.indiatimes.com/>.

Major General (later Lieutenant General) J. M. Singh, with support from Air Chief Marshal Denis Lafontaine, ushered in a refreshingly new joint operational strategy during Operation Falcon, the year-long stand-off with China's forces in the Sumdorong Chu Valley, north of Tawang in India's northeastern state, Arunachal Pradesh.

Before the disengagement process began in mid-1987, the extensive employment of airpower in all its dimensions to support both defensive and offensive operations on the Tibetan Plateau was discussed during a table-top exercise—Exercise Chequer Board. The exercise was initiated in the Indian Army's Eastern Command and expanded to encompass war colleges and other formations lined up across the LAC. The key takeaways included an emphasis on exploiting airpower to secure tactical gains that could be leveraged during subsequent diplomatic/political negotiations. During this time, Singh was emphatic that the key to tackling the Chinese in Tibet even in those days was airpower; this remains so now.

With a clear perspective of airpower's potential, Singh stated,

We must have the capability to gain and maintain a favourable air situation for limited periods of time, and carry out interdiction to back shallow multi-pronged thrusts across road-less terrain to outflank the Chinese build-up that will take place on the existing road and rail networks.⁵

This is a risky strategy no doubt; he emphasized the need to shape such an environment using helicopters for inserting special forces and moving infantry, guns, and logistics supported by offensive airpower to interdict rail and road links in Tibet. There were no fancy pronouncements of attacking targets in depth or in the Chinese hinterland. It was a plain vanilla limited air-land battle concept tailored for the flat terrain of the Tibetan Autonomous Region (TAR).

Oddly, the plan was not embraced and further developed in the following decades even after Defence Minister George Fernandes unambiguously stated China was India's principal adversary.⁶ An unwillingness to leverage the growing capability of airpower in mountainous terrain and explore its escalatory limits in the India-Pakistan and India-China context led to its suboptimal use during the Kargil Conflict of 1999.⁷ Despite the significant capability accretion in the Indian Air Force (IAF) and the progressive improvement in joint operations in the opening decade of the current century, there continued to be diffidence in India over the use of airpower in limited conflict scenarios across the LAC.

The Balakot strikes of February 2019 against a Jaish-e-Mohamed camp in Pakistan demonstrated a willingness of the Modi Government to explore the impact of preventive

5. Personal interviews and email correspondence with retired Lieutenant General J. M. Singh, through July 2019. See Arjun Subramaniam, *A Military History of India since 1972: Full Spectrum Operations and the Changing Contours of Modern Conflict* (Lawrence: University Press of Kansas, 2021), 130–45.

6. John Burns, "India's New Defense Chief Sees Chinese Military Threat," *New York Times*, May 5, 1988, <https://www.nytimes.com/>.

7. See Benjamin S. Lambeth, *Airpower at 18,000': The Indian Air Force in the Kargil War* (Washington, DC: Carnegie Endowment for International Peace, 2012), <https://carnegieendowment.org/>.

and coercive offensive airpower against a significantly weaker adversary in a less-than-war situation.⁸ While it would be unfair to superimpose a similar template across the Line of Actual Control in contemporary times, the Galwan Crisis and the subsequent performance and presence of the IAF over Eastern Ladakh have spurred greater debate on optimal ways of leveraging Indian airpower on/across the LAC should situations escalate to beyond mere face-offs.⁹

The ambitiously assertive air-land plans curated by Sundarji are unlikely to see the light of day. In its place, India may be compelled to present a robust and proactive defensive posture with offensive airpower as the principal element for causing attrition to the PLA's combat potential and limiting conflict escalation. The debatable point, however, remains whether India's strategic establishment has the will to generate the capabilities needed to do so.

PLAAF Forges Ahead

Over the past decade, the People's Liberation Army Air Force (PLAAF) has moved quickly to counter the growing qualitative advantage of the IAF's fighter force. China has established a dense, multilayered, and lethal air defense network of radars and the latest surface-to-air missiles (SAMs) that include the S-300, S-400, and the HQ-9.¹⁰ Though the PLAAF increased the frequency of the visits by fighter squadrons equipped with fourth-generation aircraft to airfields in the Tibetan Autonomous Region after 2010, it rightly concentrated on building on its proven strength of ground-based air defense networks and network-centric operations, rather than attempting yet to match the IAF with airborne fighter platforms.¹¹

The Harvard study mentioned above engages in a bit of "India overreach" by suggesting the IAF's current inventory of fourth-generation fighters (Mirage 2000s, MiG-29UPG, and Su-30MKI) is more than a match for the PLAAF Su-30s, J-10s, and J-11s.¹² Qualitatively, maybe, but in terms of numbers, there is a possible mismatch between what the researchers suggest about the availability of fourth-generation fighters with the PLAAF, and what other studies have revealed. The analysis proposes the PLAAF can bring to bear only 101 such platforms in the theater against the estimated Indian strength of 122.

8. Arjun Subramaniam, "The Indian Air Force, Sub-Conventional Operations and Balakot: A Practitioner's Perspective," *ORF* [Observer Research Foundation] *Issue Brief*, no. 294 (May 2019), <https://www.orfonline.org/>.

9. Krishan Kaushik, "Was Prepared for Strike after Galwan, China Can't Get the Better of Us: IAF Chief," *Indian Express*, October 6, 2020, <https://indianexpress.com/>.

10. Daniel Urchik, "A 2016 Assessment of the Growth of PLAAF Capabilities," *Small Wars Journal*, July 26, 2016, <https://smallwarsjournal.com/>; and see Arjun Subramaniam, "Closing the Gap: A Doctrinal & Capability Appraisal of the IAF and PLAAF," in *Defence Primer 2018: An Indian Military in Transformation*, eds. Pushan Das and Harsh V. Pant (New Delhi: ORF, 2018), <https://www.orfonline.org/>.

11. Rajeswari Pillai Rajagopalan and Pulkit Mohan, "PLA Joint Exercises in Tibet: Implications for India," *ORF Occasional Paper*, no. 238 (February 2020), <https://www.orfonline.org/>.

12. O'Donnell and Bollfrass, *Strategic Postures*.

Yet, the operational induction of the PLAAF's J-20 and nuclear-capable H-6 bombers on the Tibetan Plateau soon after the Galwan Crisis reveals a growing confidence within the PLAAF of matching the IAF in the skies.¹³ In April 2014, then-PLAAF Chief and Central Military Commission member Ma Xiaotian argued, "As missions evolve and change, the Air Force's ability to fight and win wars will be continuously improved to ensure the effective fulfillment of its missions."¹⁴

One defense analyst highlights that as of 2017, the PLAAF had 736 such "strong 4th Generation platforms" and was increasing numbers at an average rate of 70 aircraft per year with constant upgrades in technology, electronic warfare, and weapons systems.¹⁵ By those numbers, the PLAAF's current inventory of fourth-generation platforms could have crossed 850 or about 40 squadrons. One can guesstimate that this figure will settle down to approximately 50 squadrons worth of fourth-generation fighters by 2025.¹⁶

If one factors in the possibility of the operational induction of the early fifth-generation J-20 in large numbers over the next decade—200 or 10 squadrons as a conservative figure—despite the problems it is facing with engine design, it is quite clear the qualitative advantage enjoyed by the IAF thanks to the Su-30MKI and the small numbers of Rafales will quickly erode. The LCA Mk1 and 1A, which are likely to equip 6 to 7 squadrons over the next 8 to 10 years, can be considered at best a modest fourth-generation platform.

So here is a rough matchup come 2030.¹⁷ As part of its offensive inventory, the PLAAF could have up to 50 squadrons of strong fourth-generation fighters; around 10 squadrons of modest fifth-generation J-20-class aircraft, early variants of the J-31 maritime version of the J-20 equipped with PL-15 beyond visual range missiles (140- to 150-kilometer range); and 5 to 6 squadrons of the H-6 long-range bombers with significant stand-off capability (weapons with ranges of more than 250 to 300 kilometers).

In a hot-war scenario, the anticipated airfield receiving capacity on the TAR will double from the existing six dual-use airfields, given the speed at which Chinese infrastructure is being built on the Tibetan Plateau. An overview of the current status of dual-use and satellite airfields in TAR suggests that of the 17 airfields ringing the Plateau, 7 are in Xinjiang, Qinghai, and Yushu provinces, some distance away from the LAC. That leaves 10 airfields that stretch across the Karakoram and Himalayan ranges that could come into play during a conflict. Of these, only two are situated below

13. Smriti Chaudhary, "After Spotting J-20 Jets, Nuclear-Capable H-6 Bombers, India Deeply Monitoring Chinese Air Bases," *Eurasian Times*, August 21, 2020, <https://www.eurasiantimes.com/>.

14. Ma Xiaotian, "Efforts to Improve the Air Force's Ability to Fight and Win Wars," *People's Liberation Army Daily*, April 2, 2014, <http://www.81.cn/>.

15. Urchik, "2016 Assessment."

16. See "China - Air Force," Scramble: Dutch Aviation Society (website), n.d., accessed November 14, 2023, <https://scramble.nl/>.

17. See "India - Air Force," Scramble, n.d., accessed November 14, 2023, <https://scramble.nl/>.

10,000 feet, which seriously impacts the operational viability of fighter operations with adequate weapon loads.¹⁸

The rapid construction of heliports close to the LAC suggests the PLA is scaling up its helicopter operations, though it still does not match up to the Indian Air Force's experience and capability to conduct a wide range of helicopter operations at high altitudes.¹⁹ To intimate the PLAAF would allocate and train barely 15 percent of its fourth- and fifth-generation fighters for operations in an India scenario as per the Harvard report is a bit far-fetched. Based on multiple studies, one must assume that currently there is an even balance, which is likely to gradually shift in favor of the PLAAF should the IAF falter in its various acquisition and infrastructure developmental plans.

In the past, India hardly figured overtly in the PLA's military calculus. Yet according to a November 2023 report, "China perceives significant security threats along its expansive disputed border with India."²⁰ There has also been an increase in traction on Chinese military blogging sites that track the capability development in the IAF.

One such thread repeatedly refers to the reasons for the growing India-US military relationship and argues "in a head-to-head confrontation with the Western Theater Command, the Indian Armed Forces know, they are in danger and have little chance of success, and therefore, want to learn from the US military, a different way of fighting."²¹ Referring to the IAF's recent deployments in Eastern Ladakh, the blog highlights that the "Indian Air Force has recently transferred EMB-145 early warning aircraft near the plateau to operate closer to the China and India boundary. This is the first time that India has deployed this type of aircraft in the direction of plateaus."

Indian Air Force Capabilities

Even with the best-case situation in the acquisition and fielding of pending platforms, the IAF will stagger to 32 to 34 fighter squadrons at best by 2030. Pessimistic assessments point at even lower numbers.²² Yet the reasonably good news for the Indian Air Force is that the rapidly growing asymmetry in total numbers may not translate into a proportional qualitative ability of the PLAAF to create a significant force advantage in the Tibetan Autonomous Region. With several forward-tier IAF airfields already capable of sustaining intense fighter operations, the IAF could well hold its own in an aerial battle over the region.

18. Venu Gopal Narayanan, "Chinese Airfields in and around Tibet: A Geographical Overview," *Swarajya*, July 23, 2021, <https://swarajyamag.com/>.

19. China Power Team, "How is China Expanding Its Infrastructure to Project Power along Its Western Borders?," China Power, Center for Strategic International Studies, updated November 9, 2023, <https://chinapower.csis.org/>.

20. China Power Team.

21. 开错了季节解说 Kāi cuò le jì jié jiě shuō, Guangdong-based military blogger, 2022.

22. Snehes Alex Phillip, "Even after Rafale and Other Inductions, IAF Will Only Have Half of 42 Squadrons by 2042," *ThePrint*, January 28, 2019, <https://theprint.in/>.

Still, the combination of the dense PLAAF air defense cover, superior but untested electronic warfare and space-based intelligence, and the availability of large numbers of the J-20 fifth-generation aircraft and H-6 bombers will pare the current qualitative advantage of the IAF. This could be mitigated, however, if the 114 MRFA aircraft along with their electronic warfare and weapons suite are fielded quickly. Thus, a combination of Su-30MKIs, upgraded Mirage 2000s, and MiG-29s, a limited number of Rafales, the MRFA with advanced electronic warfare systems, and good stand-off weapons capability will ensure the IAF's qualitative advantage over the PLAAF remains despite the disparity in overall numbers.²³

It is too early to assess whether the LCA Mk1A, likely fitted with advanced active electronically scanned array radars and the Astra beyond-visual-range air-to-air missile—both of which are in an advanced stage of development—will be able to penetrate the air defense network on the Tibetan Plateau for deep-ingress missions. Yet, the platform will certainly add punch to local air defense over Ladakh and limited countersurface force operations and battlefield air interdiction around the LAC in favorable conditions.

PLAAF Capabilities

The IAF stands at a critical crossroads today vis-à-vis the PLAAF. It has current advantages that include a qualitative advantage in aerial platforms across categories and viability of operational bases with hardened aircraft shelters that could, according to the Harvard study, withstand the much-feared PLA rocket force barrage of surface-to-surface missiles with suspect circular errors of probability. Yet the pace at which such shelters are being constructed needs to be hastened to allow the IAF to spring back and launch offensive platforms after a PLA first strike. Reaffirming the threat posed to forward IAF airbases, one observer suggests the challenges ahead for India:

The People's Liberation Army Rocket Force's (PLARF) PHL-191 long-range rocket launchers have a range of up to 180 kilometers. This, coupled with the geographical advantage of the Sino-Indian border area, [suggest that] both northern India and Kashmir will therefore face substantial threats from the PLA. Therefore . . . India continues to learn from the US military experience but, to mitigate PLAs missile threats, [it] won't be easy.²⁴

Strategic planners in India must recognize that offensive airpower offers the only instrument that allows the application of asymmetric combat power, one that can inflict costly attrition on both deployed and follow-on fielded forces.

By most Western assessments, the Indian Air Force is more battle-proficient and flexible than its adversary, given its combat experience and frequent engagement with

23. See Jayantchakravarti, "Here's How the Indian Air Force May Look Like in 2030," My Voice - OpIndia, September 5, 2019, <https://myvoice.opindia.com/>.

24. 开错了季节解说 Kāi cuò le jì jié jiěshuō.

Western partner air forces since the 1990s including the United States Air Force, French Air Force, and Royal Air Force.²⁵ But that advantage, too, is fast eroding. The PLAAF is adopting the latest technologies, offensive platforms, and combat enablers, such as airborne warning and control systems (AWACS) and refuelers, and is looking outward for air combat expertise. Frequent engagements with the Pakistan and Turkish air forces which operate aircraft such as the F-16, and the hiring of mercenary combat instructors from the UK and Germany should significantly enhance the PLAAF's air combat capability.²⁶

To improve its capability, the PLAAF has embarked on "cultivating air force commanders for the intelligentized air battle, upgrading its combat equipment, flight training concept and talent cultivation mode at a faster pace amid the trend of science and technology innovation."²⁷ Highlighting this aspect at an international military training conference in September 2021, Hao Jingwen, head of the training bureau under the PLAAF staff headquarters, put forward new requirements for improving pilot efficiency by upgrading simulated training.

Reaffirming the strong collaborative relationship between the Pakistan Air Force (PAF) and the PLAAF at the same conference, PAF Air Chief Marshal Zaheer Ahmad Babar Sidhu said, "In the face of current global and security situation, the ever-changing dynamic warfare and new technologies, China and Pakistan, together with their air forces, have maintained close cooperation and supported each other in every operation." The PLAAF-IAF gap has closed considerably, and with training in the PLAAF being ramped up with collaborative initiatives with allies such as Pakistan, it will be formidable to reckon with in three to five years. And as a further indication of the seriousness with which the PLAAF is working to close the capability gap with Western air forces, India included, the PLAAF recently conducted an exercise with the United Arab Emirates air force in Xinjiang, with the latter fielding both the F-16 and the Mirage 2000.²⁸

The PLAAF has a strong and dense ground-based air defense system that the IAF will have to contend with during its offensive operations across the Line of Actual Control. Except for the terrain in Eastern Ladakh that could support a PLAAF-like air defense network on the Indian side with systems like the S-400, India will have a difficult time extending air defense across the LAC due to adverse terrain considerations.

Therefore, a purely defensive aerial posture and an attempt to clone China's air defense capability will come with severe constraints. Irrespective of the surface posture, the IAF must build offensive capability in both air-air and air-ground capability supported

25. O'Donnell and Bollfrass, *Strategic Postures*.

26. Mark Landler, "China Recruiting Former R.A.F. Pilots to Train Its Army Pilots, U.K. Says," *New York Times*, October 17, 2022, <https://www.nytimes.com/>; and see Franz-Stefan Gady, "Did German Pilots Just Pass NATO's Tactics to China?," *Foreign Policy*, June 7, 2023, <https://foreignpolicy.com/>.

27. Liu Jimei and Gao Yujiao, "PLAAF Cultivates Pilots for Intelligentized Air Battle," China Military Online, September 28, 2021, <http://eng.chinamil.com.cn/>.

28. Ashish Dangwal, "1st Time! PLAAF Jets, F-16s & Mirage-2000s Could Roar Together as China, UAE to Hold Aerial Drills in Xinjiang," *Eurasian Times*, August 1, 2023, <https://www.eurasiantimes.com/>.

by the latest generation of surveillance platforms even if it is to support a defensive strategy that seeks merely to deny the PLA the ability to gradually shift the LAC toward India.

Maritime Considerations

As alluded to earlier, several operational assessments in India suggest that a limited high-altitude conflict may not spill over onto the crowded shipping lanes of the Indian Ocean Region: China's Malacca dilemma suggests the PLA Navy does not currently have the capability to militarily dominate the region.²⁹ From an IAF perspective, the entry of China's airpower in the IOR represented by the PLA securing airbases in Pakistan, the East Coast of Africa, or anywhere in Southeast Asia would permanently change India's threat perception regarding Beijing.

Until then, sea-denial operations are likely to be the maximum military effort that both navies will be willing to commit to in the IOR. Yet to create balance, the Indian Navy can and must build capability to prosecute sea-control operations in the IOR with a focus on deploying surface action groups and carrier battle groups.

Still, some in India are concerned that to sustain a limited maritime confrontation in the Southern Indian Ocean areas, the Indian Navy's maritime air operations would need to be supported by land-based offensive airpower and other force multipliers. To make good this operational requirement, the meager integral aviation assets of even a two-carrier fleet of the Indian Navy would need to be complemented by the IAF's long-range maritime strike and other enabling capability offered by platforms such as the Rafale, Su-30MKI, the MRFA, AWACS, and aerial refuelers.

Recent developments suggest the IAF is rapidly honing its extended maritime strike capability. On May 31, 2023, four Rafales airborne from their home base in Eastern India conducted simulated attacks on targets in the Andaman and Nicobar Islands nearly 2,000 kilometers away after a simulated aerial engagement enroute and returned to base after a six-hour sortie.³⁰ This capability suggests that additional air bases in Southern India and enhanced aviation-related infrastructure on the Andaman and Nicobar Islands are key to exploiting the reach of Indian airpower to blunt attempts by the Chinese navy to make offensive forays northwest of the Malacca, Sunda, and Lombok Straits.

The silver lining in this playbook is the availability of the versatile P-8 maritime reconnaissance and submarine hunters of the Indian Navy that could effectively pair with the IAF's long-range, maritime-capable strike aircraft, AWACS, and aerial refuelers.³¹ Greater engagement and better interoperability between the Indian Navy and

29. Vidya Sagar Reddy, "China's Malacca Dilemma," Australian Naval Institute, September 17, 2016, <https://navalinstitute.com.au/>.

30. "Fillip to India's Firepower: Rafale Jets Conduct Strategic Aerial Exercise over Indian Ocean," Organiser, June 1, 2023, <https://organiser.org/>.

31. Chris Dougherty, "Force Development Options for India by 2030," Center for New American Security, October 23, 2019, <https://www.cnas.org/>.

the Indian Air Force and frequent joint exercises with the US Air Force, US Navy, and other members of the Quadrilateral Security Dialogue will add value to the ability of the joint airpower resources of the IAF and the Indian Navy to offer effective and asymmetric options over the Indian Ocean Region.

India's Choices and Challenges

India's strategic choices with regard to airpower as an instrument of statecraft in the ongoing search for strategic equilibrium with China are clear. While examining these choices, India must weigh the costs and risks of adopting a more offensive air posture for limited war versus its traditional and restrained land-centric approach.

If it is satisfied with a purely defensive posture and is circumspect about China's escalation and the IAF's ability to take the battle onto the Tibetan Plateau, the current trajectory of IAF acquisitions and training along the LAC must be reviewed. The IAF must limit its operational philosophy only for shallow operations around the LAC with a sole concentration on improved surveillance, rapid mobility, and robust air defense and must restrict its offensive options only for the western sector.

Such a strategy, however, will reveal deep contradictions within India's strategic-political-military structures, considering that the overall posture on the western front has changed in recent years from reactive to proactive deterrence. Anything different on the northern and eastern fronts will reveal that the reactive and diffident mindset that existed prior to and during the 1962 war with China has not been erased from the Indian strategic psyche.

The current strategic dispensation, however, prefers assertive stances with regard to both Pakistan and China. Supporting this are recent pronouncements by political ideologues that call for India to stand up to China's Wolf Warrior diplomacy.³² Should India choose a moderately coercive aerial strategy that seeks to do battle with the PLAAF over the Tibetan Autonomous Region, any deep-strike campaigns must be thought through carefully, keeping China's red lines and escalatory dynamics in mind.

A recent assessment by India's former national security adviser Shivshankar Menon reveals the recent standoff represents "massive Chinese escalation to fundamentally alter the status quo."³³ The assessment is instructive and reason enough to relook at India's military strategy and posturing along the LAC. The bottom line is that in today's technologically intensive warfighting environment, the coercive impact of India's responses following any future encounters or skirmishes can never be robust enough without demonstrated cutting-edge aerial capability, both kinetic and nonkinetic.

32. Ram Madhav, "China's Wolf Warrior Diplomacy," *Indian Express*, June 4, 2020; and see "India-China Standoff: Confident Present Conflict Will Be Resolved through Diplomacy, Says Ram Madhav," *India Today*, May 25, 2020.

33. Shivshankar Menon, "Fmr NSA Menon—If Reports True, This Is Massive Escalation by China to Fundamentally Alter Status Quo," interview with The Wire's Karan Thapar, June 13, 2020, YouTube video, 37:16, <https://www.youtube.com/>.

To be fair to India's policymakers, there has been an exponential increase in the pace of infrastructure development around the LAC, including the operationalization of several advance landing grounds and connectivity corridors like the strategic Darbuk-Shyok-Daluat Beg Oldie Road that emerged as a bone of contention during the recent face-off.³⁴ Still, this infrastructure largely supports defensive operations and does not yet offer any marked opportunities to facilitate offensive operations.

Even if the Indian Army has limited offensive options across the LAC, it must realize the only way it can thwart PLA operational designs during a limited conflict across multiple high-altitude pressure points is if the IAF is able to degrade and delay the PLA troops-armor-logistics induction cycle. It can only do this if the IAF is able to carry out interdiction of communication lines ranging from 150 kilometers to the LAC/tactical battle area. For this to fructify, the IAF would first need to create and maintain a favorable air situation over a limited area at the time of its choosing to support Indian Army operations.

Put simply, the IAF will have to revisit all the classical roles of offensive airpower within a limited war framework.³⁵ A nuanced preparatory airpower strategy to counter an increasingly belligerent China must include a tightened surveillance grid comprising army and air force unmanned aerial vehicles (UAVs), recce and observation helicopters, IAF Su-30MKIs and Jaguars with their recce pods, and aircraft belonging to India's civilian intelligence agencies as well as space-based surveillance assets.

It is instructive to remember that during the Kargil conflict, it was only in mid-June 1999, when IAF MiG-25s and the civilian Gulfstream recce aircraft were pressed into action, that the IAF received meaningful intelligence for targeting. This allowed them to hit some major targets like the logistics hub at Muntho Dalo and the hangar-like-structure at Point 4388.³⁶

Strategies to mitigate the adverse impact of the steady decline in the number of fighter squadrons include the ramping up of the IAF's fleet of armed UAVs and the deployment of swarm drones along the LAC. Yet considering these as a replacement for sophisticated multirole and flexirole manned platforms is dangerous. Notwithstanding the widespread use of UAVs and drones in Russia's war with Ukraine in semi-urban terrain, the losses incurred by both sides vis-à-vis their operational impact reflect the challenges of UAV and drone operations in a fiercely contested air defense environment.³⁷

34. Shaurya Karanbir Gurung, "In Making for Two Decades, DSDBO Road Now Upsets China," *Economic Times*, June 8, 2020, <https://economictimes.indiatimes.com/>.

35. Directorate of Operations (Space), Indian Air Force (IAF), *Basic Doctrine of the Indian Air Force-2012* (New Delhi: IAF, 2012), <https://www.scribd.com/>; and see Christina J. M. Goulter and Harsh V. Pant, "Realignment and Indian Airpower Doctrine: Challenges in an Evolving Strategic Context," *Journal of Indo-Pacific Affairs* 1, no. 1 (Fall 2018), <https://www.airuniversity.af.edu/>.

36. Lambeth, *Airpower*.

37. Dominika Kunertova, "The War in Ukraine Shows the Game-Changing Effect of Drones Depends on the Game," *Bulletin of the Atomic Scientists* 79, no. 2 (2023), <https://doi.org/>.

The aerial environment in both an India-China and India-Pakistan context will be one of near parity and will be fiercely contested. Consequently, the survivability of UAVs will be a serious question; they must not be replacements for manned offensive platforms.

The speedy and highly impactful performance of the IAF's air mobility fleet of C-17s, C-130s, Il-76s, An-32s, Chinooks, and the latest versions of the versatile Mi-17 helicopters during the Galwan Crisis, contributed significantly to the Indian Army's rapid mobilization of troops, armor, and artillery in response to China's aggressions in Eastern Ladakh during the height of the coronavirus pandemic. Rapid reserves and special forces deployment in narrow valleys and at high-altitude advanced landing grounds like Daulat Beg Oldi, Nyoma, and Fukche is no longer a bridge too far for the Indian Army, thanks to the proven capabilities offered by IAF C-130s, Chinooks, and Mi-17V-5s and 1Vs with their experienced aircrews.

For the time being, the IAFs existing fourth-generation fighter platforms comprising a miniscule number of Rafales, a large fleet of Su-30MKIs, and a modest number of upgraded and legacy Mirage 2000s and MiG-29s and a growing fleet of LCA Mk1s may be sufficient for a localized conflict. But should the conflict expand across the Line of Actual Control, the IAF would find it tough to execute all its critical offensive roles. These would include the securing of a localized favorable air situation, shaping the battlefield through effective interdiction, and undertaking battlefield airstrike missions to relieve pressure on Indian Army forces engaged in a contact battle.

In truth, the IAF does not have enough offensive assets to widely prosecute such a campaign while concurrently maintaining a vigil on the western front, even in the absence of a second front opened by India's western adversary, Pakistan. If that country were to open a second front in its role as a prospective vassal state of China, the situation could be challenging. The acquisition of the 114 MRFA aircraft with high-end fourth-generation capability and combat enablers such as AWACS, aerial refuelers, and intelligence, surveillance, and targeting capabilities, could be critical for the IAF to maintain its combat edge over the PLAAF in a two-front scenario.

A positive by-product of this prospectively expensive buy would be if the IAF leverages the deal with an eye on the proposed advanced medium combat aircraft as an effective counter to the PLAAF's fifth-generation fighter, the J-20 and its derivative, the J-31.³⁸ These capabilities are essential to stay in the race over the next decade as the IAF has few offensive choices.³⁹ Shedding excess in areas of revenue expenditure and improving the tooth-to-tail ratio will be essential to manage budgetary constraints.

With integration and transformation of India's armed forces high on the agenda of the government, the incremental creation of integrated theater commands is likely to develop in the next few years, despite the rather acrimonious debate between the three

38. "Government Plans on AMCA," press release, Press Information Bureau, Government of India, Ministry of Defence, March 14, 2022, <https://pib.gov.in/>.

39. Snehes Alex Philip, "IAF Chief Contradicts CDS Rawat, Says Plan Is to Buy 114 Foreign Fighters besides LCA Tejas," *ThePrint*, May 18, 2018, <https://theprint.in/>.

services over asset allocation and command and control. A recent analysis by the respected think tank Delhi Policy Group on integrated theater commands suggests that “three services have reached a consensus on the broad contours of the theatre commands being given shape by India’s Chief of Defence Staff (CDS).”⁴⁰

Yet the analysis steers clear of addressing a major stumbling block that persists: the dilution in command and control over and the paltry distribution of scarce land-based IAF airpower assets, both kinetic and nonkinetic. There are no clear answers on the horizon beyond an understanding that diluting preciously scarce offensive assets can prove costly in an intense, limited conflict across sectors and domains and destabilize the fragile balance that exists between the IAF and PLAAF.⁴¹

A way forward in this logjam is to think through an interim model that looks at distributed control of IAF assets within the existing command structure. The current chiefs of staff committee and chief of defence staff would be adequate to balance competing theater requirements based on the overall military strategy, both in war and peace.

Assuming theater commands will be established in the foreseeable future, there needs to be a conscious relearning among theater commanders on leveraging offensive airpower as the lead element, rather than using it as an adjunct of land or sea power. The Galwan Crisis has ensured that a significant chunk of IAF fighter, transport, and helicopter aircrew is now familiar with the flying environment along the LAC, something that was absent during the preceding decades. This was not because of the IAF’s reluctance to fly extensively along the LAC but because of strategic guidance that was preoccupied with confidence-building measures and maintaining “peace and tranquillity” along the LAC, and that intimated fighter operations close to the LAC could lead to escalation.

If there is cause for concern for the IAF, it is in the realm of space-based command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) for targeting, early warning, electronic warfare, and persistent stare capabilities to improve situational awareness. Through a robust military space program that began in the mid-1980s, China has stolen an unmatched lead over India in the number of dedicated military satellites in orbit.⁴² Until that asymmetry is reduced, India and the IAF specifically will have to bank on reliable support from strategic partners to fill this gap.

In a recent development, the release of the *Space Vision for 2047* emphasizes the Indian Air Force’s commitment to accelerate development in areas such as positioning, navigation and timing, advanced ISR, space weather prediction, and space situational

40. Deependra Singh Hooda, “Integrated Theatre Commands: Stage Set for Political Stewardship,” Delhi Policy Group, August 30, 2023, <https://www.delhipolicygroup.org/>.

41. Arjun Subramaniam, “Get IAF Back to Full Strength before Thinking of Integrating the Services,” ThePrint, February 20, 2018, <https://theprint.in/>; and Arjun Subramaniam, “The Debate over Integrating the Services: Understanding the Air Force Perspective,” ThePrint, February 17, 2018, <https://theprint.in/>.

42. Namrata Goswami, “Asia’s Space Race: China Leads India on Strategy,” Interpreter – Lowy Institute, March 9, 2022, <https://www.lowyinstitute.org/>.

awareness. The doctrinal document has an aspirational target of “100 big and small military satellites” with the help of the private sector. These initiatives will have an exponentially positive impact on the ability to prosecute offensive air operations, provided this aspirational articulation is matched with intent, budgetary support, and synergy between multiple stakeholders such as the Indian Space Research Organisation, the Defence Research and Development Organisation, the private sector, and the IAF.⁴³

The Big Picture

There can be no doubt that the most desirable outcome following the ongoing pattern of complex standoffs across the Line of Actual Control is rapid de-escalation and prevention of conflict. Yet the current volatile situation and the lack of any breakthrough in over 20 rounds of talks between Indian and PLA military commanders suggest the probability of the situation snowballing into a localized limited conflict that could expand across the LAC remains moderately high.⁴⁴

The earlier proposition that China will continue to “salami slice” and nibble away at disputed territory along the LAC even as diplomacy and negotiations offer repeated face-saving opportunities to both sides seems to have been dismantled by India’s sustained consolidation of troop deployments along the LAC. This military posture has been accompanied with India’s firm diplomatic push to return to the status quo as per the pre-2019 positions for any meaningful and composite security and border-resolution talks to recommence.⁴⁵

Unlike the IAF, which has gained recognition as being among the leading independent air forces in the world, the PLAAF continues to search for an identity within the existing theater command construct of the PLA. A 2022 report argues this point:

Despite its lengthy history, the PLAAF has struggled to carve out a role and mission distinct from that of China’s ground forces and navy that is closely tied to political priorities of the Chinese Communist Party. Additionally, the establishment of the Strategic Support Force (SSF) in 2016 further restricted the PLAAF’s mission set.⁴⁶

There will come a time when India will have to respond proactively to protect its interests following continued coercion by the PLA along the Line of Actual Control. Some analysts also believe “China will blink if India is ready to go to war,” and “not

43. Rajat Pandit, “IAF Goes Full Throttle to Turn into an ‘Aerospace Power,’” *Times of India*, December 11, 2023, <https://timesofindia.indiatimes.com/>.

44. Rajat Pandit, “India, China Hold 20th Round of Talks, but Still No Breakthrough,” *Times of India*, October 12, 2023, <https://timesofindia.indiatimes.com/>.

45. Poonam I Kaushish, “Salami Slicing Tactics Fail,” *Arunachal Times*, June 23, 2020, <https://arunachal-times.in/>.

46. China Aerospace Studies Institute (CASI), *PLA Aerospace Power: A Primer on Trends in China’s Military Air, Space, and Missile Forces*, 3rd ed. (Maxwell AFB, AL: CASI, August 15, 2022), 10, <https://www.airuniversity.af.edu/>.

because China does not want to fight a war, but because it doesn't want to lose face."⁴⁷ This, too, is a dangerous proposition because China's strategic behavior in recent times suggests the Xi Jinping-led regime is very different from earlier dispensations, which were prepared to bide their time.

Today, the People's Republic of China seems to be straining to validate decades of a focused buildup of military capability against recalcitrant peripheral adversaries. There seems to be an emerging propensity to use diplomacy merely as a smoke screen and not as a problem-solving tool as India does. India does not need to mirror that strategy but must shed old shibboleths on the utility of force as an instrument of statecraft.

India's ability to militarily deter the Chinese dragon will be an acid test on its road to becoming a leading power in the next decade. In an environment that involves limited conflict below the nuclear threshold, the IAF will be the only credible coercive deterrent in both conflict prevention and conflict cessation before hostilities spread to multiple domains. Cutting-edge airpower is among the panoply of several desired capabilities that need to be sharpened, even if it means feeling some budgetary pain and revisiting existing joint warfighting strategies. **Æ**

47. Vijaiender K. Thakur (@vkthakur), retired IAF fighter pilot, "China will blink if India is ready to go to war . . . and not because China does not want to fight a war, but because it doesn't want to lose face," Twitter, June 11, 2020, 6:02 p.m., <https://twitter.com/>.

A COMMERCIAL SPACE SECURITY DILEMMA?

The Dynamics of Commercial Competition in Space

WENDY N. WHITMAN COBB

The United States and other nations are relying more heavily on commercial space companies than ever before. While some see this as beneficial, a heightened focus on economic security and the growing power of commercial space companies may portend the onset of a commercial space security dilemma centered not on space capabilities but on the companies driving innovation. In this security dilemma, countries, specifically the United States and China, are incentivized to build and protect their commercial space markets to increase their military and economic power, replicating the dynamics of an arms race. The emerging commercial space security dilemma has implications for space and for great power competition.

The growing importance of the commercial space industry has been demonstrated repeatedly in recent years. As tension in the space domain heightens, the United States in particular is turning to commercial space companies for everything from launch services to communications.

Since the beginning of the first Space Age in the 1960s, the US government has contracted with major companies to build and sometimes even operate satellites and space-based systems, retaining control over the substance of the satellites themselves as well as their operations. Today in the third Space Age, however, the paradigm has shifted to one where the US government as well as other spacefaring governments are now contracting for services from companies who retain full control over the satellites, the systems, and their operations. In return, as the United States has seen, there are significant benefits: lowered costs, new space-based capabilities, increased redundancy and resiliency of space systems—especially with systems such as communication and remote imaging that are central to national security—and greater access to space. The United States is not alone in recognizing the growing importance of commercial space. Russia has been wary and critical of the rise of SpaceX, which has put a dent in Russia's own commercial launch industry in addition to eliminating the NASA paycheck

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Moscow received for taking American astronauts to and from the International Space Station.¹

In 2014, recognizing the rising impact of commercial space companies, the Chinese government adopted a policy of encouraging the growth of a domestic commercial space industry, ostensibly to take advantage of the same things the United States has found helpful, such as cost reduction and innovation.² While this might indicate the increasing legitimacy of commercial space around the world, it also signals a potentially more dangerous phenomenon: a security dilemma—or spiral model—where the actions taken by a state for its own security lead other states to respond in ways that begin a repeating cycle of escalatory reactions.

Describing current commercial space activity as an arms-race spiral may seem counterintuitive, especially because some have argued that turning to commercial space capabilities may actually help alleviate a security dilemma in the space domain.³ Yet three factors mitigate the potentially peaceful influence that commercialization may offer: the unique dual-use nature of space technology, the rising importance of economic security, and the dominance of governments in commercial space markets.

These factors suggest a veritable arms race is developing between the United States and China in terms of the commercial space industry. As commercial space companies provide more national security services, they themselves simply become a thin veneer for the military and its use of force. As such, both countries are incentivized to step up investment in and protection of their domestic commercial space markets to increase their military and economic power, spurring the other to do more of the same. Thus, a race for the greatest quantity and quality of commercial space resources ensues.

This article explores this idea, discussing the concept of the security dilemma and its variations and outlining how the unique nature of the space domain contributes to the security dilemma in general and the commercial space security dilemma (CSSD) specifically. Like security dilemmas generally, all countries could find themselves in a CSSD; however, this article focuses primarily on the developing dynamic between the United States and China. Evidence indicates the commercial space industry has already affected the security balance between the United States and China, and both have responded with certain actions, including moves to protect domestic industries. As a result, several consequences flow from this commercial space security dilemma, including shifts in where competition between states is occurring, changes in what it means to be a space power, impacts on deterrence, and potential caution on the part of commercial space companies who might find themselves the target of adversarial

1. Marina Koren, “The NASA Decision Russia Didn’t Like,” *Atlantic*, February 28, 2019, <https://www.theatlantic.com/>.

2. Irina Liu et al., *Evaluation of China’s Commercial Space Sector*, Institute for Defense Analysis (IDA) Document D-10873 (Washington, DC: IDA Science and Technology Policy Institute, September 2019), <https://www.ida.org/>.

3. Brad Townsend, *Security and Stability in the New Space Age: The Orbital Security Dilemma* (New York: Routledge, 2020); and Wendy N. Whitman Cobb, *Privatizing Peace: How Commerce Can Reduce Conflict in Space* (New York: Routledge, 2020).

countries. These findings contribute to a further understanding of the dynamics of commercial space and to a more rigorous study of space from the perspective of international relations, particularly the literature on arms races and security dilemmas.⁴

Security Dilemmas, Dual Use, and the Space Market

Variations on the Security Dilemma

The notion of a security dilemma was introduced and developed by scholars beginning in the 1950s.⁵ The idea is intuitive: in an anarchic world where it is impossible—or nearly so—to divine the intent of nation-state actors, when state A increases its arms, state B cannot know whether that is to satisfy state A's own defensive needs or to prepare for an eventual attack. As such, it is only rational for state B to also increase its own capabilities which may then influence state A to continue its own buildup.

This feedback loop continues until both countries are heavily armed and unsure of the other's intentions. Several different variations have since emerged, and while the commercial space security dilemma is conceptually distinct, it most closely resembles the economic security dilemma, technology security dilemma, private military services security dilemma, and securitization, or dual-use dilemma.

In an economic security dilemma, countries—in this case the United States and China—react to perceived economic aggression to bolster domestic economic security, which in turn is perceived as hostile behavior by the other actor.⁶ In other words, the economic sphere simply replaces the military one of the classic security dilemma and is a further reflection of the increasing importance of economic power and security to great power competition today.⁷

Relatedly, a technology security dilemma has economic components but is more focused on the technology industry and developments in areas such as artificial intelligence and semiconductors.⁸ Some see this security dilemma emerging between

4. Dimitrios Stoukos, "International Relations and Outer Space," *Oxford Research Encyclopedia of International Studies*, October 2022, <https://doi.org/>.

5. John Herz, "Idealist Internationalism and the Security Dilemma," *World Politics* 2, no. 2 (1950); Samuel P. Huntington, "Arms Races: Pre-Requisites and Results," in *Public Policy: A Yearbook of the Graduate School of Public Administration, Harvard University*, ed. Carl S. Friedrich and Seymour E. Harris (Cambridge, MA: Harvard, 1958); Colin Gray, "The Arms Race Phenomenon," *World Politics* 24, no. 1 (1971); and Robert Jervis, *Perception and Misperception in International Politics* (Princeton, NJ: Princeton University Press, 1976).

6. David J. Bulman, "The Economic Security Dilemma in US-China Relations," *Asian Perspective* 45, no. 1 (Winter 2021), <https://doi.org/>.

7. See, for example, Nehra Mishra, "The Trade: (Cyber) Security Dilemma and Its Impact on Global Cybersecurity Governance," *Journal of World Trade* 54, no. 4 (2020); and Andrej Krickovic, "When Interdependence Produces Conflict: EU-Russia Energy Relations as a Security Dilemma," *Contemporary Security Policy* 36, no. 1 (2015).

8. Darren J. Lim and Victor Ferguson, "Conscious Decoupling: The Technology Security Dilemma," in *China Story Yearbook*, ed. Jane Golley et al. (Canberra, Australia: ANU Press, 2019), <https://press-files.anu.edu.au/>.

the United States and China, wherein such pressures are leading to an explicit decoupling of economic relations and technological supply chains. A private military services security dilemma is characterized by countries increasingly using private military contractors to either supplement or replace their own security forces, opening the way for other countries to provide such services as a growing trend in regions such as Africa and Southeast Asia.⁹

Finally, the literature identifies the dual-use security dilemma, beginning with what might be considered a more classic security dilemma approach: if one actor has dual-use capabilities, it will force the other to develop them as well.¹⁰ The theory has since evolved to examine the process of securitization or the process by which a state decides whether to identify another state's dual-use technology as potentially dangerous or accept that state's assertion of its peaceful purposes.

Of these security dilemmas, the commercial space security dilemma may be most like the use of private military contractors. Both private military service providers and commercial space companies offer services that are essentially supplements, if not replacements, for state-controlled military forces. There are distinctions, however, that can result in a security dilemma of a different type.

For one, the barrier to entry for private military contractors is arguably much lower than for commercial space companies, meaning there is more competition in the market. Second, states are not the only—or the most significant—customer for private military services, as they are for commercial space companies.¹¹ Finally, these contracting organizations have not usually played a role in great power competition, instead becoming important in regional conflicts or in situations where state power is not nearly as assured.

To be sure, private military contractors such as Blackwater (now Academi) were important during American actions in Iraq and Afghanistan, and more recently, the Wagner Group has been active in Ukraine. Despite the involvement of major powers, however, these military conflicts could still be classified as regional and not competition and/or conflict between two major powers. This difference implies there will be different dynamics and consequences involved with a commercial space security dilemma than for the security dilemma arising from the use of private military contractors.

Further, the CSSD is distinct from the dual-use dilemma, given that commercial space activities are acting as a thin veneer on state military action—something quite different from what occurs with more basic dual-use technologies—the process through which commercial space is deemed to be a threat may indeed be ongoing. As detailed below, China and Russia both see US commercial space activities as a threat,

9. Carolin Liss, "Southeast Asia's Maritime Security Dilemma: State or Market?," *Asia-Pacific Journal* 5, no. 6 (2007).

10. Amir Lupovici, "The Dual-Use Security Dilemma and the Social Construction of Insecurity," *Contemporary Security Policy* 42, no. 3 (2021).

11. Doug Brooks, "Messiahs or Mercenaries? The Future of International Private Military Services," *Managing Armed Conflicts in the 21st Century*, ed. Adekeye Adebajo and Chandra Lekha Sriram (London: Frank Cass, 2001).

with China in particular responding by enhancing its domestic commercial space industry to act as a bulwark.

In sum, while the many iterations of security dilemmas help to inform a commercial space security dilemma, none quite capture the emerging dynamics of the third Space Age. Add to that the distinct nature of space itself, and the result is an entirely new form of the security dilemma.

Dual Use and Space

Space has long been known, in the tagline of *Star Trek*, the historic entertainment franchise, as “the final frontier.” Aside from highlighting the unknown nature of the space domain, this appellation also puts into focus the qualities of the space domain that contribute to much of the uncertainty involved in security dilemma theories. Uncertainty not just about a state’s intentions but also about a state’s message means that rational actors should move in ways to prevent attack by that state.¹²

Adding to the difficulty in assessing and understanding a state’s intent, the space domain is physically distinct and distant from earthbound observers.¹³ Space is a difficult place to operate in with its microgravity, increased radiation, and the speed at which objects are moving. With only a handful of individuals in space at any given moment, space operators must work from an array of sensors and data that, while giving a precise indication of what systems are doing and where at any given time, does a remarkably poor job of explaining why.

This uncertainty with regard to intent leads to difficulty in understanding whether a state is moving a satellite closer to an adversary’s satellite for spying or jamming signals or simply to avoid a piece of dangerous space debris. Similarly, if a satellite stops working, it is difficult to ascertain immediately whether the problem is internal or due to a strike from a micrometeoroid or an attack, making attribution difficult. While this can be challenging to assess in the air, land, and sea domains as well, access and immediate assessment of the malfunctioning equipment or questionable activity in those domains are much easier than they are in space.

This uncertainty is only compounded by the ambiguity of space technology’s dual-use nature. Other authors have noted the impact this has in space and in other technological domains. Yet with respect to commercial space companies, dual use can also mean whether a given commercial system is being used by a state

12. Herz, “Security Dilemma,” 157; and Jervis, *Perception*, 59.

13. Elizabeth Mendenhall, “Treating Outer Space Like a Place: A Case for Rejecting Other Domain Analogies,” *Astropolitics* 16, no. 2 (2018).

for military or aggressive purposes or whether, at any given time, it is only being used for civilian and commercial purposes.¹⁴

This is ambiguity in its truest sense in that a satellite's purpose is not only unclear but also multifold, sometimes at the same time. For example, while militaries use SpaceX's satellite internet constellation Starlink—at a minimum, the United States and Ukraine—there may be points in time when none are routing their communications through the megaconstellation. At other times, Starlink may be employed by a mixture of civilian, commercial, and military users. While some methods may exist to determine whether a military or state government is sending signals through particular satellites at a particular point in time—the presence of a satellite overhead, for example—some element of ambiguity in whether a commercial system is actively being used for aggressive purposes will persist even if a country or company outrightly declares otherwise.

This is an important point: ambiguity in a space asset's purpose can only increase a country's uncertainty about an adversary's actions and intentions. Given that uncertainty is a key element driving arms-race spiral dynamics, adding to that may only exacerbate a country's response to such actions. Whereas the purpose of space assets explicitly owned and operated by state entities is more certain, the possibility that state A may be using commercial assets for national security means that decisionmakers in state B may feel as if they need to prepare even more to compete against and possibly defeat a more capable adversary.

Commercial Space Market

The difference between the commercial space market and other economic markets also plays a role in understanding the CSSD. Though provisions for a commercial space market were put in place in the United States beginning in the 1980s, such a market has been slow to develop.¹⁵ Technology costs, including space launch and satellite development, remained high, relegating space activity to the purview of great powers and major companies.

Yet in the early twenty-first century, these dynamics began to change as a wave of new space companies entered the industry, focused on reducing cost by making rockets reusable and utilizing cheaper and smaller off-the-shelf technologies for the rockets and attendant satellites. At the same time, an opening for commercial companies emerged as the US government forced the partnership of Boeing and Lockheed Martin—companies once independently providing launch services—making the launch

14. Jonathan B. Tucker, ed., *Innovation, Dual Use and Security: Managing the Risks of Emerging Biological and Chemical Technologies* (Cambridge, MA: MIT Press, 2012); Thea Riebe and Christian Reuter, "Dual-Use Dilemmas for Cybersecurity, Peace, and Technology Assessment," in *Information Technology for Peace and Security*, ed. Christian Reuter (Wiesbaden, Germany: Springer, 2019); Joan Johnson-Freese, *Space Warfare in the 21st Century* (New York: Routledge, 2017); and Aleksander M. Lubojemski, "Satellites and the Security Dilemma," *Astropolitics* 17, no. 2 (2019).

15. See Whitman Cobb, *Privatizing Peace*.

industry a government-dictated monopoly.¹⁶ The government also directed NASA to begin shifting its human spaceflight program away from the space shuttle. This combination of forces has helped lead to the commercial space boom in recent years.

Despite the growing importance and value of commercial space, however, the fact remains that in the United States, the government remains the single most important customer supporting much of the market for commercial space activities.¹⁷ While the US government was initially wary of untested commercial space companies, in the past decade, it has become an enthusiastic supporter of the industry and has increased its use of commercial capabilities significantly. Even in areas where government-owned and -operated systems once dominated, as in the field of remote sensing, contracts are becoming more common, making the US government a powerful and influential customer. The result is that companies currently in existence are often compelled to compete for government contracts and new companies must try to win such contracts to have any hope of economic success.

The Commercial Space Security Dilemma

The commercial market offers the government the opportunity not only to work with successful companies but also to take advantage of rapid innovations to create and deploy new and increasingly useful capabilities. As such, some military strategists have proposed that shifting some government-owned and -operated activities to commercial services would not only lower costs and increase government capabilities but also help to reduce a growing security dilemma in space, as this might signal a benign rather than hostile intent on the part of the United States.¹⁸ This perception is further advanced by the idea that as the state is the only legitimate wielder of power and military might, commercial systems could not legally be used in an aggressive manner.¹⁹

While moving military activities to commercial providers might appear to send a peaceful signal to adversaries and reduce the uncertainty in government use of space, the commercial space security dilemma argues otherwise—it does not matter who is doing the activity if the ultimate benefactor is a government. In other words, if the United States acquires a potentially aggressive capability via a commercial provider, it will still use that capability in much the same way it would if it owned it directly. Thus, an adversary government may still rationally assume the capability is a threat and react accordingly.

This tendency is heightened when the government is the only or most significant customer in a commercial market. Far from ameliorating the security dilemma in space, such a reaction only moves the actors in a different direction, which distinguishes a commercial space security dilemma from the traditional security dilemma.

16. William E. Kovacic, “Competition Policy Retrospective: The Formation of the United Launch Alliance and the Ascent of SpaceX,” *George Mason Law Review* 27, no. 3 (2020).

17. Svetla Ben-Itzhak, “Companies Are Commercializing Outer Space. Do Government Programs Still Matter?” *Washington Post*, January 11, 2022, <https://www.washingtonpost.com/>.

18. Townsend, *Security and Stability*.

19. Townsend.

Seeking the benefits of a commercial space sector—innovation, lowered costs, and increased capabilities—the country supports sector development through laws, regulations, contracts, and markets. As this market develops, it can impact the security balance between two states, potentially threatening an adversary state. The unique nature of space further heightens the uncertainty: a potential adversary may be unable to assess whether a given commercial satellite is being used for peaceful or aggressive purposes by a state entity at any given time.

This uncertainty causes the other state to increase its own space capabilities, including the stimulation of its own commercial space industry to take advantage of the above mentioned benefits. The original state in turn sees these developments as a threat to both its economic and security position, causing further investment in and emphasis on commercial space.

The CSSD also changes what it means to be a space power. To this point in space history, the ability to have and exert spacepower has been reserved only for those states that could afford to be part of what one international relations scholar terms the space club.²⁰ The growth of commercial space in general has meant that those capabilities are no longer reserved for great powers but instead can accrue to any state willing to pay the reduced cost—for example, Ukraine. The result is that “states that can harness the capabilities of their space entrepreneurial community, including both start-ups and modernized contractors, will be in a position to increase their structural power.”²¹

If having space capabilities allows states to join an elite club whose membership signals both power and prestige, then the wider availability of such capabilities means an increase in states with club membership, thus reducing the level of prestige that membership brings.²² As a result, the competition moves to a more select level: those states that can support and foster an increasingly influential commercial space industry.

In other words, in a world where commercial space is powerful but also accessible as a global commodity, any state can become a space power but not every state can be a commercial space power. Commercial spacepower enables states a degree of control over the actions of those commercial space companies. The hegemonic commercial space sector, led by a very small number of companies operating out of an even smaller number of nations, further encourages the spiral dynamic as states such as the United States and China contend for an even higher level of international power.

The United States and China

Where the economic realm was once seen as protected from warfare, globalization and the era of deep interconnectedness has meant that today, competition between states has

20. Deganit Paikowsky, *The Power of the Space Club* (Cambridge, UK: Cambridge University Press, 2017).

21. Santiago Remaneria, “Power Dynamics in the Age of Space Commercialization,” *Space Policy* 60 (2022): 10.

22. Paikowsky, *Power of the Space Club*.

multiple dimensions, including commercial space.²³ Though it is perhaps easiest to see the impact of commercial space in the ongoing conflict in Ukraine, there is already substantial evidence of the CSSD emerging between the United States and China.

First, remote sensing images from commercial satellites have been used to identify and track suspicious activities by China, including the construction of nuclear silos and Uyghur concentration camps.²⁴ These images, provided by companies such as Maxar Technologies and Planet Labs, not only highlight China's violations of international law and threatening behavior, but also allow the United States to call out such behavior without divulging its own sources and methods. Similarly, in the Ukraine conflict, Western officials have been able to use commercial imagery to preempt Russia's denials without giving away the extent of state capabilities.²⁵ Such public analysis of open-source imagery gives US officials yet another opportunity to further their case—in these instances in the form of private, nongovernmental imagery analyses—to domestic and international audiences about the threat posed by China.

But how does this capability change the security calculus between China and the United States? China might once have expected such evidence to remain classified because US officials would not want to give away the quality of their own space capabilities, but it is increasingly likely that state behaviors will come to light via commercial satellites. And efforts to better hide its activities in response would impose an additional cost on China due to the commercial capability.

SpaceX's Starlink has also threatened to upset relations between the United States and China. While Starlink does not currently provide service to China, the possibility that it could be used in a time of conflict to US advantage has not escaped Chinese officials. To this end, SpaceX founder and chief executive officer Elon Musk has recently claimed the Chinese government has sought assurances that Starlink would not be used or sold in China, particularly in light of its impact in the Ukraine conflict.²⁶

In the spring of 2022, Chinese scientists warned that Starlink posed a grave threat to Chinese national security because the system could be used for a wide variety of functions: missile (including hypersonics) tracking, transmission speed boosting for drones and fighter planes, or even as kinetic weapons if they were to ram into another satellite.²⁷ While there is little evidence that Starlink could provide a missile-tracking

23. Nicholas Mulder, *The Economic Weapon: The Rise of Sanctions as a Tool of Modern War* (New Haven, CT: Yale University Press, 2022).

24. Matt Korda and Hans Kristensen, "A Closer Look at China's Missile Silo Construction," Federation of American Scientists, November 2, 2021, <https://fas.org/>; and Doug Irving, "China's Disappeared Uyghurs: What Satellite Images Reveal," *Rand Review* (blog), April 2021, <https://www.rand.org/>.

25. Theresa Hitchens, "How US Intel Worked with Commercial Satellite Firms to Reveal Ukraine Info," *Breaking Defense*, April 7, 2022, <https://breakingdefense.com/>.

26. Roula Khalaf, "Elon Musk: 'Aren't You Entertained?'," *Financial Times*, October 7, 2022, <https://www.ft.com/>.

27. Ben Turner, "Chinese Scientists Call for Plan to Destroy Elon Musk's Starlink Satellites," *Live Science*, May 27, 2022, <https://www.livescience.com/>.

function, researchers nonetheless argued that the Chinese government needed to find ways immediately to counter the potential threat.

Another potential impact of Starlink is the wider availability of uncensored information in China, which has instituted strict firewalls to limit its citizenry's access to global information. Satellite services such as Starlink cannot legally operate in countries such as China or Iran without a license. Yet on September 23, 2022, in reaction to crackdowns by the Iranian government, Secretary of State Antony Blinken announced measures to "advance Internet freedom and the free flow of information for the Iranian people," which included the activation of Starlink in Iran.²⁸ As much as Starlink's megaconstellation that offers resiliency and redundancy has helped a country such as Ukraine when communications have been interrupted, countries such as China and Iran must surely see a similar free flow of information, resulting from the same capabilities, as dangerous to the stability of their society in general.

The national security impact of Starlink begs another question: if satellite communications were one of the very first space capabilities to be commercialized (the founding of COMSAT goes back to the Kennedy administration), why are we just now seeing commercial satellite communications have this significant of an effect?

To be sure, states have historically jammed commercial satellite communications; in just the past few years, satellite systems have been jammed by state actors such as Iran and hacked by states such as Russia.²⁹ Yet Starlink and other emerging systems are different in that they are megaconstellations, large satellite networks with thousands of smaller satellites in low Earth orbit, creating a highly redundant and resilient system. To truly disrupt communications, there must be a way of disrupting thousands of satellites, thereby drastically increasing the cost of such an attack. This system is strengthened by the fact that companies such as SpaceX can quickly and cheaply reconstitute the system by launching new satellites if the system were physically attacked.

Further, despite the ability of states and potentially others to jam and disrupt megaconstellations, SpaceX has proven particularly adept at working around such operations.³⁰ While there would likely be some possibly major problems in terms of dealing with debris from such an attack, taking out a portion of Starlink satellites would not end the battle.

At the moment, this puts China at a disadvantage not only because of increased costs but also because it does not have a similar system on which to rely. In further support of the CSSD, China is developing plans for its own megaconstellation, Guowang, operated

28. Antony Blinken (@SecBlinken), "We took action today to advance Internet freedom . . .," Twitter, September 23, 2022, 10:04 a.m., <https://twitter.com/>.

29. Brett Tingley, "Eutelsat Accuses Iran of Jamming 2 Persian-Language Broadcast Satellites," Space.com, October 7, 2022, <https://www.space.com/>; and Patrick Howell O'Neill, "Russia Hacked an American Satellite Company One Hour before the Ukraine Invasion," *MIT Technology Review*, May 10, 2022, <https://www.technologyreview.com/>.

30. Michael Kan, "Pentagon Impressed by Starlink's Fast Signal-Jamming Workaround in Ukraine," PCMag.com, April 21, 2022, <https://www.pcmag.com/>.

by a state-owned enterprise (SOE) called SatNet.³¹ There is some skepticism in China about the need for such a system, given the widespread use of 4G and 5G cellular networks across the country, including rural regions. Nevertheless, it has received strong support from the Chinese Communist Party (CCP).³² Given the potential for megaconstellations to “reshape global networks,” according to one report, the party has thrown its support behind its development not only to further its economic goals at home and abroad but also to have a hand in setting global norms and standards.³³

The increased interest in a homegrown commercial megaconstellation is consistent with China’s growing encouragement of commercial space. In 2014, seeing the impact of commercial space companies in the West, the CCP adopted a new policy supporting such business activity in its own backyard. On its own, this decision suggests the Chinese government sees the value of commercial space and the need to take advantage of it. Notwithstanding the lack of transparency and data, the number of space companies in China has increased, with one analysis placing the number at 78 in 2019.³⁴ And although limited, the data clearly affirms that many of these companies maintain close ties with the state. If they are not SOEs themselves, then they have been founded by former government employees or depend to a significant extent on government funding.

Such ties with the government should not be a surprise. Yet why would the CCP want to encourage such activity when the government intends to keep such a close hold of it? Even beyond the continued difficulty in understanding China’s intentions in commercial space, analysts have identified strikingly familiar motivations: economic development, national pride and geopolitical standing, the potential for spin-offs, and technological breakthroughs.³⁵ While these motivations mirror those of the United States, the very fact Chinese leaders feel the need to create and encourage such a market is itself evidence that they see commercial space as an area of competition. To not promote the commercial space industry would thus put the country at a significant disadvantage.

Even in the United States, while some limitations are placed on commercial space companies—such as the quality of imagery available for purchase—policymakers increasingly recognize the need to continue supporting commercial space developments in continuing competition with China. Indeed, amid calls from elected officials to continue to compete with China in low Earth orbit, NASA is supporting the construction of a commercial space station to replace the International Space Station

31. Makena Young and Akhil Thadani, *Low Orbit, High Stakes: All-in on the LEO Broadband Competition* (Washington, DC: Center for Strategic and International Studies [CSIS], December 2022), <https://csis-website-prod.s3.amazonaws.com/>.

32. Frank Chen, “China Launching State Rival to Elon Musk’s SpaceX,” *Asia Times*, November 17, 2020, <https://asiatimes.com/>.

33. Young and Thadani, *Low Orbit, High Stakes*.

34. Liu et al., *Space Sector*.

35. Liu et al., *Space Sector*; and Secure World Foundation, in partnership with the Caelus Foundation, *The Sino-US Space Commercialization Dialogues 2019–2021* (Broomfield, CO: Secure World Foundation, August 2022), <https://swfound.org/>.

when the program ends.³⁶ The impact of commercial space assets in Ukraine has further encouraged members of Congress to support additional development.³⁷

US Space Force leaders repeatedly comment on the strength and potential of the commercial space industry in public, and the organization has moved to make it easier to leverage such opportunities.³⁸ Along with increased military interest in commercial space, the National Reconnaissance Office has increased the number of contracts available to commercial imagery services to supplement government-owned systems.³⁹

More broadly, like China, the United States has also elevated issues of economic security to national security, reinforcing the importance of commercial space in the broader economic context. In addition to moves during the Trump administration to protect American industries and limit the influence of Chinese companies like Huawei and ByteDance—the Beijing-based owners of TikTok—in 2022, the Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act was signed into law to encourage domestic production of semiconductors, protect supply chains, and increase investment in science and technology to specifically compete with China.⁴⁰

It is clear the United States and China both recognize the value in economic security generally but the commercial space industry specifically and have acted in ways to encourage its growth and fully utilize its flourishing capabilities. At the same time, commercial space impacts the security environment and balance between the two countries, leading to the tit-for-tat maneuvering of the security dilemma. Given this familiar spiraling pattern, theories about the traditional security dilemma may provide some insight on what to expect moving forward. At the same time, however, the differences between a commercial space security dilemma and traditional security dilemma suggest there might be some unique implications as this dynamic plays out in the space domain.

Implications

Potential Benefits

Given that a commercial space security dilemma is emerging between the United States and China, one might argue it represents a better dilemma to have than a traditional arms race. The costs of supporting and developing a commercial space industry

36. National Aeronautics and Space Administration (NASA), “NASA Selects Companies to Develop Commercial Destinations in Space,” press release, NASA, December 2, 2021, <https://www.nasa.gov/>.

37. Theresa Hitchens, “Space Force Should Heed Ukraine Lessons as It Revamps Structure: CSO Nominee Saltzman,” *Breaking Defense*, September 13, 2022, <https://breakingdefense.com/>.

38. Sandra Erwin, “Private Industry Aims to Fill Demand for Space Threat Intelligence,” *SpaceNews*, September 18, 2022, <https://spacenews.com/>; and Erwin, “Space Force Looking to Ease Barriers to Entry Commercial Companies,” *SpaceNews*, April 4, 2022, <https://spacenews.com/>.

39. Theresa Hitchens, “NRO Keeps 3 Vendors for Commercial Imagery with New 10-Year Contracts,” *Breaking Defense*, May 25, 2022, <https://breakingdefense.com/>.

40. Kevin Breuninger, “Biden Signs China Competition Bill to Boost US Chipmakers,” *CNBC*, August 9, 2022, <https://www.cnbc.com/>.

are the time and effort invested in writing appropriate legislation and regulations and enforcing them, rather than in building physical weapons that pose existential threats. While qualitative arms races might spur some technological developments, a commercial space security dilemma adds an additional dimension of economic and technological competition that may in fact result in more far-reaching benefits.

Additionally, space capabilities such as Starlink provide growing economic and socioeconomic value to the world. These additional connections between people and states may even contribute to a decreased willingness to engage in conflict in space given the value especially to the global economy.⁴¹ In the long run, focusing on space assets with economic value may be far cheaper than building and maintaining weapons that may never be used. Arguably, if a security dilemma is to be had, a commercial space race may be the preferable alternative to a traditional arms race.

So Much Winning

While both the United States and China recognize the value in fostering a commercial space industry, the United States may be better placed to win a battle between the markets. The United States' democratic and capitalist-based system has enacted legislation and regulations that support the rapid advancement of commercial space.⁴² To date, China lacks such a framework, making it far more difficult for companies to know what they are allowed to do, how to go about doing it, and who is in charge. Further, Chinese SOEs (and even non-SOEs) must act in accordance with CCP desires, potentially limiting the possibility for true technological innovation. The relatively favorable economic and political systems will continue to give the United States an advantage.

Loss of Industry Partners

Despite the importance of government contracts to commercial space companies, the potential for conflict might make them less likely to offer services to the government. If companies believe their space systems may be subject to a variety of attacks, they may withdraw from that segment of the market altogether or increase prices to negate any cost savings. Given the United States' growing dependence on commercial space services, there is evidence officials are concerned about such a thing happening with leaders now considering ways to indemnify space companies in the case of conflict.⁴³

41. Whitman Cobb, *Privatizing Peace*.

42. Wendy N. Whitman Cobb, "Commercialization and Space: Democracies Can Fly in Space," *Astropolitics* 19, no. 1–2 (2022).

43. Michael Marrow, "DOD Considering Indemnification for Commercial Space Vendors, Officials Say," *Inside Defense*, September 15, 2022, <https://insidedefense.com/>.

Deterrence

Finally, as Russia and China become increasingly adversarial, how commercial space fits into emerging concepts of deterrence, integrated or otherwise, must be considered. Proliferated constellations operated by private providers augment the resilience and redundancy of US satellite systems, theoretically increasing the costs of any attack and ideally discouraging potential adversaries from attacking. Yet because the primary feature of the commercial space industry is that many actors, individuals or states, have access to it, is it possible to use commercial space systems as a deterrent? While it would be hard to see China buying widespread access to something like Starlink, it is not impossible: in 2019, China bought time on US-made satellites via private equity groups.⁴⁴

On a strategic level, it may be worth considering whether allowing China and other potential adversaries to buy American-based space services may be an advantage of sorts. Making China or Russia dependent on an American provider not only would provide some leverage and potentially control, but also perhaps more importantly would deter them from attacking such systems given their use of it. At the same time, as SpaceX's limiting of Starlink in Ukraine demonstrates, commercial companies may be more vulnerable to adversary coercion, thereby limiting the availability of commercial services in times of conflict. Therefore, analyses of and plans for deterrence and coercion must be extended to include these commercial actors as well.

Recommendations

There is clearly a global desire to continue providing space-based services, particularly since the global economy is largely dependent on them. Thus, any means of breaking the spiral will not be able to necessarily limit the presence, growth, or capabilities of space companies.

Because governments currently dominate the space market, the first measure might be to encourage the growth of space markets and the presence of customers other than government. This would give companies the ability to decline government contracts while still innovating, providing economic benefits, and making a product. At the same time, growing the market and encouraging greater interdependence between countries, companies, people, and space can further increase the costs of conflict in space, thereby discouraging states from engaging in such conflict.

Alternatively, states may look for ways to fully integrate commercial companies into the global system and give them an official seat at the table, so to speak. Although some companies and industries participate on the world stage as official observers, under the Outer Space Treaty, commercial companies are still responsible to the state in which they operate from. If companies were given legal standing in international organizations and legal regimes, however, several beneficial consequences for the CSSD may follow.

44. Brian Spegele and Kate O'Keeffe, "China Exploits Fleet of US Satellites to Strengthen Police and Military Power," *Wall Street Journal*, April 23, 2019, <https://www.wsj.com/>.

For one, commercial companies may work with like-minded states to negotiate rules of behavior for outer space, especially at a time when efforts in space diplomacy have turned from establishing binding instruments such as treaties and potential limits to technology to setting more flexible behavioral rules of the road and behavioral norms. While collaboration on rules of the road would be good on its own, the fact that commercial companies are now dominating operations in space means they would also be able to enforce them.

For example, bans on certain types of weapons—given that a sufficient definition of such weapons is agreed on—may be enforceable because companies would reject launch contracts from governments to put them in orbit. Weapons bans could be avoided were states to develop a nationally owned and operated space launch capability; however, such a capability would take several years and a significant investment of money, meaning states would remain reliant on commercial companies in the meantime. Similarly, commercial companies like SpaceX are actively establishing such rules when they choose to move—or not move—satellites. While companies may not be incentivized to turn down launch contracts today for reasons already discussed, giving them an independent power base and legal standing might provide the motivation.

Conclusion

These implications and recommendations reinforce the notion that the commercial space security dilemma is an arms race of a nature different from the classic security dilemma. Rather than a race that primarily involves military activity and government actors, it is one that prominently features nonstate actors with their own motivations and ambitions, operating in a domain with its own unique challenges. Further, it is a dilemma that necessarily entails economic activity, which in a globalized world has become increasingly important to national security.

If the commercial space security dilemma is to be resolved, it will require different types of actions and methods to build trust between the United States and China and to better integrate commercial actors into the international legal regime. Understanding the unique dynamics and implications of the CSSD will be even more important in the near-to-midterm, as plans to build outposts on the Moon and Mars will necessarily involve both state and commercial actors. A third player to this security dilemma, in the form of the collective of commercial actors themselves, may be added with such future ventures. It will likely be far easier to resolve the commercial space security dilemma on Earth before it is transferred to the stars. **Æ**

**MORAL INJURY TO
THE STATE**
**US Security Policy and Great
Power Competition**

BRENT A. LAWNICZAK

The United States has pivoted its foreign policy focus from a fight against global terrorism to great power competition with China. One interpretation for this recent shift is an experience of national moral injury. Drawing from the fields of psychology and international relations, this article advances the argument that the global war on terrorism—specifically the instances of strategic failure in Iraq and Afghanistan—has caused the United States moral injury. Accordingly, the United States seeks to reduce the resulting anxiety through avoidance behavior and the reinforcement of US state identity by seeking a concrete object of fear in the form of China. Acknowledging the potential effects of moral injury on the United States is important for making national security decisions unencumbered by a potentially inflated fear of China and a flawed view of US state identity.

The United States first made its strategic “pivot to the Pacific” in 2011 under the Obama administration, the same year that the US military withdrew from Iraq.¹ While some proclaimed the pivot “dead” during the Trump administration, now, post-Afghanistan, the strategic focus on the Indo-Pacific region and emphasis on China as the “pacing threat” for the United States have never been stronger.² The focus on threats from peer and near-peer competitors, particularly China, risks compromising the United States’ role as a world power with global, rather than regional, interests.³

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1. Christopher Woody, “The US Military Is Planning for a ‘Transformative’ Year in Asia as Tensions with China Continue to Rise,” *Business Insider*, December 22, 2022, <https://www.businessinsider.com/>.

2. Aaron Mehta, “‘Pivot to the Pacific’ Is Over, Senior U.S. Diplomat Says,” *Defense News*, March 14, 2017, <https://www.defensenews.com/>; Woody, “‘Transformative’ Year”; Jim Garamone, “Official Talks DOD Policy Role in Chinese Pacing Threat, Integrated Deterrence,” DoD, June 2, 2021, <https://www.defense.gov/>; Joseph R. Biden Jr., *National Security Strategy* (Washington, DC: White House, October 2022); and Lloyd J. Austin III, 2022 *National Defense Strategy* (Washington, DC: Office of the Secretary of Defense, October 2022).

3. Richard Fontaine, “What the New China Focus Gets Wrong,” *Foreign Affairs*, November 2, 2021, <https://www.foreignaffairs.com/>.

This hyperfocus on one region abdicates a necessary global perspective. Additionally, making more of the threat of China than it is risks overreaction, which often leads to increasing, rather than easing, tensions.⁴ Publicly exaggerating the threat China poses to the United States also provides China power.⁵ This may be a form of power derived from fear, but it is influential nonetheless. Each of these issues erodes US power and political capital, and increases risk vis-à-vis China and other nations.

Given the dramatic swing from fighting a protracted global war on terrorism to this return to great power competition subsequent to US strategic failures in Iraq and Afghanistan, an examination of the US psyche—or state identity—post-Iraq and Afghanistan, and subsequent motives for foreign policy decisions is in order. Whereas China is clearly a global competitor of the United States, the threat China poses to the United States and its interests may be overstated.

The concept of moral injury applied to the US experience in Iraq and Afghanistan helps to explain this foreign policy shift and provides insight into potentially irrational and damaging US behavior directed toward China or other actors on the international stage. The results of moral injury may lead the United States to exaggerate the threat posed by China and act in ways that increase rather than decrease that threat, resulting in a security dilemma. This dilemma suggests that when states act to ensure their own security, such behavior automatically threatens other states that cannot know the difference between offensive or defensive security measures. Other states then respond to increase their own security, creating a spiral of events that neither state intended.⁶

A significant impetus for the increased US fear of China has been China's rapid economic and military rise, its increased flexing of its economic and military might in the Pacific region, and its expanded involvement in South America, Africa, and even the Arctic. Yet this assessment is incomplete without an evaluation of US interests and motivations for its security policies.

American policymakers should reflect on the perception that a renewed and intense focus on China after a disastrous withdrawal from America's longest war might be motivated in part—consciously or subconsciously—by moral injury suffered by the nation after fighting two simultaneous counterinsurgencies and failing. The dramatic success in the 1991 Gulf War was key in healing the US psyche after the failure of Vietnam, at least for foreign policymakers and the Department of Defense.⁷ Consideration should be given to the notion that another such palliative is desired and being sought with current foreign policy and national defense decisions.

4. Michael E. O' Hanlon, "Getting China Right: Resoluteness without Overreaction," Brookings (website), June 2023, <https://www.brookings.edu/>.

5. See for example Thomas C. Schelling, *Arms and Influence* (New Haven, CT: Yale University Press, 2008), 62.

6. See Robert Jervis, "Cooperation under the Security Dilemma," *World Politics*, 30, no. 2 (January 1978).

7. "George H. W. Bush Proclaims a Cure for the Vietnam Syndrome," *Voices and Visions* (blog), March 1, 1991, <http://vandyreader.org/>; and see also E. J. Dionne, "Kicking the 'Vietnam Syndrome,'" *Washington Post*, March 4, 1991, <https://www.washingtonpost.com/>.

This article is not intended in any way to diminish the very real effects of moral injury on military veterans at the individual level. The resultant effects of such injury are as much or more damaging to the individual and those close to them, and recovery is certainly difficult. This article will defer to a previous issue of the journal to define in depth the concept of moral injury and address important related aspects in greater detail. Instead, this article will address the significant potential effects of moral injury to the psyche and identity of a nation, and how those damaging effects might impact future foreign policy choices in the form of national strategies. While a nation suffering collective moral injury may desire to heal, the behaviors that result from that injury, particularly, the creation or exaggeration of a threat, are actually obstacles to healing.

Moral Injury Defined

Concisely put, moral injury “is the distressing psychological, behavioral, social, and sometimes spiritual aftermath of exposure” to traumatic events.⁸ Moral injury often results from an act of commission or omission which “goes against an individual’s values and moral beliefs.”⁹ It is important here to understand that moral injury itself is the actual “distress that individuals feel when they perpetrate, witness or fail to prevent an act that transgresses their core ethical beliefs.”¹⁰ As one international relations study notes, “At its core, moral injury is the consequence of a profound loss of control.”¹¹ The focus herein is less on the traumatic events causing the moral injury and more on the actual distress felt by a state as a collective of individuals—here, the United States—and the potential attendant behaviors and foreign policy responses that follow such injury.

State Susceptibility to Moral Injury

International relations scholarship commonly recognizes and treats states as unitary actors.¹² The focus of these scholars is not in proving this claim, but in relying on that assumption in order to advance propositions about choices states make. This model for state characteristics and behavior, though not perfect, has demonstrated durability in political science. States as a collective of individuals

8. Sonya B. Norman and Shira Maguen, “Moral Injury,” PTSD: National Center for PTSD, US Department of Veteran Affairs, July 26, 2021, <https://www.ptsd.va.gov/>.

9. Norman and Maguen.

10. Edgar Jones, “Moral Injury in a Context of Trauma,” *British Journal of Psychiatry* 216, no. 3 (March 2020): 127, <https://doi.org/>.

11. Jelena Subotic and Brent J. Steele, “Moral Injury in International Relations,” *Journal of Global Security Studies* 3, no. 4 (October 1, 2018): 390, <https://doi.org/>.

12. Kenneth N. Waltz, *Theory of International Politics* (Long Grove, IL: Waveland Press Inc., 1979); Alexander Wendt, “Anarchy Is What States Make of It: The Social Construction of Power Politics,” *International Organization* 46, no. 2 (1992); Robert O. Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy* (Princeton University Press, 2005); and Alexander Wendt, “The State as Person in International Theory,” *Review of International Studies* 30, no. 2 (2004).

more or less exhibit the characteristics of individuals. Additionally, “state actions in the foreign policy realm are constrained and empowered by prevailing social practices at home and abroad.”¹³

Thus, it is possible to extend moral injury theory and resultant behaviors to the national and international environments: “The ‘state as person’ has heuristic value insofar as it indexes real aspects of the ways in which states operate in world politics.”¹⁴ Indeed scholars and commentators today theorize the state and/or its collective population can suffer moral injury—knowingly or unknowingly—in a manner similar to that of an individual, and subsequently may manifest behaviors at the national and international level that have been observed in individuals who have suffered moral injury, such as avoidance and creation or exaggeration of a threat, leading away from anxiety and toward fear.¹⁵ And, much like the effects of moral injury on an individual, moral injury can be unintended and even unidentified. Moreover, moral injury thus leads to an identity crisis of sorts for the state.

Ultimately, the potential effects of moral injury at the national scale are worthy of close scrutiny. Such effects of moral injury impact subsequent foreign policy decisions.

It is therefore reasonable to maintain that the United States, suffering from the effects of moral injury as a result of military and strategic failures in Iraq and Afghanistan, and desiring to alleviate the resulting anxiety, would intentionally attempt to produce an international structure that would allow it to be successful in the future. Evidence of collective moral injury includes the rapid strategic shift away from the Global War on Terror, including the sudden elimination of much of the counterinsurgency literature and focus from professional military education curricula. If the United States shifts from a focus on global terrorism toward a structure defined by great power competition, the international structure, insofar as it pertains to US perceptions of and actions within that structure, will better conform to its historical strengths.

State Identity and Ontological Security

The concept of state identity entails a state’s deeply held ontological beliefs upon which it bases its interests in international politics. In a constructivist understanding of state identity, states—as actors or agents—and international structures

13. Ted Hopf, “The Promise of Constructivism in International Relations Theory,” *International Security* 23, no. 1 (1998): 179.

14. Jennifer Mitzen, “Ontological Security in World Politics: State Identity and the Security Dilemma,” *European Journal of International Relations* 12, no. 3 (September 2006): 352, <https://doi.org/>.

15. Subotic and Steele, “Moral Injury”; Rita Nakashima Brock and Kelly Brown Douglas, “Can We Heal the Moral Injury of Our Nation?,” *Hill* (blog), January 8, 2022, <https://thehill.com/>; and Daniel Rothenberg, “Moral Injury and the Lived Experience of Political Violence,” *Ethics & International Affairs* 36, no. 1 (2022), <https://doi.org/>.

“are produced or reproduced by what actors do.”¹⁶ In other words, state identity is socially constructed and informs the state’s view of itself in terms of other actors.¹⁷ Moreover, a state will act in accordance with its perceived identity, role, and status in the international community.¹⁸

In line with this constructivist framework, state identity plays a key role in determining state interests.¹⁹ These perceived interests guide foreign policy choices as states act in ways that are “appropriate” to the current situation and state-to-state relationships based on a given identity.²⁰ This identity is theorized to be essential for providing predictability and order in international relationships.²¹ In turn, the identity-based need for predictability and order can affect the behaviors—that is, foreign policies—of a state when it is disrupted by moral injury.

A concept closely related to state identity is that of ontological security. State identity is important not only for defining state interests, but also in defining the state’s own perception of itself and its appropriate role in the world. Ontological security is defined as “security not of the body but of the self, the subjective sense of who one is, which enables and motivates action and choice.”²² Some scholars posit states seek ontological security in addition to physical security, and some also argue some states pursue physical security to ensure ontological security.²³

A state seeks ontological security to provide stability and continuity over time.²⁴ A state may even seek the routinization of security dilemmas—perhaps manifesting as arms races—not only because it seeks physical security, but also because it desires ontological security, manifested in the stability of state identity vis-à-vis another state, which reduces uncertainty.²⁵ A state may also establish narratives as part of these routinization efforts in order to regain a perception of control.²⁶

The wars in which the United States had been involved for the last two decades had a particularly notable impact on the incidence of moral injury among the US population,

16. Alexander Wendt, “Collective Identity Formation and the International State,” *American Political Science Review* 88, no. 2 (1994): 390.

17. Wendt, “Anarchy,” 396–97.

18. Brent A. Lawnczak, *Confronting the Myth of Soft Power in US Foreign Policy* (Lanham, MD: Lexington Books, 2022), 33–35.

19. Wendt, “Anarchy,” 398.

20. James G. March and Johan P. Olsen, “The Logic of Appropriateness,” in *The Oxford Handbook of Political Science*, ed. Robert Goodin (Oxford, UK: Oxford University Press, 2011).

21. Hopf, “Promise of Constructivism,” 174.

22. Mitzen, “Ontological Security,” 344; and see also Bill McSweeney, *Security, Identity and Interests: A Sociology of International Relations* (Cambridge, UK: Cambridge University Press, 1999).

23. Mitzen, “Ontological Security,” 342; and Nina C. Krickel-Choi, “The Embodied State: Why and How Physical Security Matters for Ontological Security,” *Journal of International Relations and Development* 25, no. 1 (2022).

24. Mitzen, 344.

25. Mitzen, 361.

26. Subotic and Steele, “Moral Injury,” 391.

particularly members of the military.²⁷ Applying a constructivist framework, one can argue the United States has endured moral injury following the strategic failures of the US involvement in Iraq and Afghanistan.

In addition to the negative military, political, and sociological effects that have resulted from the counterinsurgency and nation-building wars the United States fought in those places, the very fact that the United States started the war in Iraq, unlike many wars it has successfully fought in the past, adds to the potential for moral injury on a national scale. Its break with long-standing, if unwritten, national policy of not beginning offensive wars—which is also contradictory to the norms that characterize US state identity—is likely a key element in setting the country up for moral injury.²⁸

The ambiguity of US strategy in Afghanistan, the fact that it was the longest war in the history of the country, and the rapid manner in which the Taliban reestablished control, all likely have similar implications for moral injury to the nation. These include avoidance behavior, which manifested in the rapid exit from Afghanistan and a policy shift away from counterinsurgency and nation-building. Moral injury also manifests in the need to alleviate anxiety through the creation or exaggeration of a concrete source of fear in the form of China.

Yet, rather than bending its identity and ensuing interests to suit a changing global dynamic, can a powerful state like the United States instead attempt to shift the global playing field back toward one in which it previously experienced most of its perceived success? A quest for ontological security would suggest this as a plausible course of action for a United States suffering from moral injury. The concept of ontological security holds that the security of a state's identity is threatened by uncertainty more than fear.²⁹ Further, "such uncertainty can make it difficult to act, which frustrates the action-identity dynamic and makes it difficult to sustain a self-conception."³⁰

Uncertainty can create anxiety, something that causes a state to struggle and seek certainty, a common behavior resulting from moral injury. Outward aggression is not an automatic outcome of a national quest for ontological security. Whether a state reacts aggressively toward a perceived threat or retreats from that threat and takes up an isolationist posture will depend on the state identity that manifests as a result of the interaction with the threatening state or other relevant states.³¹

27. Brett T. Litz et al., "Moral Injury and Moral Repair in War Veterans: A Preliminary Model and Intervention Strategy," *Clinical Psychology Review* 29, no. 8 (December 2009): 697, <https://doi.org/>.

28. Robert Jervis, "Understanding the Bush Doctrine," *Political Science Quarterly* 118, no. 3 (2003); and Frontline PBS, "Analyses: Assessing The Bush Doctrine – The War Behind Closed Doors," accessed January 7, 2023, <https://www.pbs.org/>.

29. Mitzen, "Ontological Security," 342.

30. Mitzen, 345.

31. See Brent Steele, "Ontological Security and the Power of Self-Identity: British Neutrality and the American Civil War," *Review of International Studies* 31, no. 3 (2005).

Resultant Behaviors Associated with Moral Injury

There are multiple forms of behavior that are thought to result from individual moral injury. Some of these include problems trusting others, avoidance behaviors, “feelings of shame and guilt,” “alterations in cognitions and beliefs,” and “[other] maladaptive coping responses.”³² It is theorized that some individuals experience an existential crisis—questioning their deeply held identity—as a result of moral injury.³³

Because the state is a corporation of individuals, it is likely that state behaviors subsequent to moral injury differ in content and scope from individuals’ in terms of specific outcomes. Still, there are at least two forms of individual response to moral injury that may directly relate to state behavior. First, policy choices of a state suffering moral injury can often be indicative of avoidance behavior. Second, because moral injury can lead to a perceived loss of control resulting in anxiety, the state will seek to retain or reclaim its long-standing role in international relations regarding its enduring identity.³⁴ Policy choices and reestablishing long-standing roles in international relations are state-level attempts to reestablish control.

First, it is important to distinguish the concepts of fear and anxiety, as understood in international relations theory, to demonstrate the motivations behind these responses to moral injury. Fear is normally described in concrete terms, such as the fear of a rising state power which can threaten one’s own power and position in the world, or the fear of an adversary’s use of force.³⁵ Anxiety is defined as “a more ambiguous state of unease, an affect that arises when identity is challenged or in flux.”³⁶ A state’s desire to have a perception of control over events, stemming from its need to reduce anxiety, may result in a quest to regain that control and a subsequent congruence between actions and identity.

It has been further hypothesized that as “applied to states,” a quest for “ontological security can conflict with physical security.” It is argued that “even a harmful or self-defeating relationship can provide ontological security, which means states can become attached to conflict.”³⁷ In the simplest of terms, fear is perceived to be more acceptable for the state than anxiety.

This leads to a discussion of the potential response the United States has undertaken after suffering moral injury that has resulted in a state identity crisis. That is,

32. Victoria Williamson et al., “Moral Injury: The Effect on Mental Health and Implications for Treatment,” *Lancet Psychiatry* 8, no. 6 (June 2021): 453, <https://doi.org/>; and “Moral Injury,” DAV [Disabled American Veterans], accessed January 9, 2023, <https://www.dav.org/>.

33. Williamson et al., 454.

34. Subotic and Steele, “Moral Injury,” 390.

35. Subotic and Steele, 388; Shiping Tang, “Fear in International Politics: Two Positions,” *International Studies Review* 10, no. 3 (2008); and Waltz, *International Politics*, 103.

36. Brent Steele, *Ontological Security in International Relations: Self-Identity and the IR State* (London: Routledge, 2008), 51, as cited in Subotic and Steele, “Moral Injury,” 388.

37. Mitzen, “Ontological Security,” 342; and see also Nina C. Krickel-Choi, “State Personhood and Ontological Security as a Framework of Existence: Moving beyond Identity, Discovering Sovereignty,” *Cambridge Review of International Affairs*, August 9, 2022, <https://doi.org/>.

in seeking to reduce anxiety through avoidance behavior, America has turned away from a more extensive postwar examination of the potential lessons that could be learned from two decades of counterinsurgency and nation-building and reverted to the relative stability and predictability of great power competition, thus replacing anxiety with fear. This does not mean that the pursuit of physical security is always and entirely selfish, egotistical, and illegitimate as suggested by pacifist critics. Yet the repercussions of moral injury to the state, including avoidance behavior and the tendency to exaggerate fear in order to alleviate anxiety, must be considered when making foreign policy decisions related to a threat that arises subsequent to that moral injury elsewhere.

Source and Effect of US Moral Injury

The long campaign against global terrorism, particularly the wars in Iraq and Afghanistan, has created an identity crisis for the United States.³⁸ The shifting or ambiguous strategic goals of the campaign, along with many other domestic and global factors, have called into question the ability of the United States to win wars. Additionally, these wars and strategic failures destabilize the perception of “US exceptionalism and benevolent hegemony,” which serve as central features of US state identity.³⁹ Such “deep insecurity renders the [state’s] identity insecure.”⁴⁰

As discussed above, one result of this moral injury is avoidance behavior. Therefore, moral injury suffered by the United States in Iraq and Afghanistan can arguably be considered as a reason for the dramatic—and some would argue, myopic—shift to China as the main threat to US and international security. Due to anxiety resulting from the perception it cannot win wars and its compromised identity based in benevolent hegemony and exceptionalism, the United States has been “motivated to create cognitive and behavioral certainty . . . by establishing routines.”⁴¹ One routine that fosters stability of US identity is great power competition, in this case with China.

Moral injury to the identity of the United States, likely not the sole reason for such a significant foreign policy shift to great power competition with China, should be carefully considered as a potentially destructive influence on foreign policy. As noted, moral injury leads to the avoidance of issues that require attention but that the injured may desire to eschew. More significantly, perhaps, is the tendency for the injured to exaggerate threats in the attempt to alleviate anxiety by focusing on a concrete source of fear.

38. Subotic and Steele, “Moral Injury,” 387.

39. Subotic and Steele, 387; see also G. John Ikenberry, “Institutions, Strategic Restraint, and the Persistence of American Postwar Order,” *International Security* 23, no. 3 (1999), <http://www.mitpressjournals.org/>; Ikenberry, *After Victory: Institutions, Strategic Restraint, and the Rebuilding of Order after Major Wars*, new ed. (Princeton, NJ: Princeton University Press, 2019); and Robert Kagan, “The Benevolent Empire,” *Foreign Policy*, no. 111 (1998), <https://doi.org/>.

40. Mitzen, “Ontological Security,” 342.

41. Mitzen, 342.

These effects of moral injury suffered as a result of national strategic failures in the Global War on Terror create a difficult situation for the United States. Policymakers may perceive the need to select one of two basic options: a change in the state's perception of the strategic environment or a change in its deeply held state identity. In the present case, due to the anxiety resulting from national moral injury, the United States has returned to a well-known paradigm of state-on-state competition. The focus on a near-peer state actor provides US policymakers with a shift in the strategic environment toward a well-understood strategic dynamic in which the United States has previously been successful, if not dominant. This focus also avoids the difficult work of altering the US national identity.

The shift back to great power competition, and viewing China as a threat in particular, provides the United States ontological security and a more predictable international environment; moreover, this move ensures a desirable state identity. Rather than seeking to understand or change the rules of the game being played—global war on terrorism, counterinsurgency, nation-building—a game that has resulted in national moral injury, the United States has determined to change the game itself. The one at which it has succeeded is that of state-on-state conflict—hence, the United States has decided to return to the well-established international game with its return to great power competition.

One scholar has advanced the potential of the “Thucydides Trap” in terms of US–China relations.⁴² Simply put, conflict or war between two great powers is inevitable for no other reason than each party views the other as a potential enemy. Because one views the other as an enemy, it treats it as such, creating a security dilemma in which the actions of the other state create fear in one's own state. When it comes to moral injury, “agents develop . . . narratives as routines to gain some sense of control over themselves and within their environment.”⁴³

Rather than great power competition being a symptom of the global environment and the rise of China, through narratives—routines—the United States is unwittingly entering a Thucydides Trap: viewing and treating China as an enemy makes China respond as an enemy. This will increase fear, but by placing China in position as the pacing threat, it also reduces anxiety for the United States by identifying a clear and recognizable adversary rather than coping with the intangible nature of global terrorism.

Reducing anxiety is most relevant for one who suffers from moral injury even at the expense of increasing fear. Accepting the premise of this trap and cementing it in US foreign policy also has the additional benefit of impacting the “agency of others . . . in predictable ways,” which is also theorized as an important response to moral injury.⁴⁴ In this case, the desired effect is to influence China to behave in the ways predicted by

42. Graham Allison, “The Thucydides Trap: Are the U.S. and China Headed for War?,” *Atlantic*, September 24, 2015, <https://www.theatlantic.com/>; and John J. Mearsheimer, “China's Unpeaceful Rise,” *Current History* 105, no. 690 (2006): 160–62, <https://doi.org/>.

43. Subotic and Steele, “Moral Injury,” 391.

44. Subotic and Steele, 391.

the theory and expected by the United States, responding appropriately as a competitor and threat.

Many authors have drawn direct connections between the behavior of Russia of late and the potential of a rising China in the near future.⁴⁵ The potentially exaggerated emphasis on and theoretical overextension of the Russian war in Ukraine to a China-Taiwan scenario enable US policymakers to point to Russia and claim that its actions are indicative of the return to great power competition. That is, the real threat to national security is only from other great powers.

Yet, if Russia is a great power—a debatable proposition, nuclear weapons notwithstanding—it is a threat only to lesser powers. It is thought that these supposed great powers are the only ones that can truly challenge national sovereignty and are thus to be the focus on national strategic thinking from now on. While Russia is not as feared by the United States as is China, its overt military aggression in Ukraine is used as supporting evidence that great power competition is alive and well in the world. Moreover, China, having a more powerful economy and possibly military, is seen as an even greater threat than Russia. Russia's willingness to act aggressively is possibly being used as evidence by some that China will follow with even worse results for the United States.

The US amplification of the Russian threat based on Russia's war in Ukraine likely serves a purpose in addition to the defense and promotion of democracy and self-determination largely proclaimed by the press, pundits, and policymakers in the United States. Certainly, the Russian aggression in Ukraine was not a US invention to aid it in dealing with moral injury incurred in Iraq or Afghanistan. Yet the potential for exaggerating the threat to the level of one existential to the United States should be considered. In the context of moral injury to the United States, the Russia-Ukraine conflict and the tendency of some policymakers to assert similarities to US-China relations serve as evidence to justify a shift away from the failures that cause anxiety by creating a target of fear that alleviates that anxiety.

A Bipolar, Fear-Led World

The United States is shaping a world and national identity with which, some would say, it is better positioned to lead and potentially dominate. The world defined largely by a Global War on Terror has proven to be unpredictable. Great power competition, specifically near-peer global competition with China, provides predictability that assuages the anxiety from an experience of national moral injury: "States might actually come to prefer their ongoing, certain conflict to the unsettling condition of deep

45. Parth Satam, "Defeat Russia In Ukraine to Deter China in Taiwan: Former NATO Boss Says Don't Repeat Putin's Mistake with Xi Jinping," *EurAsian Times*, January 8, 2023, <https://eurasiatimes.com/>; Agence France-Presse, "China Attacking Taiwan Would Be 'Mistake' Like Russia's in Ukraine, US General Says," *VOA [Voice of America]*, November 16, 2022, <https://www.voanews.com/>; and C. Todd Lopez, "China May Draw Lessons from Russian Failures in Ukraine," *DoD*, September 8, 2022, <https://www.defense.gov/>.

uncertainty as to . . . one's own identity."⁴⁶ The United States can revitalize US exceptionalism and benevolent hegemony and heal its moral injury by countering a rising and aggressive China.

As mentioned, a state's preference for ontological security causes it to enter into long-lasting rivalries or persistent conflict.⁴⁷ This overwhelming desire to seek stability—stronger than the desire for cooperation or peace, even in relationships characterized by persistent conflict—makes it difficult to foster change.⁴⁸ Given this understanding, it is reasonable to expect that a United States that has suffered moral injury and seeks to avoid anxiety in international relationships would be willing to accept—possibly even create—an international environment characterized by competition and conflict with China.

Kenneth Waltz has posited that a bipolar international system is the most stable.⁴⁹ Yet it is not stable because it reduces fear, but because it reduces unpredictability and anxiety. A bipolar international system, consisting of just two great powers, makes clear “who is a danger to whom.”⁵⁰ The US perception of its primacy as the sole superpower is slipping in a post-Iraq/Afghanistan world; it is therefore creating or reverting to a bipolar system. The United States does this not because it is the best way to reduce fear, but because it enables it to deal with the moral injury and resulting anxiety and perceived damage to its state identity.

It has also been postulated that one consequence of this avoidance behavior, rooted in the moral injury to the United States resulting from its loss in Iraq, is the rise of “dominance politics, derived from the [US] failures to win and fueled by the need to avoid future humiliations.”⁵¹ These dominance politics have led to “particularly forceful measures,” including US withdrawal from international climate change and Iranian nuclear disarmament treaties, renegotiation of trade relationships, and renegotiation of financial and military commitments to NATO.⁵²

The list should also include the intense focus on China as the main threat to the United States. China as a threat provides “certainty as an expression of control” that is sought by the nation in order to reduce the malign effects of moral injury.⁵³ The need to end the resulting anxiety requires some level of control and certainty. This sense of control can be regained by placing the future in one's own hands even if that certainty

46. Mitzen, “Ontological Security,” 342.

47. Mitzen, 373; and see also Ian Manners, “European [Security] Union: From Existential Threat to Ontological Security,” Copenhagen Peace Research Institute, 2002, <https://lucris.lub.lu.se/>.

48. Mitzen, 343.

49. Waltz, *International Politics*, 161.

50. Waltz, 170.

51. Subotic and Steele, “Moral Injury,” 395.

52. Subotic and Steele, 395.

53. Subotic and Steele, 395; and see also Alan Collins, “Escaping a Security Dilemma: Anarchy, Certainty and Embedded Norms,” *International Politics* 51, no. 5 (September 2014), <https://doi.org/>.

“that the other is a true aggressor” is misplaced.⁵⁴ How better to gain that control and reduce national anxiety than to simply change the game being played to one in which the United States has previously been successful, even dominant?

Implications of Moral Injury for National Security Policy

The impact of moral injury to the United States following the failures in Iraq and Afghanistan may not result in consciously malign foreign policy decisions. The injury itself might not even be recognized by policymakers, especially given the turnover of the commander in chief every four to eight years. Moral injury, as a psychological effect, is likely the result of the interaction of strategic failure over a lengthy period, coupled with the enduring characteristics of US identity and relationships in world affairs. Yet as unintentional as a response such as avoidance or replacement of anxiety for fear may be, the United States must recognize the potential that moral injury exists and can affect foreign policy decisions in significant and potentially negative ways.

An alternate view is that the US reaction to supposed strategic failures can be viewed as intentional. The US withdrawal from a “peripheral interest . . . enables a US (and Western) strategic reset of its foreign policy.”⁵⁵ The return to great power competition—if it previously ended—may have been inevitable.⁵⁶

Perhaps neorealists are right, and after all is said and done, all interstate relationships boil down to physical security. Yet if that were the case, the symptoms, behaviors, and policies that result from moral injury—such as avoidance, anxiety, the quest for ontological insecurity, and the compulsion to behave in ways appropriate to a deeply ingrained state identity—would not manifest in the empirical record. If moral injury were not a factor in foreign policymaking, neorealist-based tracing of state interests to security needs would be rather simple. It is not.

Intentional or unintentional, conscious or subconscious, the behaviors triggered by moral injury provide the potential for a “cognitive cocoon” in which the state resorts to a familiar environment that affords stability, reduces anxiety, and provides some level of predictability.⁵⁷ This article has proposed that the United States is creating more of a formidable enemy of China than it is in reality. Such action is an attempt to create a world congruent with a preferred US identity, which decreases anxiety, even in the face of what is proclaimed to be an existential threat.

The routine of interstate competition has characterized international relations for centuries. It is entirely plausible that the post-9/11 break from this routine may only

54. Subotic and Steele, 395; and Jennifer Mitzen and Randall L. Schweller, “Knowing the Unknown Unknowns: Misplaced Certainty and the Onset of War,” *Security Studies* 20, no. 1 (March 21, 2011): 19, <https://doi.org/>.

55. Graeme Herd, “The Causes and the Consequences of Strategic Failure in Afghanistan?,” George C. Marshall European Center for Security Studies, August 2021, <https://www.marshallcenter.org/>.

56. Thomas Wright, “The Return to Great-Power Rivalry Was Inevitable,” *Brookings* (blog), September 12, 2018, <https://www.brookings.edu/>.

57. Mitzen, “Ontological Security,” 346.

have increased anxiety during the global war on terrorism.⁵⁸ The United States knows and understands a world of great power competition. It became one of the world's greatest powers in the wake of massive interstate conflict at the end of World War II. It reigned as the world's single superpower after the end of the Cold War. Shifting interests back to this familiar ground provides a perception of healing from the moral injury suffered with the failures of Iraq and Afghanistan.

Conclusion

The result of the national moral injury suffered by the United States due to the Global War on Terror has two important implications. First, the important lessons that might be learned from Iraq and Afghanistan will likely be overlooked due to avoidance behavior and a rapid shift of policy focus toward a potentially exaggerated threat. Yet, even in failure, there are valuable lessons regarding the use of force, stabilization efforts, preemptive war, nation-building, international relations, and myriad other topics.

Second, and perhaps more important, China's role as the pacing threat is often overstated. This has already led to a nearly myopic focus of US policies, military planning, force development, and strategies on China. This is to the detriment of many other significant threats the nation faces and areas of interest outside of the Indo-Pacific region.

Moreover, a nearly singular focus on China is shortsighted in terms of national global strategy requisite of a world superpower. Ironically, a warning of such a myopic approach came several years ago from Chinese military analysts: "When a military [puts] excessive focus on dealing with a certain specified type of enemy this can possibly result in their being attacked and defeated by another enemy outside of their field of vision."⁵⁹

US foreign policymakers would be wise to be introspective when determining all of the significant causes of the return to great power competition, including that it at least partially derives from national moral injury. Yet such a level of self-reflection is not likely in the current domestic political environment within the United States. China's malign activities in the Western Pacific certainly do not aid the US development of a response that is unprejudiced by recent moral injury experienced as a result of the Global War on Terror. Even so, US policymakers must simultaneously learn from and deal with the strategic impacts of the wars in Iraq and Afghanistan and certainly approach other threats only for what they are, but no more.

Scholars may aid policymakers through additional examinations of the causes and effects of moral injury to the state. Scholars should then study carefully the cases of Iraq, Afghanistan, and Vietnam as events likely to have resulted in moral injury to the

58. See Mitzen, 347.

59. David Kilcullen, *The Dragons and the Snakes: How the Rest Learned to Fight the West* (Oxford, UK: Oxford University Press, 2020), 209.

United States. Such research should then identify and analyze the significant swings in foreign policy direction following these conflicts. Some shifts may be viewed positively, as they typically are with Vietnam. Yet shifts can also be detrimental to both the short- and long-term interests of the United States, as proposed here regarding the inflation of a threat from China.

Furthermore, the Iraqi invasion of Kuwait provided an opportunity for the United States to project power against a malign state actor and both recover international credibility and ease the effects of moral injury suffered from Vietnam. But the long-term impacts of a decades-long US involvement in Iraq show that there are unknown consequences even when the policy choices that were influenced by previous moral injury seem rational, morally sound, and aligned with state identity at the time.

A detailed analysis of the rationale policymakers provided in these cases to justify foreign policy choices is then needed. Examining what policymakers say to various audiences to gain support for policy shifts is critical to understanding the impact of moral injury as one of several key variables in the calculus of foreign policymaking.

The result of the moral injury of Iraq and Afghanistan has been a resistance to learning about those failures by turning immediately to a different, though familiar, threat. This allows the United States to forget the recent conflicts that caused the injury, and also to decrease the anxiety of a world that proffered little success for the nation on the world stage. Recognition of this moral injury and its influence on subsequent foreign policy decisions is essential in terms of allowing the United States to approach the future with clear eyes. **Æ**

INTEGRATED EMOTIONAL MANIPULATION

Implications of Contemporary Emotion Regulation Science

SAMUEL ZILINCIK

Military and strategic theorists tend to overestimate the practical capacity of kinetic and information operations to manipulate the emotions of the intended audience. A new theoretical perspective rooted in contemporary literature on emotion regulation explains this gap between theory and practice. Kinetic and information operations each influence emotions through different emotion regulation mechanisms. This difference makes it hard to create synergistic effects through the integration of these operations. The emotion regulation perspective challenges existing strategic thought on kinetic and information operations, particularly effects-based operational planning that depends on the elicitation of a single emotion. It also informs the practice of integrating these operations by highlighting the nuances of their proper timing and risk-management.

Can military actors effectively manipulate the emotions of their target audiences when integrating kinetic operations, or operations employing physical force, and information operations, or those involving communication? Some strategic and military thought posits such emotional manipulation is not only possible but also sufficient for overall success. For instance, certain strategic and military theorists have observed that kinetic operations can be employed to scare or generate awe within the target audience and therefore achieve one's objectives.¹ Similarly, deterrence theorists argue it is possible to frighten the adversary's political leadership by the crafty employment of military power alongside diplomatic signaling.² This expectation also holds for information operations. For example, Joint Publication 3-13, *Information Operations*, defines military information support operations as "operations to convey selected information and indicators to foreign audiences to influence their emotions, motives, objective reasoning, and ultimately the behavior of foreign

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1. Michael L. R. Smith and David M. Jones, "What Carl Might Have Said about Terrorism: How Strategic Theory Can Enlighten an Essentially Contested Debate," *Infinity Journal* 6, no. 2 (2018); and Harlan Ullman and James P. Wade, *Shock and Awe: Achieving Rapid Dominance* (Washington, DC: National Defense University, 2006).

2. Austin Long, *Deterrence: From Cold War to Long War* (Santa Monica, CA: RAND Corporation, 2008).

governments, organizations, groups, and individuals.”³ Counterinsurgency theorists assume kinetic and information operations can be combined to create synergistic emotional effects, namely to win the “hearts and minds” of the local population and, therefore, to prevail in a protracted conflict.⁴ Clearly, across the spectrum of theorists dealing with kinetic and information operations, the expectations of effective emotional manipulation conducted for instrumental purposes run high.

Yet the practice of emotional manipulation itself provides reasons for skepticism. Kinetic operations do inspire emotions, but many of them are detrimental rather than instrumental to the overall effort.⁵ Perhaps the most famous example is Japan’s attack on Pearl Harbor, which inspired anger rather than terror among Americans and subsequently increased rather than decreased American willingness to fight.⁶ Additionally, and in contrast to conventional wisdom, evidence that information operations reliably inspire the desired emotions is insufficient, though this stems partly from the difficulty of studying the psychological effects of these operations.⁷

Recent empirical studies have shown information operations can inspire some emotions, though only in specific conditions. One such study, for example, explored emotional reactions by analyzing comments on YouTube videos. Yet in this particular study it was unclear whether the videos themselves inspired or merely intensified the resulting emotions, since individual commenters may have already felt “invested” in the videos’ subject matter.⁸

Another study on the effects of Russian state-sponsored media on international audiences relied on experimental methods and found information operations may inspire some emotions such as anger and/or fear but may have difficulty generating others, such as trust.⁹ Other studies have shown information operations often fail to alter people’s cognitive processes and behavior, implying that even if such operations

3. Chairman of the Joint Chiefs of Staff (CJCS), *Information Operations*, Joint Publication 3-13 (Washington, DC: CJCS, November 27, 2012), II-9–II-10.

4. David Kilcullen, *Counterinsurgency* (New York: Oxford University Press, 2010), 103.

5. Samuel Zilincik, “Awe for Strategic Effect: Hardly Worth the Trouble,” *Journal of Strategic Studies*, advanced online publication, 2022, <https://doi.org/>.

6. John Mueller, “Pearl Harbor: Military Inconvenience, Political Disaster,” *International Security* 16, no. 3 (1991).

7. Aiden Hoyle et al., “Grey Matters: Advancing a Psychological Effects-Based Approach to Countering Malign Information Influence,” *New Perspectives* 29, no. 2 (2021); and Matthew H. Goldberg and Abel Gustavson, “A Framework for Understanding the Effects of Strategic Communication Campaigns,” *International Journal of Strategic Communication*, advanced online publication, 2022, <https://doi.org/>.

8. Rhys Crilly and Precious N. Chatterje-Doody, “Emotions and War on YouTube: Affective Investments in RT’s Visual Narratives of the Conflict in Syria,” *Cambridge Review of International Affairs* 33, no. 5 (2020).

9. Aiden Hoyle et al., “Cognitive and Emotional Responses to Russian State-Sponsored Media Narratives in International Audiences,” *Journal of Media Psychology: Theories, Methods, and Applications* 35, no. 6 (2023).

do bring about the desired emotions, these emotions do not effectively serve the instrumental purpose.¹⁰

The integration of kinetic and information operations does not necessarily alleviate the problem. As historical case studies show, in war, the target audience generally feels a variety of unintended emotions in response to kinetic operations, all the while ignoring or being little influenced by information operations.¹¹ Therefore, strategic practice indicates actors struggle to manipulate the target's emotions effectively with either or both kinetic and information operations.

The practice of integrating kinetic and information operations for synergic effects, hereafter referred to as integrated emotional manipulation, has thus proved more difficult than some existing theories indicate. Contemporary emotion regulation literature offers reasons for this gap between theory and practice.

Background

Emotion regulation, as understood in psychology, refers to “attempts to influence which emotions one has, when one has them, and how one experiences or expresses these emotions.”¹² The so-called “process model of emotion regulation” demonstrates the challenge of synchronizing the emotional component of kinetic and information operations, because they regulate emotions through different mechanisms.¹³ Based on this model, kinetic operations regulate emotions in a bottom-up and indirect manner. That is, the conduct of these operations first transforms the outside world, and that transformation may then inspire emotions on the adversary's side. This scenario captures what Stanford psychologist James J. Gross terms situation selection and situation modification mechanisms.¹⁴

In contrast, information operations regulate emotions in a top-down and direct manner. Here, political or military practitioners share information with their targets, and based on this information, the targets may or may not feel emotions. This scenario reflects what Gross refers to as attentional deployment and cognitive change

10. Alexander Lanoszka, “Disinformation in International Politics,” *European Journal of International Security* 4, no. 2 (2019); Hugo Mercier, *Not Born Yesterday: The Science of Who We Trust and What We Believe* (Princeton, NJ: Princeton University Press, 2020); Claes Wallenius, “Do Hostile Information Operations Really Have the Intended Effects? A Literature Review,” *Journal of Information Warfare* 21, no. 2 (2022); and Claes Wallenius and Sofia Nilsson, “A Lack of Effect Studies and of Effects: The Use of Strategic Communication in the Military Domain,” *International Journal of Strategic Communication* 13, no. 5 (2019).

11. Gordon McKelvie, “Fear, Hatred and Strategy during the Wars of the Roses,” *History* 107, no. 374 (2022); and Jonathan Shimshoni, “Swords and Emotions: The American Civil War and Society-Centric Strategy,” *Survival* 64, no. 2 (2022).

12. James J. Gross, “Emotion Regulation: Current Status and Future Prospects,” *Psychological Inquiry: International Journal for the Advancement of Psychological Theory* 26, no. 1 (2015): 5.

13. See Gross.

14. Gross, 7–8.

mechanisms.¹⁵ Since contemporary emotion regulation literature indicates this difference in mechanisms translates into a divergence in emotional outcomes, it is reasonable to expect that kinetic and information operations do not synergize well in terms of their emotional manipulation.¹⁶

This employment of the emotion regulation perspective builds upon and contributes to two ongoing academic debates. The first debate concerns the utility of applying an emotion regulation perspective to understand and navigate social conflicts. Although the literature on emotion regulation originated in psychology, the idea has grown increasingly popular in various social sciences dealing with politics and especially war. Accordingly, scholars from conflict studies, international relations, and even strategic studies have employed this lens to explore their respective subjects of inquiry.¹⁷ This article contributes to that debate by showing how the incorporation of the emotion regulation lens can shed light on the comparative potential of kinetic and information operations to manipulate the emotions of the target audiences in war.

The second debate, positioned at the intersection of strategic studies and military studies, concerns the possibility of integrating kinetic and information operations for synergic effects. In strategic studies, the debate focuses on higher levels of analyses, namely how to effectively use military power alongside other tools, such as propaganda. This so-called grand strategy debate has already yielded some interesting results. For example, combining different instruments of power effectively is inherently difficult because each instrument operates through its unique logic.¹⁸

Meanwhile, military studies scholarship focuses on lower levels of analyses, especially on the opportunities and limitations of integrating kinetic and information operations within specific military operations.¹⁹ The current discussion is equally relevant to both

15. Gross, 8–9.

16. See Gross, 7, 17; Steffen Hartmann, Luise Pruessner, and Sven Barnow, “Contextual Variations in Emotion Polyregulation: How Do Regulatory Goals Shape the Use and Success of Emotion Regulation Strategies in Everyday Life?,” *Emotion*, advanced online publication, September 7, 2023, <https://psycnet.apa.org/>; and Thomas L. Webb, Eleanor Miles, and Paschal Sheeran, “Dealing with Feeling: A Meta-Analysis of the Effectiveness of Strategies Derived from the Process Model of Emotion Regulation,” *Psychological Bulletin* 138, no. 4 (2012): 797.

17. Eran Halperin, *Emotions in Conflict: Inhibitors and Facilitators of Peace Making* (New York: Routledge, 2015); Max Nurnus, “Bringing Emotions Back In: A Study on the Relationship between Power and Emotions in International Relations” (PhD diss., Seoul National University, 2019); and Samuel Zilincik and Ivo Pikner, “Toward the Concept of Psychological Control: Understanding Strategy as an Exercise in Emotion Regulation,” *Strategiein* 3 (2021).

18. Lukas Milevski, *Grand Strategy Is Attrition: The Logic of Integrating Various Forms of Power in Conflict* (Carlisle Barracks, PA: US Army War College Press, 2019), <https://press.armywarcollege.edu/>.

19. Harry Kemsley, “Air Power in Counter-Insurgency: A Sophisticated Language or Blunt Expression?,” *Contemporary Security Policy* 28, no. 1 (2007); Jordan Stern, “Civil Military Operations & Military Information Support Operations Coordination: A Non-Kinetic Ballast for Disciplined Counterinsurgency Operations,” *Small Wars Journal*, November 1, 2011, <https://smallwarsjournal.com/>; and Larry K. Wentz and Lee W. Wagenhals, *Integration of Information Operations into Effects-Based Operations: Some Observations* (Fairfax, VA: George Mason University, 2003).

aspects of the debate because its argument is not bound to a specific level of analysis. It advances the debate by focusing on the specific, emotional aspect of integrated operations rather than analyzing these operations in general, as the majority of the existing literature does.

Emotion Regulation - Process Model

Contemporary emotion regulation literature assumes people can, purposefully or accidentally, regulate their own emotions or those of others, meaning they can influence the intensity, duration, and even quality of all emotions.²⁰ Psychological research on emotion regulation has been flourishing since the late 1990s, focusing mostly on the questions of why and how individuals influence their own emotions.²¹ Gross' process model of emotion regulation has gained significant traction even beyond psychology because it can effectively explain how people modulate their emotions in broader social settings.

As Gross explains, the process model assumes that when an emotion emerges, it goes through four phases. Emotions start forming when people encounter a situation they find relevant. The second phase occurs as the situation grabs their attention. In the third phase, individuals evaluate the situation, focusing on the aspects of the situation that garnered attention. This evaluation process determines which specific emotions emerge, depending on the meaning people derive from the situation. During the final phase, individuals undergo appropriate physiological changes in accordance with the characteristics of the particular emotion.²²

Consequently, Gross distinguishes several distinct emotion regulation mechanisms, based on the phase in which these mechanisms enter the emotion formation process. The mechanisms, mentioned previously, include situation selection, situation modification, attentional deployment, cognitive change, and response modulation.²³ All but the last one are relevant to the current article. As Gross explains, situation selection and modification concern the initial phase of emotion emergence, and attentional deployment and cognitive change concern phases two and three, respectively, while response modulation relates to the last phase of emotional emergence.²⁴ As Gross observes, situation selection and modification are mechanisms that rely on the transformation of the environment in order to inspire, or avoid inspiring, specific emotions.²⁵ For example, a person who is feeling anxious may decide to take a day off and go for a hike. Alternatively, when one is feeling lonely they can invite friends to cheer them up.

20. Gross, "Emotion Regulation," 5.

21. See Kateri McRae and James J. Gross, "Emotion Regulation," *Emotion* 20, no. 1 (2020).

22. Gross, "Emotion Regulation," 4.

23. Gross, 7.

24. Gross, 6.

25. Gross, 6, 7–8.

Gross argues that attentional deployment and cognitive change affect the latter stages of the emotion formation process. Instead of manipulating the outside world, these two mechanisms work by transforming people's minds, either by directing attention to the particular aspects of the situation (attentional deployment) or by changing the meaning that one derives from the situation (cognitive change).²⁶ For example, when an individual feels sad because of a loss of a beloved person they may try to focus their attention on work-related activities. Alternatively, people can reinterpret their mistakes as learning opportunities in order to feel less regret and more hope.

Crucially, Gross observes the mechanisms differ not only in their internal logic but also in their emotional effects.²⁷ He argues this variance in emotional effects may be related to the phases in which particular mechanisms occur with the emerging emotion and to their differing interactions with cognitive processes.²⁸ Additionally, Gross has suggested some mechanisms, such as attentional deployment, may be better at regulating more intense emotions than others, such as cognitive change.²⁹

Other studies support the proposition that the difference in mechanisms matters for emotional outcomes. For example, one study has shown that the effectiveness of different emotion regulation approaches may depend on whether one intends to reduce or increase their specific emotions.³⁰ Another study found that a particular mechanism's effects may vary with the specific emotion that is to be regulated.³¹ The following section explores how this difference in emotion regulation mechanisms can explain the difficulty of emotional manipulation in practice.

Influencing Emotions through Kinetic and Information Operations

By viewing kinetic and information operations as working through different emotional regulation mechanisms, the emotion regulation lens can explain why it is difficult to synchronize emotional manipulation across these activities. Kinetic operations manipulate emotions mostly through situation selection and situation modification—in short, environmental transformation. In general, these operations consist of moving troops, seizing and holding ground, destroying objects, and killing people.³² Such conduct usually transforms the environment, intentionally or not.

To be sure, not every environmental transformation regulates the target audience's emotions. Only those transformations that are appraised as relevant (phase 1) and

26. Gross, 8–9.

27. Gross, 17.

28. Gross, 7.

29. Gross, 17.

30. Hartmann, Pruessner, and Barnow, "Contextual Variations."

31. Webb, Miles, and Sheeran, "Dealing with Feeling," 797.

32. See Robert Rubel, "Antecedents to Strategy: The Use of Force," *Infinity Journal* 6, no. 4 (Summer 2019); and Robert J. Art, "To What Ends Military Power?," *International Security* 4, no. 4 (1980).

grab people's attention (phase 2) do.³³ For example, watching social media videos about armies moving on the other side of the world may not inspire emotions in people who just do not care enough about whatever is happening that far away. Therefore, when kinetic operations do regulate emotions, it is because they meaningfully change the world, at least from the perspective of the target audience.

Information operations are different. They regulate emotions primarily via attentional deployment and cognitive change, hence mind transformation. Information operations consist of communication, usually conducted through speeches, sounds, images, or signals.³⁴ Actors often feed the target audience with incomplete, biased, or false information to direct their attention to the specific aspects of the situation.³⁵

Those employing information operations also strive to change the meaning the target audience derives from the situation, by developing specific narratives and stories.³⁶ Information operations then work with the adversary's attention and interpretation in the context of unfolding situations. For example, during the ongoing war in Ukraine, Russian propagandists have tried to direct the attention of Ukrainian society to some fabricated missteps of Ukrainian political elites, thus casting the latter as incompetent leaders.³⁷

If the target audience encounters both kinetic and information operations, it effectively faces two, possibly four, of the distinct emotion regulation mechanisms. It may be difficult to synchronize these different mechanisms, and thus integrate these two types of operations, to produce the desired emotions. This is because the adversary may feel one set of emotions when they encounter the situation and a different set of emotions when they direct attention elsewhere or understand the evolving situation in a different light. In the case of air strikes, for example, they may initially inspire fear, but if the subsequent assessment shows the attacks inflicted little meaningful damage on one's forces, a sense of relief may emerge. There is no inherent synergy among these mechanisms, but there are significant divergences.

One consequence of this distinction, and a reason why integrated emotional manipulation in practice is difficult, is the diverging capacity of kinetic and information operations to inspire specific emotions at any given moment. As implied by the emotion regulation model and explicitly posited by the mainstream theories of

33. See Tobias Brosch, Gilles Pourtois, and David Sander, "The Perception and Categorisation of Emotional Stimuli: A Review," *Cognition and Emotion* 24, no. 3 (2010).

34. See Leigh Armistead, *Information Operations Matters: Best Practices* (Washington, DC: Potomac Books, 2010).

35. Arild Bergh, "Understanding Influence Operations in Social Media: A Cyber Kill Chain Approach," *Journal of Information Warfare* 19, no. 4 (2020): 115–17.

36. Derek Bolton, "Targeting Ontological Security: Information Warfare in the Modern Age," *Political Psychology* 42, no. 1 (2021); and Lawrence Freedman and Heather Williams, "Understanding Narratives and Information Campaigns," *Adelphi Series* 61, no. 493–95 (2021).

37. Olga Robinson, Adam Robinson, and Shayan Sardarizadeh, "Ukraine War: How TikTok Fakes Pushed Russian Lies to Millions," BBC, December 15, 2023, <https://www.bbc.com/>.

emotion, the kind of emotion that people feel depends on their interpretation of the situation.³⁸

Kinetic operations do not affect the target's interpretation. Rather, they transform environments and let the ensuing situations speak for themselves. Consequently, the target audience can derive all sorts of meanings from the situation and therefore feel various and sometimes contrasting emotions.³⁹ Some people may see the ensuing situation as terrifying and consequently feel fear, others may consider the operations a failure and feel contempt or even happiness and relief, and still others may grieve because they lost their loved ones in combat.⁴⁰

Unsurprisingly, examples of emotional diversity following kinetic operations abound. For example, the 9/11 terrorist attacks elicited widespread anger, fear, and sadness in the United States and sympathy abroad.⁴¹ The 2020 US killing of the Iranian general Qassem Soleimani elicited emotions as diverse as anger, fear, and happiness, depending on the observer's prior beliefs and thoughts.⁴² Soldiers facing combat situations often experience the obvious emotions such as fear but also "a variety of other emotional reactions, ranging from anger, anxiety, and rage, sadness, shame, guilt, and disgust, to pride, awe, elation, exhilaration, and even joy."⁴³ These examples indicate kinetic operations usually inspire many emotional effects.

In contrast, information operations leave less room for interpretation. This is because, as noted above, information operations usually dictate how events are to be interpreted. Furthermore, actors usually design these operations with the intention of inspiring distinct emotions.⁴⁴ This practice effectively narrows down the repertoire of meanings that the target audience is likely to derive from the situation. As a result, information operations are more likely to elicit a narrower group of emotions in the target audience, if they elicit emotions at all. This would explain why in the 2023 study on the Russian state-sponsored media mentioned above managed to inspire fear and

38. Jennifer Yih et al., "Better Together: A Unified Perspective on Appraisal and Emotion Regulation," *Cognition and Emotion* 33, no. 1 (2019).

39. Lukas Milevski, "Battle and Its Emotional Effect in War Termination," *Comparative Strategy* 39, no. 6 (2020).

40. See Klaus Scherer and Agnes Moors, "The Emotion Process: Event Appraisal and Component Differentiation," *Annual Review of Psychology* 70, no. 1 (2019).

41. Todd H. Hall and Andrew A. G. Ross, "Affective Politics after 9/11," *International Organization* 69, no. 4 (2015).

42. Samuel Zilincik and Isabelle Duyvesteyn, "Deterrence: A Continuation of Emotional Life with the Admixture of Violent Means," in *NL ARMS Netherlands Annual Review of Military Studies 2020: Deterrence in the 21st Century – Insights from Theory and Practice* (Hague: Springer, 2021), 468–69.

43. Siniša Malešević, "Emotions and Warfare: The Social Dynamics of Close-Range Fighting," *Oxford Research Encyclopedia of Politics* (Oxford, UK: Oxford University Press, 2021), 5; and see also Erika Kuijpers and Cornelis van der Haven, eds., *Battlefield Emotions 1500–1800: Practices, Experience, Imagination* (London: Palgrave MacMillan, 2016).

44. Elisabeth Johansson-Nogués and Elena Şimanschi, "Fabricating a War? Russian (Dis)Information on Ukraine," *International Affairs* 99, no. 5 (2023).

anger within the international community but failed to inspire trust.⁴⁵ This divergence demonstrates why kinetic operations often generate emotions detrimental to the overall effort, while this problem is rare in connection to information operations.

Another consequence of this distinction, and a reason why the two kinds of operations are not inherently emotionally synergic in their effects, is the fact that kinetic operations manipulate emotions more easily than information operations. First and foremost, the two kinds of operations diverge in how they impact the survival and well-being of their targets and therefore in how emotionally stimulating they are.⁴⁶ Because kinetic operations can kill and destroy, they can directly affect the survival and well-being of their targets. Subsequently, these targets are likely to interpret kinetic operations as relevant to their concerns and feel some emotions, though not necessarily the intended ones.

In contrast, information operations do not directly impact the survival or well-being of the target audience. They may be designed to convey such a message, but whether the target interprets the message in the intended way is not guaranteed. Therefore, these operations can be more easily regarded as irrelevant to one's well-being and survival and, therefore, fail to elicit emotions in their targets.

Furthermore, as Gross suggests, the effectiveness of distinct emotion regulation mechanisms depends on the phase in which these mechanisms enter the emotion regulation process. The sooner the mechanism occurs, the more likely it is to successfully influence the ensuing emotions. In contrast, the later the mechanism occurs, the harder it is for it to influence emotion formation. Accordingly, mechanisms relying on environmental transformation—a bomb exploding overhead—inspire emotions more easily than do mechanisms relying on mind transformation—disinformation regarding a candidate running for election.⁴⁷

Since kinetic operations start the emotion regulation process with situation selection or modification, they are more effective in eliciting emotions than information operations, which only enter the process later with attentional deployment and cognitive change. Additionally, integrated employment of kinetic and information operations can also hinder the latter's emotional effects. Though the psychological research on this kind of emotion polyregulation—or the use of more than one approach in one emotional episode—is in its infancy, it indicates that emotion regulation mechanisms may hinder each other's potential, especially when eliciting contrasting emotions.⁴⁸ For example, this conflict may occur when kinetic operations incite fear while information operations are tailored to create positive emotions, such as trust. This observa-

45. See Hoyle et al., "Cognitive and Emotional Responses."

46. Brosch, Pourtois, and Sander, "Perception and Categorisation."

47. James J. Gross, "Emotion Regulation in Adulthood: Timing Is Everything," *Current Directions in Psychological Science* 10, no. 6 (2001).

48. Brett Q. Ford, James J. Gross, and June Gruber, "Broadening Our Field of View: The Role of Emotion Polyregulation," *Emotion Review* 11, no. 3 (2019).

tion would again explain why in the 2023 study, the Russian media failed to inspire trust alongside fear and anger within the international community.⁴⁹

When such conflict occurs, the effects of kinetic operations are likely to prevail and shape the emotional experience at the expense of information operations. Information operations may lose some of their emotion regulation potential when employed alongside kinetic operations, especially when they aim to elicit different emotions.

These observations are also in accordance with previous theoretical propositions and empirical findings. As deterrence scholarship has already shown, people tend to ignore threatening messages when distracted by simultaneously changing situations on the ground.⁵⁰ One strategic analysis of the US Civil War, for example, showed that attempts to inspire positive emotions through information operations had little effect when the target audience simultaneously faced kinetic operations and experienced the resulting strong negative emotions.⁵¹

It seems that environmental transformations conveyed in kinetic operations have the tendency to grab people's attention, despite the efforts of others to deploy it elsewhere. This process undermines the capacity of the emotion regulation mechanisms associated with information operations to work effectively. This divergence explains why the emotional effects of integrated operations may not be synergic; those of kinetic operations are likely to prevail.

Emotional Counterregulation

The final implication of the emotion regulation perspective, and the one that explains the inherent difficulty of not only inspiring the desired emotions but especially translating these into long-lasting effects, is the issue of emotional counterregulation. As Clausewitz has argued, efforts in war are directed against people, not objects.⁵² These people are not blank slates waiting to be emotionally manipulated by an adversary.

This emotional counterregulation has two primary sources. The first one is the well-documented tendency of individuals to regulate their own emotions, even unconsciously. Psychological research has shown that humans regularly transform their environments, or change their minds, in order to feel the desired emotions and avoid the undesired ones.⁵³ The second important source of counterregulation resides in the

49. See Hoyle et al., "Cognitive and Emotional Responses."

50. Richard Ned Lebow, "Conclusions," in *Psychology and Deterrence*, ed. Robert Jervis, Richard Ned Lebow, and Janice Gross Stein (Baltimore, MD: John Hopkins University Press, 1985), 205–11, 232.

51. Shimshoni, "Swords and Emotions."

52. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1989), 149.

53. Tammy English et al., "Emotion Regulation Strategy Selection in Daily Life: The Role of Social Context and Goals," *Motivation and Emotion* 41, no. 2 (2017).

efforts of other emotional manipulators. For example, political and military elites may manipulate the emotions of their societies to counter an adversary's efforts.⁵⁴

There are reasons to suspect that counterregulation affects either kind of operation differently. When facing kinetic operations, the targeted regime often counterregulates its society's emotions to decrease a specific emotion. For example, a common practice in relation to terrorism is for political elites to attempt to suppress fear in the targeted society.⁵⁵ Sometimes, political actors use public speeches in the aftermath of violent attacks to actively promote other emotions, such as anger and hatred, in order to garner support for aggressive response.⁵⁶

It is not clear how effective these efforts are. The speech acts themselves are tantamount to information operations in that they rely on emotion regulation mechanisms that target minds. Hence, as discussed before, if the targeted society also faces kinetic operations, this sort of communication is likely to have a small impact on the overall emotional climate. If, however, these efforts follow after kinetic operations, then they could be more impactful in terms of the subsequent emotions the targeted society experiences. In this sense, the attempts to suppress a dominant emotion and promote others may result in a wide spectrum of emotions, including the undesired ones. For example, while the 9/11 attacks inspired intense emotions on their own, political elites soon attempted to manipulate those emotions, such as by converting collective sadness into anger.⁵⁷

Counterregulation of information operations is different. Counterregulation in an information contest consists of what some in the West now call strategic communications.⁵⁸ The interaction of adversarial information operations with strategic communications manifests as a clash of competing narratives. In this scenario, both sides rely on emotional regulation associated with mind transformation. The results depend on psychological biases, such as the anchoring effect—relying on the first information that one receives—rather than on different emotion regulation mechanisms.⁵⁹

In contrast to kinetic operations, one's counterregulation efforts in the course of information operations have a greater chance of having an impact on the outcome.

54. See Maor Moshe and James Gross, "Emotion Regulation: Implication for Politics" (paper presentation, Panel on the Politics of Non-Proportionate Policy Response, ECPR Joint Sessions of Workshops, Warsaw, Poland, March 29–April 4, 2015).

55. Edwin Bakker and Beatrice de Graaf, *Towards a Theory of Fear Management in the Counterterrorism Domain: A Stocktaking Approach* (Hague: International Center for Counter-Terrorism, 2014).

56. Donileen R. Losek, "Examining Emotion as Discourse: Emotion Codes and Presidential Speeches Justifying War," *Sociological Quarterly* 50, no. 3 (2009).

57. George W. Bush, "Address to Joint Session of Congress following 9/11 Attacks," speech to the Joint Session of Congress, Washington, DC, September 20, 2001, <https://americannrhretoric.com/>.

58. Ofer Fridman, "'Information War' as the Russian Conceptualisation of Strategic Communications," *RUSI Journal* 165, no. 1 (2020): 44.

59. Adrian Furnham and Hua Chu Boo, "A Literature Review of the Anchoring Effect," *Journal of Socio-Economics* 40, no. 1 (2011).

This dynamic partly explains why information operations often fail to achieve meaningful emotional manipulation in adversarial contexts.

Implications and Limitations

The emotion regulation perspective casts new light on several aspects of strategic thought and practice. First and foremost, it challenges the idea of effects-based operations, the concept of planning operations based on what kinds of effects they are supposed to generate.⁶⁰ Previous research has already criticized this approach to operational planning, highlighting the problems of unpredictability in the process of creating consequences.⁶¹ The emotion regulation lens elaborates on the previous critique. As noted, kinetic operations generate emotional effects during their whole conduct, every time they meaningfully transform the environment for the target audience.

Information operations, however, do not suffer from this problem; they seldom generate undesired emotional effects merely through their conduct. Yet the main concern with information operations is that they rarely produce the desired emotional effect at all, especially when they are conducted alongside kinetic operations. Hence, whether alone or integrated, neither kinetic nor information operations are well-suited for an effects-based operational approach.

Second and relatedly, the emotion regulation perspective questions the wisdom of relying on the manipulation of one distinct emotion to achieve political success. Even if the emotional manipulation is successful, the ensuing emotion will only be one of the many that influence the target's thinking and behavior. Adversarial emotional manipulation conducted through kinetic and information operations thus has no inherent primacy when it comes to influence. Instead of relying on a single emotion, strategic theories should acknowledge that emotional manipulation is a constant interactive process rather than a one-time linear effort.⁶² Constant awareness and appropriate adaptation are more important to emotion manipulation than the original intent behind any operation. Accordingly, emerging strategic theories should promote sensitivity to the continual emotional manipulation integral to the conduct of military operations.

Third, if the employment of kinetic and information operations to achieve desired emotional manipulation outcomes is to be in synergy, timing is crucial. Specifically, the reviewed emotion regulation literature suggests it makes sense to conduct these operations sequentially rather than simultaneously. If an actor wants to combine the two kinds of operations to manipulate the emotions of others, they should start by employing information operations and use kinetic operations only once the former generates the intended emotional effects. Since time has already been recognized as a

60. Paul K. Davis, *Effects-Based Operations (EBO): A Grand Challenge for the Analytical Community* (Santa Monica, CA: RAND Corporation, 2001).

61. Milan Vego, *Effects-Based Operations: A Critique* (Washington, DC: National Defense University, 2006).

62. See Zilincik, "Awe for Strategic Effect."

crucial strategic aspect, its relationship with emotional manipulation through either kind of operation should be incorporated into general strategic theory.⁶³

Fourth, the emotion regulation literature confirms that kinetic operations and information operations each present the conducting actor with a different risk of failure. The main risk associated with kinetic operations is they generate emotional effects detrimental to the overall effort. In contrast, the main risk of information operations consists in not inspiring any useful emotions. Risk is already recognized as an inherent part of any strategy, but seeing the difference in the context of emotional manipulation should allow practitioners to prepare for its management better and theorists to incorporate this difference into their thought.⁶⁴

Finally, emotional counterregulation deserves more systemic attention, both in strategic theory and practice. General strategic theory should allow for differentiating defensive measures based on their emotion regulation logic. In practice, counterregulation should prioritize defense against the emotional effects of kinetic rather than information operations. Since kinetic operations are more effective at eliciting emotions, defense against them should take priority over defense against information operations, which may struggle to elicit emotions at all.

Additionally, if kinetic operations can elicit a wide spectrum of emotions, then defense against them should prepare to regulate all those emotions that can be significantly harmful. The fact that information operations tend to inspire a narrower range of emotions means defense against them may also be narrower. In this case, there is a lesser need to consider all the potential emotional effects and rather focus on the ones the adversary seeks to inspire. Appreciating this distinction allows for conserving resources and channeling efforts to where it matters. Moreover, highlighting the emotion regulation potential of particular measures can make for a useful marketing tool, to gain resources for relevant defensive projects.

The emotional regulation perspective has certain limitations as well. The first, and perhaps the least serious one, relates to the pace at which the emotion regulation research has been, and probably will keep, developing. In fact, emotion regulation has been one of the fastest growing areas of psychology in recent years, and there is no sign of this trend slowing down.⁶⁵ While generally useful, it also means some ideas presented here may become outdated soon. While admittedly challenging, military strategy practitioners and scholars should continually monitor this trend and incorporate relevant insights as they emerge. Since this community often relies on historical case studies, it is not necessarily accustomed to keeping updated on the most recent developments in the fields as distant and turbulent as emotion

63. Colin Gray, *Fighting Talk: Forty Maxims on War, Peace, and Strategy* (London: Praeger Security International, 2007), 70–73.

64. Harry R. Yarger, *Strategic Theory for the 21st Century: The Little Book on Big Strategy* (Carlisle Barracks, PA: Strategic Studies Institute, 2006), 62–64.

65. See James J. Gross and Brett Q. Ford, eds., *Handbook of Emotion Regulation*, 3rd ed. (New York: Guilford Press, 2023).

sciences or even psychology in general. Fortunately, following the work of leading researchers on the subject, such as that of Gross, may be sufficient. The unique lens the perspective offers is well worth the extra effort.

The more serious limitations concern the model's explanatory power, specifically, its inability to capture the difference between information operations and those kinetic operations that inspire emotions without meaningfully transforming the audience's situations. This scenario is quite common in the contemporary world, where social media allows people to observe tactical events from a safe distance.⁶⁶

The virality of the footage from the Russian war in Ukraine is perhaps the best example here. Global audiences have been able to watch Ukrainian and Russian operations unfold in real time, and they undoubtedly have experienced strong emotions in the process, even though the operations did not directly impact their lives. From the perspective of these distant observers, the distinction between kinetic and information operations as influencing through different emotion regulation mechanisms blurs significantly. This is because both kinds of operations effectively only regulate emotions by targeting audience's minds. Hence, the explanatory power of the model decreases in proportion to the extent to which the audience remains unaffected by the relevant kinetic operations.

Additionally, while the model effectively differentiates between different mechanisms through which various operations work, it fails to account for some nuances within and across categories. For example, there are likely to be differences in emotional effects between movements of forces from one position to another and large-scale destruction brought by artillery or airpower. While both phenomena are technically kinetic operations, and hence regulate emotions through environmental transformation, they produce widely different physical and therefore emotional effects.

Furthermore, as illustrated by the case of the Stuxnet malware targeted against Iran's nuclear program, cyber operations can also destroy things and thus transform environments.⁶⁷ This should theoretically put them on par with traditional kinetic operations conducted by land, naval, or air forces. Yet previous research indicates the emotional effects of cyber operations are of a different quality than those brought about by the employment of other forms of military power.⁶⁸ The model thus, at least for now, does not explain the different emotional potentials associated with various means of environmental or mind transformation.

Third and relatedly, the model does not explain other emotional issues relevant to strategic practice. Kinetic and information operations may inspire different emotions depending on factors such as the duration of the war or its character. If the targeted

66. Matthew Ford and Andrew Hoskins, *Radical War: Data, Attention and Control in the Twenty-First Century* (London: Hurst Publisher, 2022).

67. James P. Farwell and Rafal Rohozinski, "Stuxnet and the Future of Cyber War," *Survival: Global Politics and Strategy* 53, no. 1 (2011).

68. Sarah Kreps and Jacquelyn Schneider, "Escalation Firebreaks in the Cyber, Conventional, and Nuclear Domains: Moving beyond Effects-Based Logics," *Journal of Cybersecurity* 5, no. 1 (2019).

society gets accustomed to a daily occurrence of intense violence, then a shift to sporadic and low-intensity kinetic operations may result in no emotional consequences for that audience. Indeed, the tendency of combat to lose its emotional spark in the context of prolonged warfare is well documented.⁶⁹ Similarly, if people become accustomed to being the constant targets of information operations, they may gradually choose to ignore them and not feel any specific emotions as a consequence of a particular operation.⁷⁰

In short, to fully understand emotion dynamics associated with either kind of operation, it is necessary to go beyond the emotion regulation literature.

Conclusion

Previous research has shown that integrated emotional manipulation, while assumed to work in theory, often fails in practice. Contemporary emotion regulation literature can explain the failure, at least in the context of integrated kinetic and information operations. The popular process model introduced by Gross allows us to understand kinetic and information operations as working through distinct mechanisms of emotion regulation. Kinetic operations transform the environment, and that transformation, in turn, inspires emotions.

In contrast, information operations are designed to transform the target's mind, shaping their attention and interpretation of the world and influencing what emotions they experience. Based on contemporary emotion regulation literature, this difference in mechanisms may translate into a diverging repertoire of resulting emotions, diverging effectiveness of inspiring emotions at all, and diverging responses to the adversary's counterregulation.

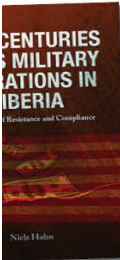
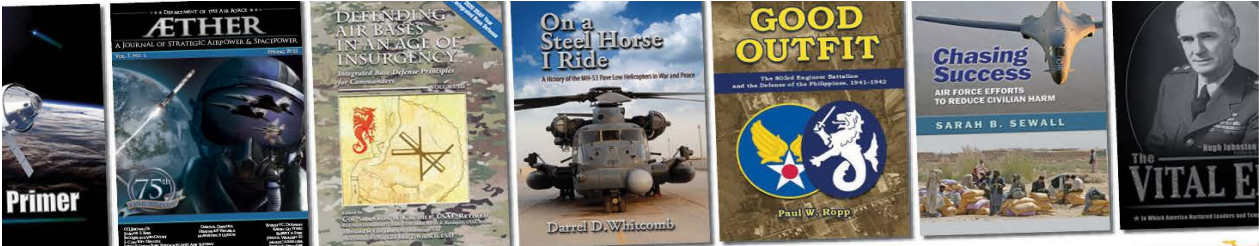
Military strategists and planners should abandon the efforts to plan operations based on the effects they are to generate and eschew theories that rely on the inspiration of specific emotions for overall success. Rather, emotional manipulation requires continual awareness, proper timing, and appreciation of the diverse risks associated with each kind of operation. Emotion counterregulation deserves systematic attention in practice and incorporation into strategic thought.

The emotion regulation perspective offers avenues for further research. While the proposed model provides scholars with a useful theoretical framework, there is a lack of empirical data to either support or challenge its theoretical propositions. Hence, the primary line of research effort should consist of data gathering, which could include conducting war games and other kinds of simulations to explore the emotional effects of kinetic and information operations in virtual settings. Historical or contemporary

69. Gerald F. Linderman, *The World within War: America's Combat Experience in World War II* (New York: Free Press, 1997).

70. Aaron M. Hoffman and José Kaire, "Comfortably Numb: Effects of Prolonged Media Coverage," *Journal of Conflict Resolution* 64, no. 9 (2020).

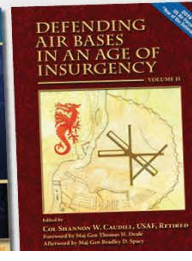
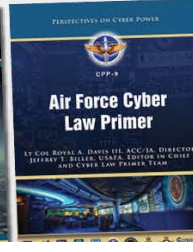
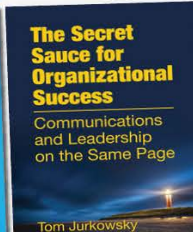
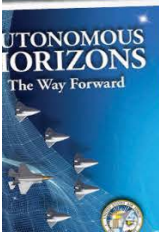
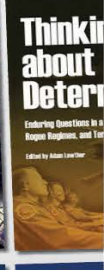
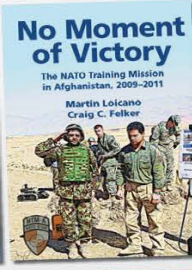
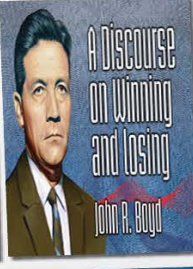
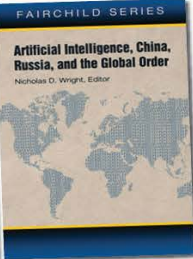
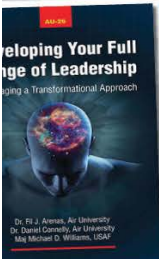
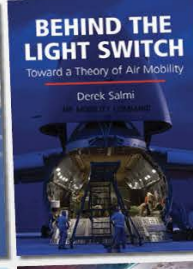
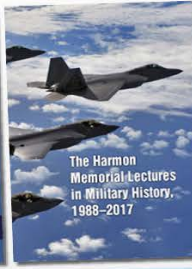
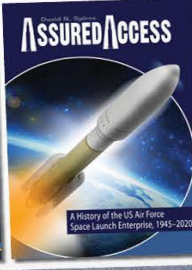
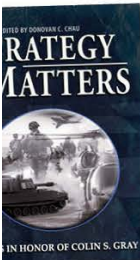
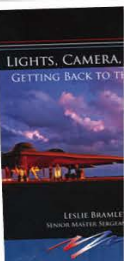
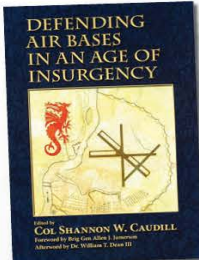
case studies could also provide in-depth explorations of how exactly kinetic and information operations generate their effects in the real world. Whatever the employed method, the new perspective has the potential to enunciate the ways in which we understand the emotional impacts of war. Æ

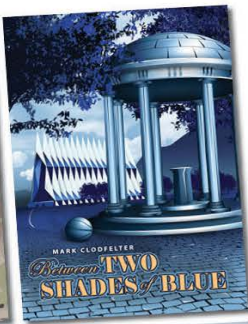
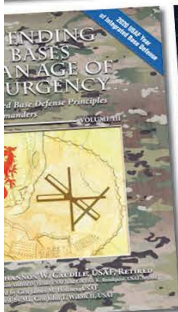
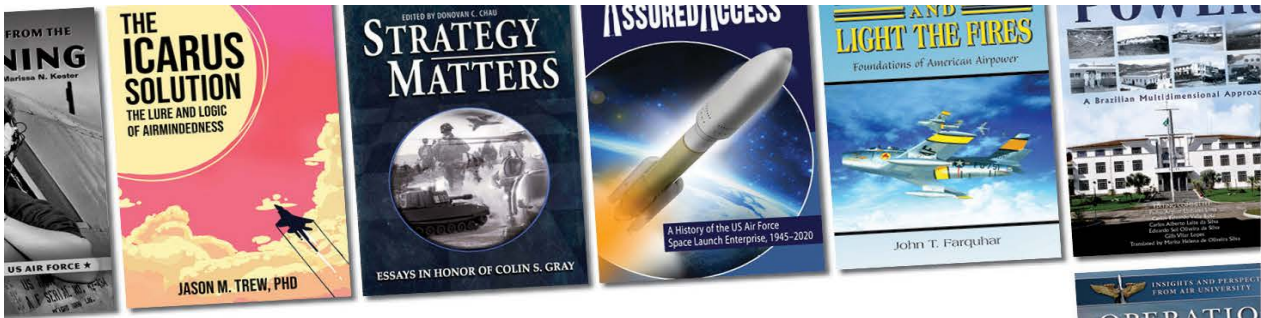


Thank you!

Nedra Looney

Air University Press and the journals would like to thank Nedra O. Looney for her 16 years of dedication to excellence in Air Force publishing, and for her 37 years in service to the Air Force, Air Education and Training Command, and Air University.

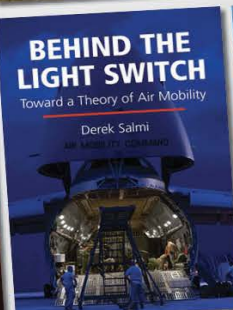
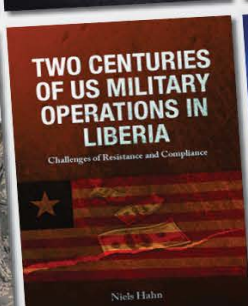
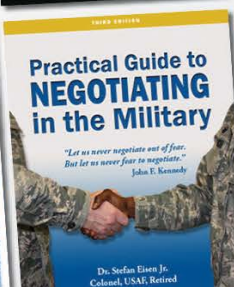
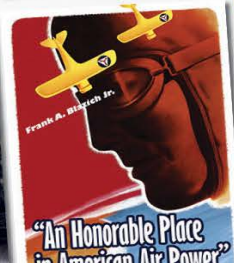
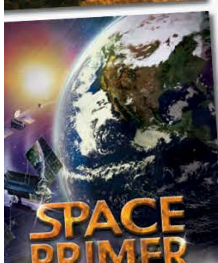
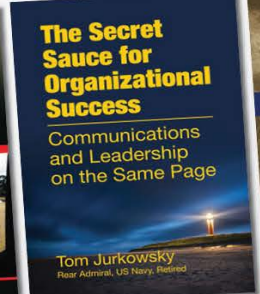
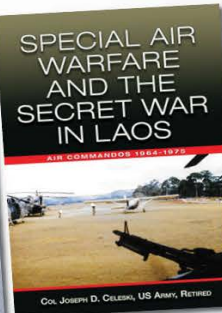
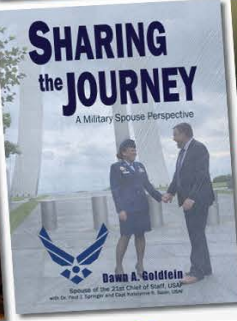
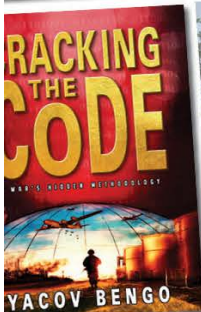
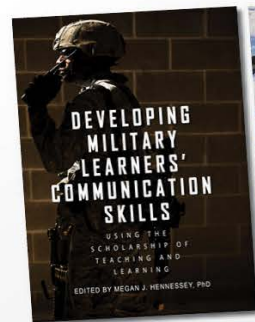




Thank you!

Dr. Chris Rein

The journals would like to recognize and thank Dr. Chris Rein for his years of service as managing editor at Air University Press. Dr. Rein oversaw the successful publication of numerous books and papers, from May 2019 through January 2024. He has been a steady, thoughtful, and wise colleague, and he will be missed. We wish him well in his future endeavors!



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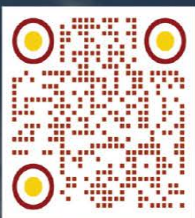
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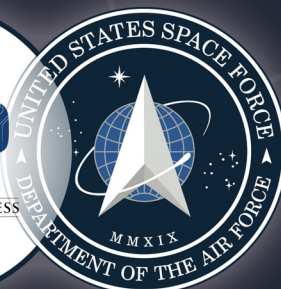
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