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Governing the Global Commons: Challenges and Opportunities for US-Japan Cooperation

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Governance Challenges in the Maritime, Outer Space, and Cyber Domains and Opportunities for US-Japan Leadership

Kristi Govella

The global commons—domains beyond the sovereign jurisdiction of any single state but to which all states have access—are essential to the stability and prosperity of the international order. In addition to the high seas, outer space, the atmosphere, and Antarctica, which are defined as global commons by international law, analysts have also suggested that other domains such as cyberspace may also qualify as potential commons. These domains provide essential public goods such as trade routes, transportation and communication networks, fish stocks, satellite imagery, global positioning, and e-commerce infrastructure that benefit countries around the world.

To successfully manage the resources of the global commons and ensure open access to their spaces, effective governance structures must exist to accommodate and integrate the interests and responsibilities of state and non-state actors. Consequently, states have tried to come to agreements in each domain about how to enable broad access, avoid conflict, and enable cooperation. Over time, these discussions have resulted in the creation for each domain of a “regime,” a set of implicit or explicit principles, norms, rules, and decision-making procedures around which actors’ expectations converge (see Box 1). These regimes can take shape in the form of international law, national law, local regulations, private standards, and institutional bodies. They differ dramatically in maturity and complexity: the governance regime of the oceans has developed over the course of centuries, while the rules and norms of cyberspace have only had a few decades to coalesce. However, all these regimes attempt to solve similar dilemmas surrounding shared access and resources.

In recent years, the governance regimes of the global commons have faced intensifying challenges due to shifts in the international political, economic, and security environment. In particular, the maritime, outer space, and cyber domains—areas that are crucial for both military and commercial purposes—are under stress due to the rise of China, advances in technology, the multiplication of state and non-state actors operating in the commons, and the emergence of behavior such as gray zone tactics that are

Box 1: Components of Governance Regimes

Regimes are sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actors’ expectations converge in a given area of international relations:

- **Principles** are beliefs of fact, causation, and/or morality.
- **Norms** are standards of behavior defined in terms of rights and obligations.
- **Rules** are specific instructions for or against action.
- **Decision-making procedures** are practices for making and implementing collective choice.

Source: Adapted from Stephen Krasner, “[Structural Causes and Regime Consequences: Regimes as Intervening Variables](#),” *International Organization*, 36, no. 2 (1982): 185–205.

difficult to regulate.¹ The result is an increasing crowded and contested set of global commons.

The United States and Japan have been drawn closer together by these issues—by their common interests in maintaining a rules-based international system as well as by their shared values. Both countries stand to benefit from strengthening the governance of the global commons in ways that will continue to support their own security and prosperity.² Both countries also recognize that there is need for reform of existing regimes, and in some cases, construction of new ones. This volume brings together US and Japanese experts on the maritime, outer space, and cyber domains to examine the challenges that both countries identify in the global commons and to provide insights as to how they can jointly address these challenges. What are the key pillars of the existing governance regimes that need to be maintained in each of the three domains, and where are the key areas for reform? In cases where regimes are nascent, what are the best ways to shape their rules and norms? Where are the areas of convergence and divergence in US and Japanese perspectives on governance? What scope do policy makers and experts in the United States and Japan see for bilateral cooperation, and how can bilateral cooperation produce global change?

This volume addresses these questions through two parts. Part 1 comprises this paper, which provides an overarching analysis of challenges across the maritime, outer space, and cyber domains. It draws on interviews, primary materials, and academic research, as well as insights from experts who attended a workshop convened by The German Marshall Fund of the United States in May 2022. The resultant analysis reveals clear and persistent differences in the governance regimes of these domains, reflecting their

different stages of maturity and the varying nature of the spaces and resources that they seek to govern. However, despite the many differences that exist across these three domains, there are also striking commonalities. In each of these domains, central issues of access to space and to resources continue to be debated, reflecting persistent tensions in stakeholders' preference for enclosure or openness. In addition to challenges to national security across the three domains, problems related to sustainability and human rights are also increasingly discussed.

The United States and Japan have been drawn closer together by these issues—by their common interests in maintaining a rules-based international system as well as by their shared values.

This analysis also clearly demonstrates that there are strong synergies in the values and interests of Japan and the United States in the maritime, outer space, and cyber domains. While differences in viewpoints exist between the two countries, there is potential for cooperation, coordination, and consultation on a wide range of matters. In the maritime domain, the paper discusses the potential to address issues related to freedom of navigation, rules for maritime zones, regime legitimacy, fisheries management, human rights at sea, and green shipping. In the outer space domain, it examines space situational awareness, space traffic management, space debris, anti-satellite tests, and space resources. In the cyber domain, it addresses the conflicting norms of openness versus enclosure, privacy and data flows, artificial intelligence, cybercrime, human rights and digital authoritarianism, cognitive warfare, cyber defense norms, and sustainability. While this list of issues is not exhaustive, it offers a starting point from which to begin thinking holistically about governance regimes across the three domains, which is further discussed in the conclusion of this paper.

Part 2 of the volume contains six policy briefs, which examine specific issues in a single domain. Beginning with

1 See Kristi Govella, “[Technology and Tensions in the Global Commons](#),” *Fletcher Security Review* 6, no. 1 (2019): 38–44; and Kristi Govella, “[China’s Challenge to the Global Commons: Compliance, Contestation, and Subversion in the Maritime and Cyber Domains](#),” *International Relations* 35, no. 3 (2021): 1–23.

2 On the benefits of the maritime governance regime for Japan and the United States, see Robert Friedheim et al., *Japan and the New Ocean Regime* (New York: Routledge, 2019); and Barry Posen, “Command of the Commons: The Military Foundation of US Hegemony,” *International Security* 28, no. 1 (2003): 5–46.

the maritime domain, John Bradford discusses ways that the coast guards of the United States and Japan can become agents to improve global maritime governance, while Kyoko Hatakeyama focuses specifically on the importance of supporting governance related to freedom of navigation. Moving on to the outer space domain, Saadia Pekkanen examines developing state practice for the governance of outer space resources, and Setsuko Aoki emphasizes the importance of banning direct ascent anti-satellite (ASAT) tests for the safety and sustainability of the domain. Finally, with respect to the cyber domain, James Lewis discusses emerging structures of governance, and Motohiro Tsuchiya explores the emerging challenge of cognitive warfare.

Overall, the two parts of this edited volume demonstrate the importance of the global commons to the United States and Japan and the potential for these two countries to work together to shape a rules-based international order that creates a more sustainable basis for their long-term security and prosperity. In addition to formulating joint tactical responses to specific challenges in the global commons, promoting good governance is an essential part of ensuring that their spaces and resources remain available to state and non-state actors around the world.³ Discussions of principles, rules, norms, and decision-making procedures must be put at the forefront of diplomacy. While the United States and Japan cannot solve the problems of global commons governance on their own, they have the capacity and influence to make a significant contribution. Moreover, US-Japan bilateral cooperation can serve as a building block for broader regional and international coalitions to achieve their shared governance goals.

The Maritime Domain

The governance regime of the maritime domain is the oldest and most complex of all the global commons, a patchwork of customs and treaties that has evolved over centuries.

As early as the second century, the Romans declared that the seas were common to all humankind. In 1609, Grotius argued that the sea could not be appropriated and should be free for common use by all people and all nations.⁴

However, these ideas were increasingly questioned as states realized that the abundance of the ocean was not in fact inexhaustible. While leading fishing and shipping nations like the United States and Japan advocated for maritime openness, other states pushed for the enclosure of the oceans in the mid-20th century.⁵ In response to emerging interstate conflicts over the use of the oceans and their resources, the three United Nations Conferences on the Law of the Sea in 1958, 1960, and 1983 codified existing international law into a treaty regime that entered into force in 1994.

The resulting UN Convention on the Law of the Sea (UNCLOS) clarified the limits of internal waters, territorial seas, contiguous zones, exclusive economic zones (EEZs), continental shelves, and the high seas (see Figure 1). About 36 percent of the world's oceans were enclosed in EEZs. Despite providing this structure, however, the UNCLOS regime left some areas of ambiguity, and disagreements remain to the present day about the extent to which the oceans should be open to all countries or enclosed within the jurisdiction of specific states.

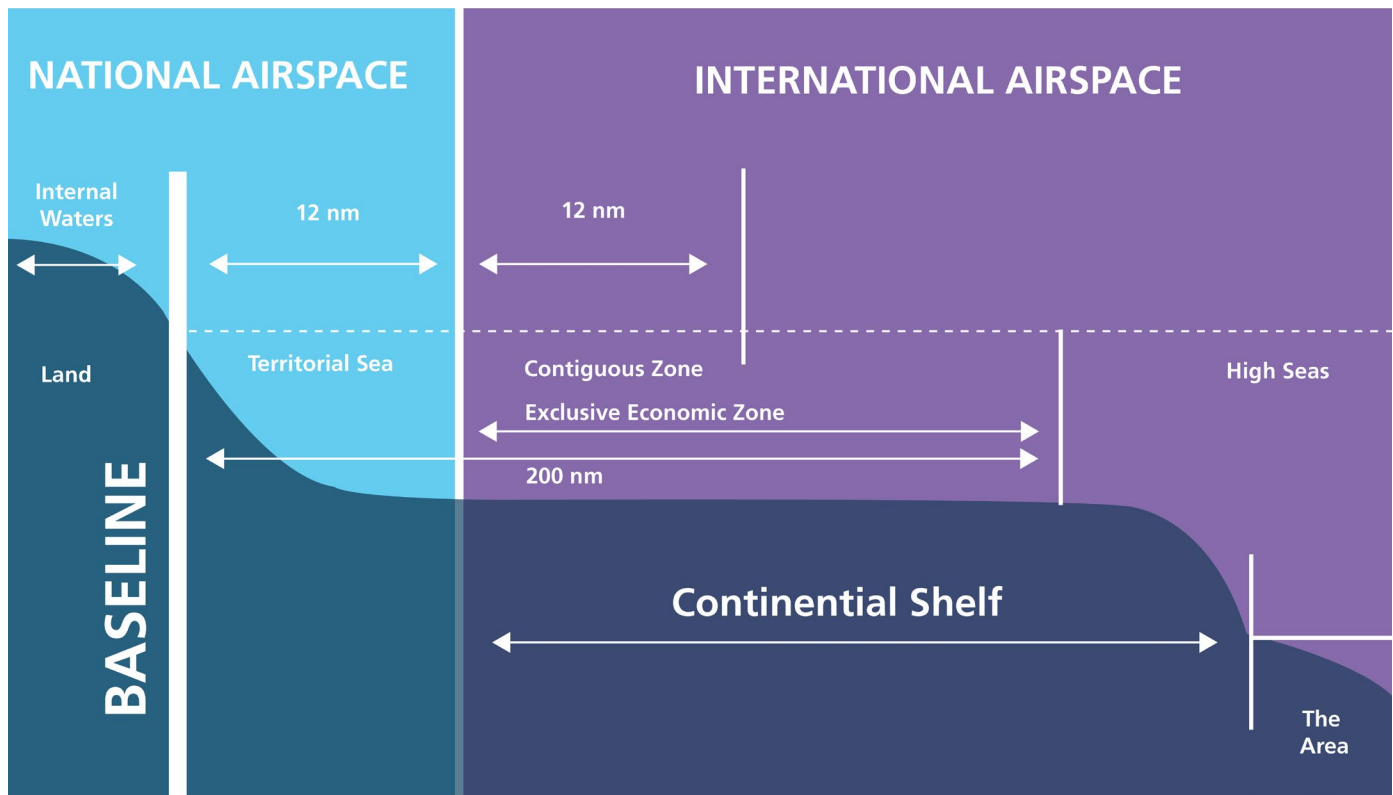
Since the 1990s, the strategic environment of the maritime domain has also changed, as American preeminence has been challenged by the dramatic modernization and expansion of the Chinese navy. Other Indo-Pacific countries have also upgraded their naval technology, which has resulted in an increasingly crowded maritime domain. The rules and norms of UNCLOS have been contested in areas such as the definition of territory, the legitimacy of UNCLOS dispute mechanisms, and norms of appropriate behavior in the exclusive economic zones of other states. Many of these challenges have been spearheaded by China, which has also further undermined the rules of UNCLOS by engaging

3 For an example of a study addressing potential US-Japan military cooperation in response to specific threats posed by gray zone coercion, see Scott Harold et al., [The US-Japan Alliance and Deterring Gray Zone Coercion in the Maritime, Cyber, and Space Domains](#), RAND Corporation, 2017.

4 Hugo Grotius, *The Freedom of the Seas, or the Right Which Belongs to the Dutch to Take Part in the East Indian Trade*, trans. Ralph Van Deman Magoffin, Oxford University Press, 1916.

5 David Bosco, [The Poseidon Project: The Struggle to Govern the World's Ocean](#), Oxford University Press, 2022.

Figure 1: Legal Boundaries of the Oceans and Airspace



Source: Fletcher School LL.M. Program and Maritime Studies Program, [Law of the Sea: A Policy Primer](#) (2017).

Note: nm = nautical mile.

in activities such as artificial island building and gray zone activity in disputed territories.⁶

The United States and Japan share similar interests in ensuring open access to the maritime commons and both advocated strongly for rules that would support freedom of navigation during the negotiations leading to UNCLOS. Today, maritime governance remains an important focus of their regional strategies. For example, as part of its Free and Open Indo-Pacific Strategy, Japan is working to maintain “free, open, and stable seas” based on its “three principles of the rule of law at sea.”⁷ Similarly, the US Indo-Pacific

Strategy emphasizes support for “rules-based approaches to the maritime domain.”⁸

Japan and the United States are already cooperating actively on several issues in this domain. Due to the existence of a well-developed regime, US-Japan leadership in the maritime domain is often needed in areas that involve the interpretation and enforcement of established norms, rules, and decision-making procedures, rather than the creation of new governance structures. This section discusses opportunities for the two countries to continue their support for rules related to the norm of freedom of navigation such as innocent passage and military activities in EEZs, as well as rules related to defining maritime zones. It emphasizes the need

6 Andrew Erickson and Ryan Martinson (eds.), [China's Maritime Gray Zone Operations](#), Naval Institute Press, 2019.

7 Ministry of Foreign Affairs of Japan, [Diplomatic Bluebook 2019](#), 2019.

8 The White House, [Indo-Pacific Strategy of the United States](#), February 2022.

to bolster the legitimacy of UNCLOS and its decision-making processes to encourage broad-based compliance. In addition, the section also addresses the scope for increased leadership on fisheries management, as well as newer initiatives related to human rights at sea and green shipping.

Freedom of Navigation

Freedom of navigation is an essential norm of the UNCLOS regime.⁹ It facilitates the movement of maritime commerce, as well as the movement of military forces, making it essential to the prosperity and security of many countries. In the case of the United States in particular, command of the maritime commons was part of the foundation of its military hegemony and remains critical to its security interests. In addition to rules that protect freedom of navigation on the high seas, UNCLOS also defines rules that allow vessels to pass through EEZs and territorial seas under specific circumstances. However, these rules have come under strain due to differences in interpretation and practice.

For example, foreign vessels have the right of **innocent passage** within the territorial sea of a coastal state for the purpose of traversing that sea without entering internal waters or calling at a port outside internal waters or when proceeding to or from internal waters or a call at such a port.¹⁰ Although the text of UNCLOS does not explicitly grant the right of innocent passage to warships, the United States and other countries argue that the overall text of UNCLOS, its negotiation context, and customary international law make it clear that warships possess the right of innocent passage. UNCLOS allows for lawful limitations on innocent passage under specific circumstances. However, a number of states require prior notification before a foreign warship may conduct innocent passage through their territorial waters. An even larger number of states, including China, not only require notification but also require that prior permission be granted.¹¹

The United States regularly conducts operational challenges to this and other restrictions through its Freedom of Navigation (FON) program. Proponents of these operations claim that they support the freedom of the maritime commons and help to normalize maritime claims in line with UNCLOS, essentially helping to enforce UNCLOS rules using US power, since the regime lacks such mechanisms of its own. While Japan's government has said that it "strongly supports" US operations, it has maintained that it cannot participate due to constitutional and political restrictions on the use of its military that make it infeasible for Japanese ships to join or to conduct their own.¹² However, Japan's rhetorical support remains important in bolstering the rules of UNCLOS that the United States is attempting to defend through these Freedom of Navigation operations.¹³

Another area where the norm of freedom of navigation has been contested involves **military activities in exclusive economic zones**. UNCLOS granted coastal states the right to manage the economic resources and to control the seabed within their EEZs, but it left unclear whether the EEZ should be considered part of the high seas or whether it represented a distinct maritime zone. This ambiguity has remained a point of contention.¹⁴

As major maritime states, the United States and Japan share an interest in promoting the application of traditional high seas rules to EEZs, except in limited circumstances related to natural resources. The United States, Japan, and a majority of UNCLOS states maintain that while coastal states have the right to regular economic activities within their own EEZs, they do not have the right to regulate foreign military activities. These countries argue that military activities are recognized as lawful under customary law and preserved under UNCLOS Article 58.

9 [UN Convention on the Law of the Sea](#), Article 87, December 10, 1982.

10 [UN Convention on the Law of the Sea](#), Articles 17–18, December 10, 1982.

11 US Navy Judge Advocate General's Corps, [Maritime Claims Reference Manual](#), 2022.

12 Li Bao, "[Japan's Naval Chief Rules Out Joint-US Freedom of Navigation Patrols](#)," Voice of America, September 28, 2016.

13 See Kyoko Hatakeyama, "Supporting Freedom of Navigation" in this volume.

14 For an overview of the differences of US and Chinese views on this issue, see Moritaka Hayashi, "[Military Activities in the Exclusive Economic Zones of Foreign Coastal States](#)," The International Journal of Marine and Coastal Law 27 (2012): 795–803.

In contrast, several states claim to regulate or prohibit foreign military activities in their EEZs.¹⁵ Of these, China, North Korea, and Peru have demonstrated willingness to use force to impose their EEZ claims. The counterargument made by China, for example, is that military activities on the high seas and in EEZs are unlawful based on the legislative spirit of UNCLOS and its requirement that the high seas be used only for peaceful purposes. China also questions the rights of navies to conduct operations, undertake exercises, and gather intelligence in other states' EEZs, as demonstrated by Chinese government statements and by requirements that foreign military vessels "obtain permission" in order to enter China's territorial sea. However, China's position on this issue is weakened by the fact that it selectively complies with the US and Japanese interpretation: the People's Liberation Army (PLA) Navy has itself conducted military activities within the EEZs of other nations without the permission of those coastal states. For example, the US Department of Defense has recorded several such incidents in the EEZs surrounding Guam and Hawaii.¹⁶ This type of selective compliance undermines the UNCLOS governance regime.

These examples show that rules regarding innocent passage and activities in EEZs are already in place in the UNCLOS regime to support the norm of freedom of navigation. In these examples, the problem is not necessarily the rules themselves but the lack of consensus on their interpretation and the lack of consistent compliance by states. To promote good governance, the United States, Japan, and likeminded countries must build support for interpretations of rules that support the norm of freedom of navigation and help to maintain open use of maritime spaces by a wide variety of actors. Building this consensus will not be easy; it will require building trust with and addressing the concerns of countries that are troubled by the implications of allowing

others to operate in their territorial waters and EEZs. Moreover, selective compliance with UNCLOS should be discouraged to avoid undermining the regime.

Rules for Maritime Zones

Although UNCLOS provides rules that define maritime zones (see Figure 1), these rules are contested by states who maintain excessive maritime claims, including China. Instead of following UNCLOS rules that allow states to claim EEZs and continental shelves, for example, China bases its claims in the South China Sea on a historical nine-dash line that it uses to lay claim to all major archipelagic groups in the South China Sea, including the Spratly and Paracel Islands, although many of these geographical features are not islands as defined by UNCLOS and do not therefore generate maritime rights. When states contest such rules, they challenge the basis by which the maritime common is defined.

Japan and the United States have both consistently stated their support for UNCLOS rules, encouraging countries to abide by them and calling out countries who do not. For example, the April 2021, US-Japan joint leaders statement "reiterated [their] objections to China's unlawful maritime claims and activities in the South China Sea and reaffirmed [their] strong shared interest in a free and open South China Sea governed by international law, in which freedom of navigation and overflight are guaranteed, consistent with the UN Convention on the Law of the Sea."¹⁷ Continued Japanese and US leadership in supporting for these rules will continue to be essential in the future.

However, it should be noted that the US Department of Defense also names Japan as one of 26 countries that make excessive maritime claims.¹⁸ Specifically, the United States does not recognize Japan's straight baseline claim in the Tsushima Strait, arguing that these baselines are not drawn in conformance with international law.¹⁹ In 2021, the US Navy

15 These include Bangladesh, Brazil, Burma, Cape Verde, China, India, Indonesia, Iran, Kenya, Malaysia, Maldives, Mauritius, North Korea, Pakistan, Philippines, Portugal, Thailand, and Uruguay. See Raul Pedroz, "Military Activities in the Exclusive Economic Zone: East Asia Focus," *International Law Studies* 90 (2014): 521.

16 Office of the Secretary of Defense, [Annual Report to Congress: Military and Security Developments Involving the People's Republic of China](#), 2013, p. 39.

17 The White House, [US-Japan Joint Leaders' Statement: US-Japan Global Leadership for a New Era](#), April 16, 2021.

18 US Department of Defense, [Annual Freedom of Navigation Report Fiscal Year 2021](#), April 2022.

19 For a detailed description of the US position on this issue, see US Department of State, [Limits in the Seas No. 120 Straight Baseline and Territorial Sea Claims: Japan](#), April 1998.

conducted a freedom of navigation operation in the vicinity of the Tsushima Strait, a move that was seen as a demonstration of US support for the rules-based international order, even when that order was being challenged by an ally.²⁰ While this disagreement has not caused notable tensions in the US-Japan relationship so far, from the perspective of jointly supporting the legitimacy of UNCLOS as a regime, it would be advantageous for the two countries to be on the same page in terms of rules for defining maritime zones.

Regime Legitimacy

Although the governance regime of the maritime domain is relatively well codified, it remains essential that major states continue to demonstrate support for its principles, rules, norms, and decision-making procedures. With respect to **decision-making procedures**, Annex VII of UNCLOS provides for four binding dispute settlement mechanisms: the International Tribunal on the Law of the Sea, the International Court of Justice, an Arbitral Tribunal, and a Special Arbitral Tribunal. Not all states who have ratified UNCLOS accept their authority, however.²¹ In particular, China expressly excluded compulsory dispute settlement in 2006, and its non-participation in UNCLOS decision-making procedures was showcased most notably when the Philippines brought a case against China regarding their maritime dispute in the South China Sea in 2013.²² In response, China declared that it would not participate in the arbitration and published a white paper in 2014 arguing that the tribunal lacked jurisdiction. China also refused to appoint any judges to the tribunal. When the case was decided by the Arbitral Tribunal in 2016 in favor of the Philippines, China refused to acknowledge the legitimacy of the decision.

Compliance with dispute resolution mechanisms is an important part of maritime governance. Japan and the United States have repeatedly affirmed their support for the 2016 tribunal decision.²³ For example, on the sixth anniversary of the tribunal ruling, the Japan's government released a statement saying, "The claim by China that it will not accept the award is against the principle of peaceful settlement of disputes in accordance with international law, in particular UNCLOS, and undermines the rule of law as a fundamental value of the international community."²⁴ Strong, consistent support from countries like Japan and the United States is necessary to bolster the legitimacy of UNCLOS decision-making procedures as broadly applicable. Selective compliance with decision-making procedures threatens the maritime governance regime. For example, China selectively upholds UNCLOS in some areas where the regime is in line with its own interests, and it is often criticized for this inconsistency. Japan and the United States should discourage this type of behavior and avoid falling into the same pitfall themselves.

Treaty ratification also remains an issue. Despite substantial support for UNCLOS among American companies and within the US government, the US Senate has not ratified the treaty. Initial opposition to the agreement was fueled by fears that provisions for the governance of deep-seabed mining would not be in line with US domestic interests. Concerns about sovereignty issues and environmental restrictions have also been raised. Former presidents George W. Bush and Barack Obama both advocated for ratification without success.

Lack of US ratification has not significantly threatened the legitimacy of UNCLOS because the United States has a policy of operating in a manner consistent with the regime. However, the credibility of the regime would be strengthened if the United States chose to ratify the agreement despite having to make compromises with its own national prefer-

20 Kyodo, "[US Navy conducted operation in Japan-claimed waters in December](#)," The Japan Times, April 6, 2021.

21 China expressly excluded compulsory dispute settlement in 2006. Australia, France, the United Kingdom, and other countries excluded or limited this possibility when they originally signed UNCLOS. The United States is not a party to UNCLOS and therefore is not bound by its dispute settlement mechanisms.

22 For an explanation of the Arbitral Tribunal process, see Carl Thayer, "[Who Decided the Philippines Versus China Case?](#)" The Diplomat, July 12, 2021.

23 See for example, Kyodo News, [Japan, US urge China to comply with tribunal ruling on South China Sea](#), July 2021, 2021.

24 Ministry of Foreign Affairs of Japan, [Six years since the issuance of the Arbitral Tribunal's award as to the disputes between the Republic of the Philippines and the People's Republic of China regarding the South China Sea \(Statement by Foreign Minister HAYASHI Yoshimasa\)](#), July 12, 2022.

ences. It would also give the US the ability to advocate for change within the UNCLOS regime and its institutions in ways that are not currently possible.

Fisheries Management

Depletion of fishery resources poses a critical threat to the maritime commons. One-third of commercial fish stocks are being harvested at biologically unsustainable rates, and 90 percent are fully exploited.²⁵ Overfishing has been incentivized by booming populations, growing demand for fishery products and employment in the fishery industry, and government subsidies that have increased overcapacity. Illegal, unreported, and unregulated (IUU) fishing also poses a significant threat.²⁶ At the same time, climate change has disrupted marine ecosystems, further endangering fisheries resources.

Japan and the United States are already members of numerous multilateral regional fisheries management organizations and parties to hundreds of global and bilateral agreements and arrangements.²⁷ These governance mechanisms provide important rules to help manage fisheries sustainably. In addition to strengthening this web of rules, it is necessary for Japan and the United States to continue to work together to build the capacity of countries to monitor and enforce these rules. These capacity building activities can be facilitated through a variety of channels, such as development aid. The coast guards of Japan and the United States also an important leadership role to play in building regional maritime capacity.²⁸

Human Rights at Sea

Slavery, forced labor, human trafficking, and irregular migration pose serious risks to the safety and security of individuals at sea. These problems have always existed, but new data has helped to expose the pervasiveness of these practices and to increase awareness. For example, one study found that 14–26 percent of 16,000 industrial fishing vessels are likely to use forced labor.²⁹ Although international human rights law applies both on land and at sea, it is difficult to enforce these laws outside national jurisdictions, which means that updated and new legal frameworks are necessary.

Discussions are ongoing about how UNCLOS could be modified to address these problems. Since the United States is not a party to UNCLOS, it cannot directly advocate for change within the regime. However, Japan has the ability to support reforms such as updating UNCLOS Article 99 (“Prohibition on the Transport of Slaves”) to apply to modern slavery and human trafficking. Such a revision could provide an additional tool to the international community when flag states cannot adequately prevent and punish the transport of slaves and to allow authorities to board ships suspected of conducting slave trade or human trafficking and conducting any necessary checks.³⁰ There is support for such reform among European countries, so Japan could work with such like-minded countries to promote change. There have also been alternative proposals to support human rights at sea by amending the draft instrument under UNCLOS on the conservation and sustainable use of marine biological diversity of areas Beyond National Jurisdiction (BBNJ Treaty, also known as the Treaty of the High Seas).³¹

25 Food and Agricultural Organization of the United Nations, [The State of World Fisheries and Agriculture](#), 2018.

26 IUU fishing includes fishing that takes place without permission or that violates the rules of states or regional fisheries management organizations (RFMOs), when catches are not reported or misreported to the national jurisdictional authorities or RFMOs, when fishing occurs but is inconsistent with marine conservation responsibilities, and when conducted by a flag state that is not party to that RFMO.

27 See for example, National Oceanic and Atmospheric Administration, [International and Regional Fisheries Management Organizations](#), 2022; National Oceanic and Atmospheric Administration, [2020 International Fisheries Agreement Book](#), December 17, 2020.

28 See John Bradford, “Expanding US-Japan Coast Guard Cooperation Globally” in this volume.

29 Gavin G. McDonald et al, [Satellites Can Reveal the Global Extent of Forced Labor in the World’s Fishing Fleet](#), Proceedings of the National Academy of Sciences, 2020.

30 House of Lords International Relations and Defence Committee, [UNCLOS: The Law of the Sea in the 21st Century](#), March 2022.

31 For example, see Human Rights at Sea, [Legal Briefing Note on Proposed Amendments Incorporating International Human Rights Law into the Draft Agreement under the United Nations Convention on The Law of the Sea on The Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction](#), September 2019.

Action is also possible outside the UNCLOS regime, by building on other regimes in the international system. For example, the Maritime Labour Convention (MLC) was established under the International Labor Organization in 2006 to address seafarer's rights, including conditions of employment, accommodation, food, and health. Although there are criticisms that this convention does not go far enough in protecting seafarer's rights, it provides some improvement to previous legal frameworks. As of October 2022, 101 countries have ratified the convention, and its effects extend beyond their parties to the convention because vessels from non-signatory states that attempt to enter ports of signatory states may arrest and penalties for non-compliance.³² Japan ratified the convention in 2013, and the US Coast Guard set forth proposed policies and procedures regarding the inspection of US vessels for voluntary compliance with MLC 2006.³³ Striving for improvement in these and other practices outside the auspices of UNCLOS would also help to support human rights at sea.

Green Shipping

The shipping industry makes a major contribution to global economic prosperity, with about 90 percent of the world's trade being transported by sea. Although shipping is considered relatively environmentally friendly compared to air or land transport, the high sulfur content of fuel is a serious problem, and there are other emissions from shipping due to waste, oil, waste water, chlorofluorocarbons, and nitrogen oxides. Consequently, shipping takes a major toll on the environment, counting for about three percent of the world's greenhouse gas emissions.

As major shipping states, Japan and the United States can implement green-port infrastructure and clean-bunkering fuels, setting norms for a sustainable shipping industry. The two countries have already begun to conceptualize these efforts—along with Australia and India—as part of the

Quad's goal to form a green-shipping network.³⁴ They have contributed to the efforts of the Quad Shipping Task Force, and they should continue to push forward to develop green shipping corridors among Quad countries. For example, leading ports such as Los Angeles, Mumbai Port Trust, Sydney (Botany), and Yokohama have been invited to form a network dedicated to greening and decarbonizing the shipping value chain. Japan and the United States should also look for opportunities to broaden the coalition for sustainable shipping governance to include other likeminded countries where possible to maximize their impact.

Summary

There are clear opportunities for Japan and the United States to promote best practices in the governance of the maritime domain. Due to the well-developed maritime regime, rules, norms, and decision-making procedures often already exist, but there is a need to build greater support and consensus around them. Some of the areas for US-Japan engagement involve the enforcement and legitimation of existing rules related to freedom of navigation, defining maritime zones, and fisheries management, as well as supporting existing decision-making procedures and institutions. Other issues such as human rights and environmental sustainability will necessitate the creation of new norms and rules, both within the UNCLOS regime and through other existing international and regional structures.

The Outer Space Domain

While the history of outer space governance is relatively shorter than that of the maritime domain, the outer space regime similarly consists of a collection of principles, rules, norms, and decision-making procedures that have been developed at the international, regional, and national level. The foundation of the global space governance system was established by the 1967 Outer Space Treaty (OST). It was later joined by the 1968 Rescue Agreement, the 1972 Space Liability Convention, the 1976 Registration Convention, and the 1984 Moon Treaty (see Table 1). However, these treaties

32 International Labour Organization, [Ratifications of MLC, 2006](#), 2022.

33 Paul F. Thomas, [Draft Guidance Regarding Voluntary Inspection of Vessels for Compliance With the Maritime Labour Convention](#), Federal Register, vol. 78, no. 28, February 11, 2013, p. 9709.

34 White House, [Fact Sheet: Quad Leaders' Summit](#), September 24, 2021.

Table 1. Foundational Agreements of Global Space Governance (as of November 2022)

Entered into Force	Full Name of Treaty (Common Name)	No. of Parties	No. of Signatories
1967	Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty)	112	23
1968	Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (Rescue Agreement)	98	23
1972	Convention on International Liability for Damage Caused by Space Objects (Space Liability Convention)	98	19
1976	Convention on Registration of Objects Launched into Outer Space (Registration Convention)	72	3
1984	Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (Moon Treaty)	18	11

Compiled by author.

left many unresolved questions, and later agreements such as the Moon Treaty were met with only limited acceptance by the international community.

Like the oceans, outer space has become increasingly crowded and contested in recent decades. When the global space governance regime was established, only a few actors—namely, the United States and the Soviet Union—had access to spaceflight or launch capabilities. However, as space technology has advanced and diffused, more states and private actors have ventured beyond Earth’s atmosphere.³⁵ Today, 72 nations possess space agencies and 14 are capable of orbital launch.³⁶ In addition to defense contractors, companies such as Stratolaunch Systems, SpaceX, Blue Origin, and Virgin Galactic have also become players in outer space.

These developments have created regulatory difficulties that were not anticipated by the multilateral agreements originally established to govern outer space in the 1960s and 1970s.³⁷ This has led some to call for the creation of more specific rules to regulate new space activities.³⁸ In some cases, these rules implement and clarify ideas introduced in existing treaties; however, in other cases, new norms and rules are necessary.

There is a lack of consensus among major powers about the future of global space governance, and the United States and Japan have the capacity and opportunity to shape the development of its norms and rules in the future. Important dialogue is already taking place in forums such as the US-Japan Comprehensive Dialogue on Space, and continued

35 Govella, [Technology and Tensions in the Global Commons](#).

36 Sophie Goguichvili, Alan Linenberger, Amber Gilette, and Alexandra Novak, [The Global Legal Landscape of Space: Who Writes the Rules on the Final Frontier](#), Wilson Center, October 1, 2021.

37 Joan Johnson-Freese and David Burbach, “[The Outer Space Treaty and the Weaponization of Space](#),” *Bulletin of the Atomic Scientists* 75, no. 4 (2019): 137–41.

38 Gennady M. Danilenko, “[International Lawmaking for Outer Space](#),” (2016) 37 *Space Policy* 179.

attention is needed to the ways that the United States and Japan might work toward shaping a new international framework while also addressing their respective national security imperatives. This section discusses opportunities for both countries to collaborate on space situational awareness and space traffic management, orbital debris, anti-satellite tests, and space resources.

Space Situational Awareness and Space Traffic Management

The number of objects in space has increased rapidly and will continue to do so in the future. For example, more than 4,800 active satellites representing over 40 nations currently orbit the Earth, with an additional 25,000 satellites projected to join their ranks by 2030.³⁹ While over 86 percent of all satellites, probes, landers, crewed spacecraft, and space station flight elements launched into Earth's orbit or beyond have been registered with the UN Secretary-General, however, many space objects remain unregistered, which creates hazards.⁴⁰ There is need for the development of a more reliable registration system for space objects, as well as to further enhance space situational awareness (SSA), the ability to characterize and track space objects and their operational environment. The United States and Japan already have a history of sharing data and linking up their SSA systems, and they can further expand these efforts in the future, bilaterally and in collaboration with likeminded partners.⁴¹

Moreover, it is necessary to go beyond awareness of space objects to active management of space traffic. Space traffic management (STM) has been featured in national-level space policies, including the US Space Force's Space Policy Directive 3 in 2018. Instituting such a system on a broader level would require coordinating national space regulations, increasing transparency, and engaging in confi-

dence-building measures.⁴² The United States and Japan have the opportunity to play a leadership role in the establishment of such a system, which will entail building a coalition on norms and rules governing this issue within multilateral organizations like the UN and International Telecommunication Union, as well as through regional organizations like the Asia-Pacific Regional Space Agency Forum. Outreach to emerging space states in Asia and Latin America will also be an important part of this process.

Space Debris

Millions of pieces of man-made space debris are orbiting the Earth at an average speed of 22,000 miles per hour. These objects include nonfunctional spacecraft, abandoned launch vehicle stages, mission-related debris, and fragmentation debris, as well as natural meteoroid debris. Space debris poses risks to spacecraft, satellites, and other valuable space assets of the United States, Japan, and other countries. In the long term, space debris could render certain regions of orbit unusable.

Both NASA and the European Space Agency have reached the conclusion that mitigating debris alone is insufficient, and that active debris removal is needed. There are opportunities for Japan and the United States to tackle the technical, legal, and political challenges involved in cleaning up space debris. The private sector has a role to play in developing the techniques and strategies for this process. Japanese companies such as Astroscale and ALE are already testing systems to remove debris from space.⁴³ The US Space Force has also reached out to the private sector for ideas on how to solve this problem.⁴⁴

Beyond these techniques, however, there is much work to be done in establishing the norms and rules to make active debris removal possible. For example, there is no agreed-upon definition of debris, nor is there consensus

39 Mir Sadat and Julia Siegel, [Space Traffic Management: Time for Action](#), Atlantic Council, August 2, 2022.

40 United Nations Office for Outer Space Affairs, [United Nations Register of Objects Launched into Outer Space](#), 2022.

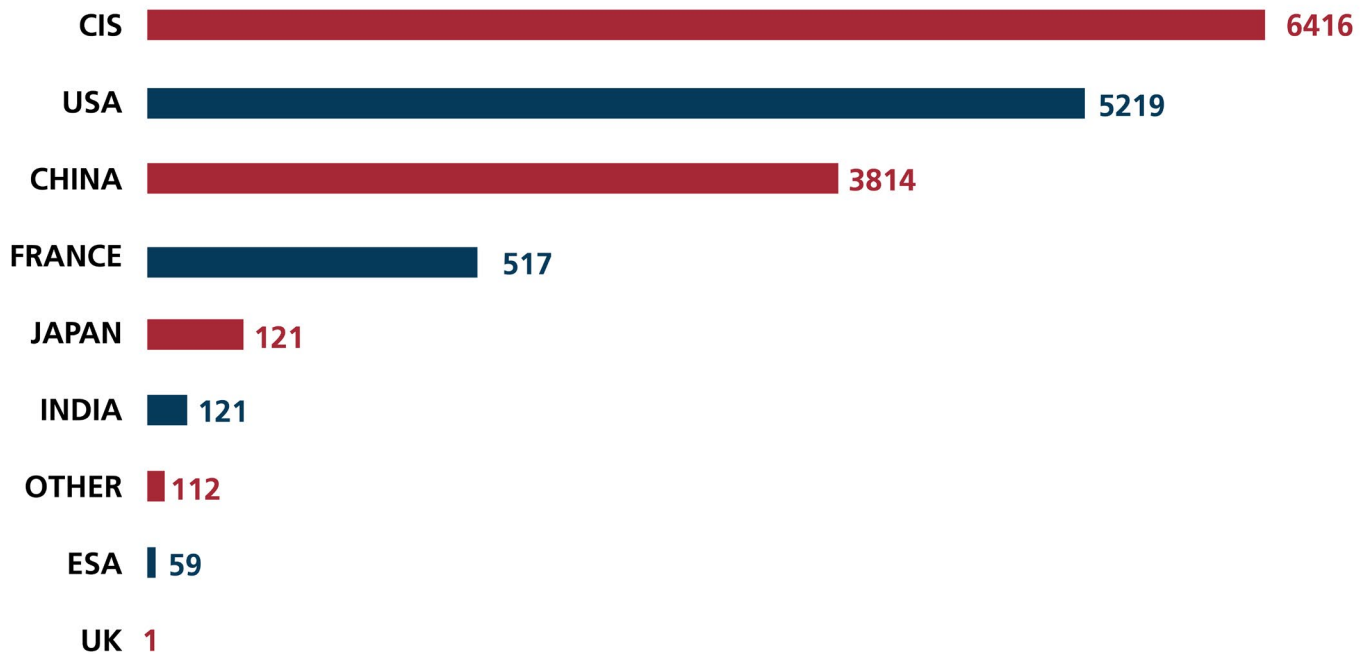
41 See for example, US Mission Japan, [Joint Statement – The Seventh Meeting of the Japan-US Comprehensive Dialogue on Space](#), August 27, 2020.

42 See for example, Kazuto Suzuki, [Debate on Space Situational Awareness and Space Traffic Management in Japan](#), 2020.

43 Julian Ryall, [Japan Takes the Lead in Cleaning Up Space Junk](#), DW, April 9, 2021.

44 Kristin Houser, [Space Force Backs 125 Teams to Take Down Orbital Debris](#), Freethink, May 7, 2022.

Figure 2: Number of Spent Rocket Bodies and Other Pieces of Debris by Country (August 2022)



Catalogued by the US Space Surveillance Network as of August 4, 2022. NASA, Orbital Debris Quarterly News, September 2022. The Commonwealth of Independent States (CIS) includes Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, and Uzbekistan, but the debris recorded are acknowledged to have been generated predominantly by Russia. The European Space Agency (ESA) has 22 member states. For a complete list, see https://www.esa.int/About_Us/Corporate_news/Member_States_Cooperating_States.

on which types of debris should be removed. Sovereignty issues quickly come into play when discussing who is legally authorized to remove space debris. Moreover, there is a need for greater transparency and confidence building to reduce perceptions of debris removal as a potential threat to space assets.⁴⁵ Japan and the United States have the potential to shape these evolving discussions to safeguard the sustainability and safety of space, in cooperation with other likeminded partners.

Anti-Satellite Tests

Anti-satellite (ASAT) tests create orbital debris while also contributing to the weaponization of space. While the Outer

Space Treaty prohibits the placement of nuclear weapons in space, it does not address other types of weapons, such as ASAT weapons that exist to target space assets. The Secure World Foundation estimates that at least 16 debris-creating ASAT weapons tests have been carried out to date. The United States, Russia, China, and India have demonstrated their ability to destroy satellites with ground- or air-launched missiles. China's 2007 ASAT test alone created 3,537 pieces of debris, and Russia's 2021 ASAT test created a field of around 1,500 debris.⁴⁶ Figure 2 shows the number of spent rocket bodies and other pieces of debris by countries as catalogued by the US Space Surveillance Network.

In April 2022, the United States announced that it would not conduct destructive, direct-ascent ASAT missile testing

⁴⁵ For an overview of these challenges, see Brian Weeden, "Overview of the Legal and Policy Challenges of Orbital Debris Removal," Space Policy, 2011.

⁴⁶ Marcia Smith, [NASA Confirms Russian ASAT Test Doubled Debris Risk to ISS](#), Space Policy Online, January 18, 2022.

and that it would seek to establish this as a new international norm.⁴⁷ Canada, New Zealand, Japan, and Germany have since joined the United States in banning this specific type of ASAT test, which is an important step in preventing the weaponization of space and mitigating the creation of space debris. The United States and Japan can play a leadership role in building broader coalitions to promote this norm in the future.⁴⁸

Space Resources

Due to the ambiguity of the Outer Space Treaty on management of space resources, states have taken it upon themselves to establish practice based on their own national priorities and interests. In 2020, Japan, the United States, and six other countries signed the Artemis Accords, a set of 13 provisions establishing a principled framework for the sustainable exploration of the Moon and other celestial bodies, including the exploitation of their natural resources. Since then, a total of 21 countries and one territory have become signatories.

The Artemis Accords have been controversial because while they are based in the Outer Space Treaty, certain provisions go beyond implementation of the OST, introducing new concepts and principles.⁴⁹ Specifically, Section 10 states that the extraction of space resources does not inherently constitute national appropriation. Through this and other policies, Japan and the United States are incrementally shaping prospects for governance of space resources, creating new norms and principles. Moving forward, consultation among the two countries and likeminded partners will be essential to develop these practices in ways that establish appropriate extraction and use of space resources, which will be critical to the future of the outer space domain.⁵⁰

Summary

Technological change and diversification of actors in space are creating new opportunities and challenges in the outer space domain, which necessitates the strengthening of governance structures in some cases and the creation of new governance structures in others. Given the quickly evolving state of space governance, Japan and the United States have the opportunity to lead initiatives to enhance space situational awareness, develop systems for space traffic management, discourage destructive direct-ascent ASAT tests, and govern the extraction and management of space resources. Avoiding the weaponization of space continues to be an overarching challenge for Japan and the United States. The problem has been heightened in recent decades with the rise of China in outer space, and the militarization of space activities by many countries, including Japan and the United States themselves.⁵¹ These developments have prompted concerns about a new “space race,” and they pose a challenge to building trust and consensus in this domain.⁵² The United States and Japan will need to balance their national security concerns with creating a stable environment for responsible governance of this domain, building trust among an expanding set of stakeholders involved in outer space.

The Cyber Domain

In contrast to the maritime or outer space domains, cyberspace is a domain entirely constituted by technology and created by humans. While cyberspace may not seem to be a physical domain, its networks and infrastructure are actually located within specific states, and they are subject to national laws, rather than existing outside of sovereign control as in the case of the high seas. Since its origins in research funded by the US government in the 1980s, the cyber domain has grown into an expansive ecosystem that includes many stakeholders with diverse views on its proper governance.

47 The White House, [Fact Sheet: Vice President Harris Advances National Security Norms in Space](#), April 18, 2022.

48 For details, see Setsuko Aoki, “Banning Direct-Ascent Anti-Satellite (ASAT) Missile Tests” in this volume.

49 Rossana Deplano, “[The Artemis Accords: Evolution or Revolution in International Space Law?](#),” *International and Comparative Law Quarterly* 70, no. 3 (2021): 799–819.

50 For a more detailed discussion, see Saadia Pekkanen, “Developing State Practice for the Governance of Space Resources” in this volume.

51 See for example, Paul Kallendar and Christopher Hughes, “[Hiding in Plain Sight? Japan’s Militarization of Space and Challenges to the Yoshida Doctrine](#),” *Asian Security* 40, no. 1–2 (2018): 1–25.

52 James Clay Moltz, *Asia’s Space Race: National Motivations, Regional Rivalries, and International Risks*, Columbia University Press, 2012; Saadia Pekkanen, “[Governing the New Space Race](#),” *American Journal of International Law* 113 (2019): 92–97.

As with the maritime and outer space domains, there is disagreement over whether the cyber domain should be defined as a global common or enclosed into distinct national spaces. Advocates of including cyberspace as a new domain of the global commons point to the ways in which cyberspace is vast and difficult to control, as well as to the utility gained from its free and open use. Those such as the United States and European countries support public-private cooperation in the establishment of a governance regime, with a constrained role for government and rules that promote the broad accessibility essential to a common. Other states, including China, view an open Internet as a potential threat to state sovereignty and social stability and have advocated for the enclosure of the cyber domain into nationally defined areas with greater state involvement and less permissive access.

Unlike the maritime and cyber domains, however, cyber governance structures are much less developed. No comprehensive treaty governing cyberspace exists, though it is incorrect to think of the domain as ungoverned or lawless. States generally acknowledge that international law is applicable to cyberspace; however, they have tended to selectively apply these laws based on their own interests or the specifics of a particular situation. For example, the Budapest Convention on Cybercrime is an important agreement on cybercrimes and hacking, but Russia, China, North Korea, and Iran—countries who are major sources of such cyber activities—have not signed on.

Since 2004, governments have been active in a series of UN Groups of Governmental Experts (GGE) focused on information and communications technology. The reports resulting from these dialogues have generated lists of rules, principles, and voluntary non-binding norms that participating countries agreed applied to cyber activities. Discussions are continuing in the sixth GGE iteration and an Open-Ended Working Group. However, many current debates are about the creation of rules and norms rather than their maintenance or interpretation.

The United States and Japan share concerns about these developments and about increasing threats from cyberattacks and espionage. For Japan, the core objectives of its cyber diplomacy are to promote the rule of law in space,

develop confidence-building measures, and cooperate on capacity building (see Figure 3).⁵³ In addition to its participation in major global and regional frameworks such as the UN GGE, the G7, G20, ASEAN, and the ASEAN Regional Forum, Japan has also cooperated with the United States to pursue an open, interoperable, reliable, and secure Internet through dialogues such as the US-Japan Policy Cooperation Dialogue on the Internet Economy. This section discusses challenges related to conflicting norms of openness versus enclosure, privacy and data flows, cybercrime, human rights and digital authoritarianism, cognitive warfare, cyber defense norms, and sustainability.

Norms of Openness versus Enclosure

The tension between enclosure and openness exists in all domains of the global commons, but it bears emphasizing that these conflicting norms are fundamentally unresolved in the case of the cyber domain. This is very clearly reflected in the debates about whether states have sovereignty over portions of the Internet and what the appropriate role of government should be in cyber governance and regulation. As mentioned previously, major divisions exist between countries such as the United States and Japan, which advocate for a multi-stakeholder model of a relatively open Internet with a constrained role for government, and countries such as China and Russia, which favor enclosing the Internet into distinct national spaces where information is strictly controlled by government.⁵⁴ In particular, China's concept of "cyber sovereignty" and its "Great Firewall" provide models for other countries to follow in enclosing their own national cyberspaces.⁵⁵

53 Ministry of Foreign Affairs of Japan, [Japan's Cyber Diplomacy](#), 2022.

54 Jeffrey Lantis and Daniel Bloomberg, "[Changing the Code? Norm Contestation and US Antipreneurism in Cyberspace](#)," *International Relations* 32, no. 2 (2018): 149–72; Jinghan Zeng, Tim Stevens, and Yaru Chen, "[China's Solution to Global Cyber Governance: Unpacking the Domestic Discourse of 'Internet Sovereignty'](#)," *Politics & Policy* 45, no. 3 (2017): 432–64.

55 Sheena Chestnut Greitens, [Dealing with Demand for China's Global Surveillance Exports](#), Brookings Institution, 2020; and Freedom House, [Freedom on the Net 2018: The Rise of Digital Authoritarianism](#), 2018.

Figure 3: Pillars of Japan's Cyber Diplomacy

PROMOTION OF THE RULE OF LAW

Promoting discussions on the application of international law to cyberspace and the development of non-binding norms in peacetime.

CONFIDENCE-BUILDING MEASURES

Developing confidence building measures in peacetime to prevent cyberconflicts and escalations through enhanced transparency and stability.



CAPACITY BUILDING

Conducting capacity building and providing assistance for human resource development considering that security holes in other countries are risk factors for the entire world including Japan

Source: Adapted by author from Ministry of Foreign Affairs of Japan, [Japan's Cyber Diplomacy](#), 2022.

Since the debate over fundamental norms and principles of cyber governance is yet unresolved in the international system, there is a need for leadership from the United States, Japan, and other like-minded countries to engage in consensus building about the appropriate use of the Internet and its relationship to states and societies. This process will be essential to establishing and developing the associated rules and decision-making procedures that will govern the cyber domain.

Privacy and Data Flows

A related issue is whether, how, and by whom the flow of data should be regulated across national borders. Since data has become the fuel of the digital economy, it is important to minimize barriers to cross-border data transfers, but it is also essential to safeguard the privacy of the individuals who are the subjects of this data. The United States and the European Union have taken very different approaches to these questions. In 2018, the European Union introduced the General Data Protection Regulation (GDPR), which set a high bar for the data privacy of individuals in EU member states. It required the compliance of organizations operating

within the EU, organizations that sell goods or services to EU citizens, and organizations that monitor the behavior of data subjects in the EU. In contrast, the United States has traditionally taken a more hands-off approach that favors companies that collect and use personal data, though there are regulations that govern different sectors and types of data, such as the Health Insurance Portability and Accountability Act, the Gramm-Leach-Bliley Act, and the Federal Information Security Management Act.

Japan's former prime minister Shinzo Abe proposed Data Free Flow with Trust (DFFT) as a basic principle for rulemaking in cross-border data transfers, which was endorsed by the G20 in 2019. Japanese leadership was essential in promoting this principle, which calls for international rules that carefully protect sensitive data while allowing productive data to flow across borders.⁵⁶ Trust in safe data transfers is an important part of this equation, but one that is difficult to operationalize. Since 2019, there have been efforts to flesh out this general principle

⁵⁶ See James Lewis, "Governing an Expanding Cyberspace" in this volume.

with more specific norms, rules, and decision-making procedures, such as the 2021 G7 Roadmap for Cooperation on Data Free Flow with Trust.⁵⁷ Japan and the United States agreed to high-standard e-commerce rules in their Japan-US Digital Trade Agreement, and Japan also did the same in its Economic Partnership Agreement with the UK. These early steps are important, but there is still much work to be done by both Japan and the United States in fleshing out the DFFT principle and building broader regional and international support for it, which will require consultation and coordination between the two countries.

Cybercrime

The global annual cost of cybercrime is estimated to be \$6 trillion per year, approximately one percent of the global GDP.⁵⁸ Officially known as the Council of Europe Convention on Cybercrime, the Budapest Convention was the first international treaty to focus specifically on cybercrime, entering into force in 2004. It seeks to harmonize national laws related to cybercrime, support investigation of cybercrimes, and increase international cooperation to fight cybercrimes. Participating countries are required to adopt domestic legislation outlawing specific crimes and to adapt associated mechanisms and processes. A Second Additional Protocol to the Cybercrime Convention was signed by the United States, Japan, and 20 other parties in May 2022 to bring the protocol up to date and to enhance cooperation and disclosure of electronic evidence.

In addition to continuing to promote norms and rules to address cybercrime, implementing the Budapest Convention is an ongoing challenge for both developed and developing countries, and Japan and the United States have a role to play in facilitating cyber capacity building. Japan and the United States have made voluntary contributions to projects such as Cybercrime@Octopus, which assists countries worldwide to implement the Budapest Convention on Cybercrime and strengthen data protection and rule of law safe-

guards.⁵⁹ Japan also engages in cyber capacity-building with ASEAN member states through the ASEAN-Japan Cybercrime Dialogue. Support for these types of implementation and capacity-building initiatives will be key to addressing this challenge.

Human Rights and Digital Authoritarianism

When governments violate the privacy of their citizens, it poses threats to those individuals and to the governance of cyberspace as a whole. A cohort of countries is moving toward the model of digital authoritarianism pioneered by China, embracing extensive censorship, restrictive cybersecurity laws, and automated surveillance systems. China's Data Security Law increased data localization requirements and state access to personal information, and it introduced the possibility of extraterritorial application of Chinese data regulations. Social media manipulation, electoral interference, abusive data collection, and misinformation are also on the rise in many countries. Abuses of the cyber domain have also been spotlighted by the Russian invasion of Ukraine.

In April 2022, the United States, Japan, and over 60 partners launched the Declaration for the Future of the Internet, asserting their shared belief in the potential of digital technologies to promote connectivity, democracy, peace, the rule of law, sustainable development, and the enjoyment of human rights and fundamental freedoms.⁶⁰ This political commitment from a large coalition of partner countries is important. However, its norms must be interwoven into emerging forms of cyber governance at the national, regional, and global levels. This can be politically and operationally difficult, given the intertwining of these norms with domestic laws and regulations in each country. As they cooperate to shape international governance, Japan, the United States, and other likeminded countries must continue to consult and coordinate as they develop their own domestic practices.

57 G7 Digital and Technology Track, [G7 Roadmap for Cooperation on Data Free Flow with Trust](#), 2021.

58 Purplesec, [Cyber Security Statistics](#), 2022.

59 Council of Europe, [Project Cybercrime@Octopus](#), 2019.

60 The White House, [A Declaration on the Future of the Internet](#), April 2022.

Cognitive Warfare

Changes in technology have resulted in both cyberspace and cognitive space being defined as new operational domains that are at risk of attack. Cognitive space is threatened by the exploitation of information through propaganda and misinformation to influence the beliefs of populations, and hybrid warfare strategies also include such information manipulation as part of multifaceted attacks on adversaries. No substantial governance related to cognitive space and cognitive warfare exists at present.

Since the principles and norms underpinning this emerging area have yet to be defined, the United States and Japan have the opportunity to shape these discussions as they begin. Many of the initial steps involve actions such as collecting information, protecting critical infrastructure, expanding media literacy, strengthening cyber defense, and improving rapid response.⁶¹ However, the question of cognitive warfare is also deeply intertwined with questions of right and wrong about which there is often disagreement, so it will be essential for the two countries to consult and build consensus with other countries about these practices.

Cyber Defense Norms

In general terms, defensive approaches to cyber security have focused on prevention, detection, and response to cyber-attacks. This approach has been most common among countries, if only for reasons of technological capacity. However, as in other operational domains, the line between defensive and offensive tactics is not always clear in the cyber domain. In some cases, states have claimed that defense also involves proactively disrupting cyberattackers at the source, which can be viewed by other states as a cyber-attack in its own right. Norms about appropriate behavior in the name of national self-defense are still in development in the international system.

The United States and Japan have taken different approaches to cyber defense. Japan has a more defensive orientation that is more typical of other countries and is also consistent with its post-World War II constraints on

its national security policy.⁶² In contrast, the United States has pursued a more active approach to cyber defense based on the strategic concept of “defending forward” to disrupt malicious cyber activity at its source, including activity that falls below the level of armed conflict, and a doctrine of “persistent engagement” where operators constantly work to intercept and halt cyber threats, degrade the capabilities and networks of adversaries, and continuously strengthen the cybersecurity of the Department of Defense Information Network. Recent reports suggest that Japan’s government may be considering the introduction of an active cyber defense framework that is more similar to that of the United States, so there may be some growing convergence in these approaches; however, it is likely that the United States will continue to be more assertive in its cyber defense policy.⁶³

Moving forward, it is not necessary that Japan and the United States embrace the same norms with regard to cyber defense, but consultation and coordination between the two countries will be important to leverage their respective strengths and address shared concerns. They must also engage in discussions about these developing capabilities with other likeminded countries and work to build trust around cyber defense practices.

Sustainability

As in the maritime and outer space domains, sustainability and environmental considerations are increasingly important in the cyber domain. For example, the data centers that enable cloud computing require large amounts of electricity to run servers and to keep them cool. The technology sector consumes about seven percent of global electricity and generates close to four percent of global carbon emissions, which is more than the airline industry.⁶⁴ Some estimates suggest that the tech sector could account for as

61 For a more detailed discussion, see Motohiro Tsuchiya, “Governing Cognitive Warfare” in this volume.

62 Jason Healey, “[The Implications of Persistent \(and Permanent\) Engagement in Cyberspace](#),” *Journal of Cybersecurity* 5, no. 1 (2019): 1–15; and Benjamin Bartlett, “[Japan: An Exclusively Defense-Oriented Cyber Policy](#),” *Asia Policy* 15, no. 2 (2020): 93–100.

63 Yomiuri Shimbun, “[Active Cyber Defense Framework Could One Day Protect Japan](#),” *The Japan News*, September 13, 2022.

64 Maxime Efoui-Hess, “[The Unsustainable Use of Online Video](#),” *The Shift Project*, July 2019.

much of 20 percent of global electricity use by 2025.⁶⁵ To date, large companies such as Google, Facebook, Apple, Intel, and Amazon have promised to use renewable energy to power data centers, with mixed results. This area is one where governments in the United States, Japan, and other countries may be able to play a constructive role in setting standards and offering incentives for companies to engage in more sustainable practices.

Similarly, other cyberspace-based activities such as cryptocurrency mining have deleterious effects on the environment. Cryptocurrency mining often involves running computer programs to solve complicated mathematical problems that validate crypto currency transactions through “proof of work,” and this process requires a large amount of computing power and electricity. Some estimate that Bitcoin alone generates 121 terawatt-hours annually, which surpasses the annual energy usage of Argentina, and, in the United States alone, Bitcoin mining creates an estimated 40 billion pounds of carbon emissions due to the enormous amounts of computing power and electricity required.⁶⁶ The governments of the United States, Japan, and other countries may be able to incentivize the cryptocurrency industry to move away from proof-of-work validation toward other methods that are less destructive for the environment.

Summary

With many of the basic principles and norms underpinning cyberspace still in development, there is much scope for Japan and the United States to work together to shape the cyber governance regime and protect their shared values and interests. In some ways, the fundamental norms of cyberspace are still being debated, including the extent to which the domain should be open or enclosed. However, there are emerging governance structures that attempt to regulate privacy and data flows and cybercrime, and there are also opportunities for strengthening rules and norms in

the areas of human rights, cognitive warfare, cyber defense, and sustainability. In many of these areas, there is growing convergence between Japan and the United States, but continued bilateral dialogue is necessary, as is active coalition building with regional and global partners to establish and strengthen rule of law in this emerging domain to ensure open and secure access.

Insights from Across the Commons and Paths Forward

This paper has provided an overview of some of the key challenges that exist across the maritime, outer space, and cyber domains, as well as the opportunities for the United States and Japan to engage with one another to promote good governance in these global commons. The analysis reveals clear and persistent differences in the governance regimes of these domains, reflecting their different stages of maturity and the varying nature of the spaces and resources that they seek to govern. However, despite the many differences that exist across these three domains, there are also striking commonalities. In each of these domains, central issues of access to space and to resources continue to be debated, reflecting persistent tensions in stakeholders’ preference for enclosure or openness. In addition to emerging or persistent challenges to national security across the three domains, problems related to sustainability and human rights are also increasingly discussed. Resolving these dilemmas necessitates a look at the values of countries and how they want the world to look in the future. Will these spaces be open, or will they be closed? Who will control their spaces and resources? Who will protect their spaces, resources, and the people who live and work within their confines?

As governments, multilateral organizations, civil society organization, companies, and other stakeholders come together to answer these questions, this analysis demonstrates that there are promising opportunities for the United States and Japan to lead in strengthening and creating effective governance across the global commons. There are strong synergies in the values and interests of Japan and the United States in the maritime, outer space, and cyber domains. While differences in viewpoints exist between the

⁶⁵ Anders Andrae, [Total Consumer Power Consumption Forecast](#), Nordic Digital Business Summit, October 2017.

⁶⁶ Cristina Criddle, [“Bitcoin Consumes ‘More Electricity than Argentina,’”](#) BBC News, February 10, 2021.

two countries, there is tremendous scope for cooperation or at least coordination on multiple issues (see Box 2).

As Japan, the United States, and other countries move forward in tackling the governance of the global commons, this paper reveals several key themes that should be kept in mind:

Access versus Resource Exploitation

In each domain of the global commons, stakeholders have debated issues related to access and exploitation of resources. In the maritime and outer space domains, there

is relatively greater consensus on the norms and rules of access and navigation, while exploitation of resources in the deep seabed or on the Moon remains controversial and, to a large extent, hypothetical. In cyberspace, issues of access are core, and the resources of the Internet—such as cryptocurrency, perhaps—are even more nebulous to the stakeholders involved. Conceptually distinguishing between issues of access and issues of resource exploitation may be useful in understanding the divisions that persist among countries and in crafting compromises that meet the varying preferences of diverse stakeholders.

Creativity and Compromise

Many of the complex governance issues that exist in the global commons do not have easy or obvious answers. In most cases, stakeholders are being asked to compromise between their desire for control or privacy and their desire to maintain open access to these spaces and resources, with different stakeholders falling in different places on the spectrum between the two preferences. In many cases, creative governance structures that embrace reasonable compromises will be necessary to find enduring resolutions. As was demonstrated in the case of the maritime domain, these tensions are likely to endure even after governance regimes are established, so it is important to find the best solutions possible and to reevaluate these solutions as new knowledge and new strategic considerations emerge.

Building Consensus and Bolstering Legitimacy

The examination of the maritime domain also demonstrates that even in cases where rules and norms have been relatively well specified, their effectiveness is limited by the extent to which stakeholders embrace their legitimacy and comply with their directives. Formulating an agreement is difficult, but past experience across these domains has shown that agreements must be supported by robust norms, principles, and decision-making procedures that are considered broadly legitimate by stakeholders. Without these supporting structures, the most carefully crafted agreement will have only limited impact. Therefore, the work of countries like Japan and the United States is not just to promote

Box 2: Areas for US-Japan Leadership in the Global Commons

Maritime:

- Freedom of Navigation
- Rules for Maritime Zones
- Regime Legitimacy
- Fisheries Management
- Human Rights at Sea
- Green Shipping

Outer Space:

- Space Situational Awareness
- Space Traffic Management
- Space Debris
- Anti-Satellite Tests
- Space Resources

Cyberspace:

- Norms of Openness versus Enclosure
- Privacy and Data Flows
- Cybercrime
- Human Rights and Digital Authoritarianism
- Cognitive Warfare
- Cyber Defense Norms
- Sustainability

high-quality standards of governance but also to communicate the value of these governance structures to others and build consensus on their legitimacy.

Consultation, Coordination, and Cooperation

Japan and the United States bring considerable capability and influence to the issues discussed in this paper, but their respective resources and strategic positions may not always lend themselves to direct cooperation. For example, Japan is more constrained in some ways than the United States due to its defense-oriented security policy. However, these constraints have not prevented Japan from playing a leadership role in norm-building in ways that directly complement US initiatives. In specific cases, coordination between the two states may be a more effective way for them to leverage their respective abilities toward joint goals. For instance, in the case of UNCLOS, the United States is unable to advocate for change within the governance regime since it is not a party to the agreement; however, Japan can take this approach while also coordinating with the United States on maritime governance measures outside UNCLOS. In other cases, simple consultation may be sufficient on issues that are still emerging or where their national views are divergent or still in development. It may also be advantageous for the private and public sectors to take different approaches, depending on the issue.

US-Japan Engagement as a Building Block

This paper and the policy briefs in Part 2 of this volume elaborate upon the opportunities that exist for the United States and Japan to advance the state of governance in the global commons. However, this bilateral engagement is clearly only the beginning: the two countries will need to build coalitions with additional partners in order to provide effective solutions to these international problems. US-Japan engagement can serve as a strategic building block in the complex process of shaping global governance. Bilateral collaboration can be helpful in aligning their national interests and policies in preparation for pursuing expanded initiatives with additional countries in minilateral groupings such as

the Quad or to form coalitions with countries to coordinate positions in large forums such as the United Nations. Much of this activity is already in progress. The United States and Japan each have webs of bilateral agreements with countries around the world, and they often coordinate with one another in regional and global forums. However, there is still further opportunity for the two countries to exercise joint leadership in promoting good governance across the maritime, outer space, and cyber domains.

Institutional Strength and Durability

Many kinds of governance exist today, some of which are more comprehensive, formal, and binding, and others of which are ad hoc, less formal, or voluntary. The international system is currently entering an era of minilateralism, where states increasingly prefer to work bilaterally or in small coalitions of willing partners, such as the Quad. Moreover, in many cases, companies or other non-state actors have taken the lead in formulating voluntary forms of governance to fill gaps in existing structures. These incremental steps are important, but to the extent possible, it will be important to institutionalize the governance of the global commons to enable stable and predictable behavior. Although it can be difficult to work through the established UN system, for example, ad hoc and voluntary systems of regulation may not be as robust in times of crisis.

Multi-Stakeholder Coalitions

Engagement among governments is not sufficient to promote good governance in the global commons. The international system is currently more open, more networked, and less state-centric than it once was. Non-state actors have become increasingly engaged in the maritime, outer space, and cyber domains in both positive and negative ways. Even among state actors, participation in the global commons has expanded to a great variety of states than ever before. This trend toward pluralization or democratization of the commons creates new challenges and new opportunities. Navigating complex governance problems requires engaging with all the actors who have a stake in these domains—including multiple agencies across national governments,

local governments, multilateral organizations, civil society, and companies—and trying to incorporate their interests and regulate their behavior appropriately. The governments of the United States and Japan will need the support of partners in their own societies as well as others to ensure the future stability and prosperity of the maritime, outer space, and cyber domains.

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Expanding US-Japan Coast Guard Cooperation Globally

John Bradford

Introduction

Maritime governance is a foundational cornerstone for global trade and international security. Generally speaking, governance is composed of two key elements: the deliberate establishment of common rules and the effective enforcement of those rules. The former involves the standards by which states and non-state actors behave in relation to one another, and the latter involves the mechanisms and methods to ensure that all actors behave in conformity with those standards. As competition between major states reemerges as the dominant narrative in international relations discourse, discussions of maritime governance increasingly focus on China's proclivity to either try to change or to simply ignore existing rules and norms. While this behavior is a global concern, it is far from the only threat to maritime governance. In fact, for many maritime communities, the most problematic challenges are immediate and continual, posed by non-state threats such as terrorists and criminals, natural disasters, and failures to meet health and safety standards. These communities are often unable to rely on the protection of their own governments due to a lack of state capacity. Therefore, improving states' capacity to enforce rules when faced with the full range of maritime threats is the most powerful step that can be taken to advance maritime governance globally.

As the world's two greatest maritime nations, the United States and Japan are uniquely positioned to lead a global effort to improve state maritime capacity and promote maritime governance. By doing so, they will benefit themselves and their friends and partners by creating a proverbial rising tide to lift all boats. In particular, expanded cooperation between the world's two most capable maritime governance forces, the US Coast Guard (USCG) and the Japan Coast Guard (JCG), can play an invaluable role in this effort.

To do this, these organizations should expand their newly minted joint SAPPHIRE (Solid Alliance for Peace and Prosperity with Humanity and Integrity on the Rule of law-based Engagement) to have a global remit, and they should exercise coordinated diplomatic leadership worldwide.

The United States and Japan as Leading Maritime Powers

Oceans cover more than 70 percent of the Earth's surface and around 90 percent of global trade is carried by those waters.¹ About 40 percent of the global population is in coastal communities, and nearly 20 percent of the animal protein consumed by humankind comes from the sea. However, the seas are some of the world's least governed spaces. Piracy was estimated to cost the global economy about \$12 billion in 2020, and it has been on the rise during the coronavirus pandemic.² Illegal, unregulated, and unreported (IUU) fishing costs the legitimate global economy about twice that. The value of the illicit drug trade is over \$400 billion.³ These financial figures serve as markers of scale, but the real costs are the losses of life, health, and safety in coastal communities, especially in developing economies. Unfortunately, these communities are often hardest hit because their states lack the capacity to provide good maritime governance. Environmental destruction and climate change will multiply these impacts, so action needs to be taken sooner rather than later.

- 1 Organisation for Economic Co-operation and Development, [Ocean Shipping and Shipbuilding](#).
- 2 Jeff Dunsavage, [Piracy Is Still a Risk; Pandemic Hasn't Helped](#), The Triple-I Blog by Insurance Information Institute, August 10, 2021.
- 3 International Chamber of Shipping, [New Edition of Leading Industry Guidelines on Combatting Drug Trafficking](#), April 15, 2021.

The United States and Japan are not immune to these maritime challenges, but, as the world's leading maritime powers, they have much greater capacity to address them. The United States and Japan are the first and third largest importers—and the second and third largest exporters—of goods by sea respectively. Japan is a leading shipbuilding nation, particularly in the construction of sophisticated ship classes. Japan and the United States are home to the second and fourth largest merchant fleets respectively, giving them great influence over and responsibility for the global shipping network and the safety of mariners. New York and Tokyo are centers of gravity for the marine insurance system, and this industry shapes the cost of carrying cargo and the transit routes selected. The United States and Japan are also the world's leading sources of maritime-related overseas development assistance, infrastructure investment, and maritime domain awareness technology. In terms of hard power, the US Navy and Japanese Maritime Self-Defense Force are arguably the two most significant navies when one considers their hull count, experience, advanced technology, and partner-enabled deployability. In sum, the two countries have the greatest stake in healthy global maritime governance and the greatest potential to make a positive difference.

Coast Guards at the Vanguard

Given the scope of the challenges, the US Coast Guard (USCG) and the Japan Coast Guard (JCG)—as the most visible stewards of US and Japanese maritime governance—should step up and do more, both on their own and with each other. With just over 42,000 active duty servicemembers and 259 cutters, the USCG is the world's largest and most capable coast guard. The JCG weighs in at second place globally with nearly 14,000 personnel and 145 vessels of similar size. By doubling its number of large patrol ships in the last decade and combining several organizations to form the Chinese Coast Guard (CCG), China has come to rival the JCG's order of battle; however, it lacks experience on the high seas. Whereas both the USCG and JCG have decades of experience deploying far from their shore, engaging with partners, and proving themselves as world-class capacity-building agencies, the CCG operates in China's near seas and has essentially no history of positive engagement with

partners. In fact, the CCG often undermines governance by providing armed escorts for illicit fishing fleets and seeking to assert Chinese control over waters where international law directs that China holds no jurisdiction.

In sum, the two countries have the greatest stake in healthy global maritime governance and the greatest potential to make a positive difference.

The USCG and JCG have a history of close coordination. In 2010, they signed a memorandum of cooperation that laid the foundations for improved interoperability and mutual support. Since then, the USCG and JCG have come together to practice interdicting simulated foreign vessels operating illegally inside Japanese waters, conduct joint counter-narcotics activities around Guam, and execute search and rescue operations in Hawaii.⁴ They have also expanded cooperation to make their capacity-building activities in third countries more effective and more efficient. This coordination is perhaps most advanced in the Philippines, where they regularly invite each other when organizing training events and exercises with the Philippine Coast Guard. This includes US participation in the first multinational coast guard exercise in Southeast Asia, a 2017 event hosted by Japan and the Philippines.⁵

In May 2022, the two Coast Guards signed the annexes to the 2010 Memorandum of Cooperation to create SAPPHIRE, a cooperative program to promote the objectives of their national Free and Open Indo-Pacific strategies. Referred to by the USCG as a “perpetual operation,” SAPPHIRE supports maritime governance by establishing operating procedures for combined operations, training and

4 US Indo-Pacific Command, [US, Japan Coast Guards Conduct Joint Counter-narcotics Exercise in the Pacific](#), June 10, 2022, and US Coast Guard Pacific Area, [US, Japan Coast Guards train together in East China Sea](#), August 27, 2021.

5 John Bradford, “[Japan Takes the Lead in Western Pacific Maritime Security](#),” Asia Policy 16, no 2 (2021): 87.

capacity building, and information sharing.⁶ These enable the USCG and JCG to improve their efficiencies by pooling resources and complementing each other's strengths. The procedures will also create standing, standardized frameworks that lower the barriers related to conducting cooperative activities with third parties and provide templates for building international networks of more efficient cooperation. This will directly result in improved state capacity to enforce the rules and norms that enable the safe and secure use of maritime space.

Opportunities to Foster Global Maritime Governance

SAPPHIRE encompasses all the annual interactions between the USCG and JCG, almost all of which take place in the Indo-Pacific.⁷ Focusing on the Indo-Pacific is a reasonable starting place, but considering the importance of global maritime governance, budgets should be increased so that the two organizations can expand their leadership around the world. On the US side, a small reduction in the Army's garrison force could enable reallocation of funds away from the Department of Defense to provide a windfall for the USCG, an organization that has learned to be thrifty out of necessity. On the Japanese side, budget deficits make the situation tougher, yet the government has already pledged to expand defense spending in the coming years. Some funding could be wisely redirected to the civilian JCG.

Increased global deployment of US and Japanese Coast Guard liaison officers, training teams, cutters, and aircraft would be welcomed by the international community. States are increasingly aware of the costs associated with maritime security challenges and are keen for their coast guards and maritime police to rise to the challenges. Coast guard cooperation is also less likely to aggravate political sensitivities or enflame security dilemmas the way that navy-to-navy cooperation sometimes does. Japanese involvement can also blunt the domestic political costs and imbalanced power

dynamics that can disincentivize some developing nations from working too closely with the United States.⁸

Whereas new capacity-building activities will require meaningful resource investments, expanded diplomatic coordination offers low-cost opportunities to expand global maritime governance capacity by driving international cooperation, setting standards, and creating force-multiplying effects.

Whereas new capacity-building activities will require meaningful resource investments, expanded diplomatic coordination offers low-cost opportunities to expand global maritime governance capacity by driving international cooperation, setting standards, and creating force-multiplying effects. Japan already has a particularly strong track record in this area. In 2004, the JCG, the Japanese Ministry of Foreign Affairs, and the Nippon Foundation cooperatively hosted the first Asian Heads of Coast Guard Meeting, which has since become the leading venue of regional maritime security cooperation.⁹ Building on the success of this series, the same Japanese partners hosted the first Coast Guard Global Summit in 2017 with 40 countries, territories, and institutions participating. Japan hosted two subsequent Coast Guard Global Summits in 2019 and 2021, and the United States could complement this effort by hosting the fourth summit in 2023. These meetings are more than just opportunities to meet—they sponsor working groups that take real action to develop the maritime governance capacity of individual states and the cooperative capacity of varied maritime security stakeholders. Those stakeholders included the state governments that are saddled with the

6 United States Coast Guard, [US, Japan Coast Guards Formally Expand Cooperation](#), May 19, 2022.

7 Seapower, [US, Japan Coast Guards Formally Expand Cooperation](#), 20 May 2022.

8 John Bradford, "Force Multiplier: US-Japan Alliance Modernization and Maritime Southeast Asia," *Asian Survey* 62, no. 2 (2022): 678–81.

9 The Nippon Foundation, [The 10th Heads of Asian Coast Guard Agencies Meeting](#), September 30, 2014.

bulk of maritime governance responsibility as well as the shipping industry, fishing communities, offshore resource activities, and other users of the sea.

Conclusion

In response to the mounting challenges faced by maritime governance, the USCG and the JCG have the opportunity and responsibility to take an expanded role in leading the development of global maritime security capacity. With the initiation of SAPPHIRE, they have taken an important step in this direction. A longer stride, one that reaches around the world, would be invaluable, given humankind's reliance on good order at sea and the growing threat maritime secu-

rity challenges are posing to global health, sustainability, and economic viability. Empowering the world's top two coast guards to be more internationally active and more closely coordinated will require the United States and Japan to invest in those organizations, but given the rate at which maritime security challenges are expanding, fostering global governance now will be a bargain in comparison to the costs of delay.

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Supporting Freedom of Navigation

Kyoko Hatakeyama

Introduction

Since people began setting sail in search of undiscovered lands in the 15th century, freedom of navigation in the sea has benefited many states in ways such as fishing and commerce. This customary principle was confirmed in the 1982 United Nations Convention of Law of the Sea (UNCLOS). Although it expanded the rights of some sovereign nations by establishing Exclusive Economic Zones (EEZ) and broadening the area of territorial sea, UNCLOS firmly endorsed freedom of navigation. Since then, the principle has contributed to the expansion of maritime trade, propelling the growth of the world economy.

However, due to divergent interests among states when drafting UNCLOS, the law ended up with ambiguous wording. Consequently, there is no one interpretation of freedom of navigation shared among states. In addition, China justifies its assertive behavior in the East and South China Seas through its own interpretation of this concept, challenging the rules and norms codified in the UNCLOS. Given the importance of the maritime route for many states, erosion of freedom of navigation as a public good inevitably affects their economies. It also affects the military projection capability of some states, resulting in changes in security architecture and the regional maritime order. This paper argues that freedom of navigation, an essential principle of the global maritime commons, is under increasing stress and that the United States and Japan should play a proactive role in maintaining and strengthening this principle.

Conflicting Interpretations and the Challenge from China

Even if states agree to freedom of navigation per se in the sea, various interpretations of freedom of navigation exist. For example, while some states—including the United States

and Japan—comprehensively support freedom of navigation in maritime areas, some—including China, Taiwan, Indonesia, South Korea, and Vietnam—demand prior notification or permission for foreign military vessels to enter the territorial sea despite innocent passage being permitted under UNCLOS.¹ Some states—such as India, Malaysia, and Thailand—require prior permission for foreign military activities in their EEZ, while UNCLOS does not specify this point.

States have also interpreted UNCLOS rules for defining territory in different ways. China argues that the Paracel Islands and Spratly Islands are archipelagos akin to Indonesia, the Philippines, or Fiji. UNCLOS permits these states to draw expansive “archipelagic baselines,” and China uses this as justification for drawing straight lines around the Paracel Islands and Spratly Islands. However states such as the United States and Australia regard this claim as excessive because China is not an archipelagic state.² In addition, China requests prior permission for foreign vessels to enter the archipelagic sea; a further contradiction because, although archipelagic states designate the route for foreign vessels to pass through, the innocent passage of foreign ships is permitted under UNCLOS.³ Thus, the lack of consensus on an interpretation of UNCLOS has generated controversy over the appropriate interpretation of freedom of navigation.

China’s assertive behavior based on its interpretation of UNCLOS has stood out as a particular challenge, as the

1 Sam Bateman, “Some Thoughts on Australia and the Freedoms of Navigation,” *Security Challenges* 11, no. 2 (2015): 59.

2 7th Fleet Public Affairs, [7th Fleet Destroyer Conducts Freedom of Navigation Operation in South China Sea](#), July 12, 2022; Government of Australia, [The Permanent Mission of the Commonwealth of Australia to the United Nations’ Note Verbales](#), July 23, 2020.

3 Bateman, “Some Thoughts on Australia and the Freedoms of Navigation”: 58.

country has employed its military muscle to justify its claims. For instance, China has argued for its historic rights to the entire sea encircled by the “nine-dash line,” which is groundless according to a 2016 decision by an Arbitral Tribunal constituted under UNCLOS. However, China has refused to accept the decision. By claiming historic rights and disregarding the tribunal’s decision, China implicitly undermines freedom of navigation. Moreover, China’s adoption of its Coast Guard Law, which allows its coast guard to use force against foreign ships in areas allegedly under its jurisdiction, shows its determination to defend its claims and enforce its interpretation of freedom of navigation. Given China’s military capability and the inability of international organizations to enforce international law, acquiescing to Chinese claims will weaken the principle of freedom of navigation over time.

One may think that China’s claims and its attempts to impose its interpretations of freedom of navigation should not be interpreted as challenges to the region. However, while China has stated its commitment to guaranteeing freedom of navigation in the South China Sea, its assertive behavior—exemplified by the Scarborough Shoal incident and its disregard for the international tribunal’s ruling in the Philippines’ favor—makes its assurance untrustworthy. Moreover, the Chinese interpretation of freedom of navigation applies to only non-military vessels; it asserts that the principle of innocent passage is not applicable to military vessels. The interpretation allows China to deploy its military projection capability freely but does not allow other states to do the same. China’s military control of the South China Sea will lead to the emergence of a new reality and erode the freedom of navigation as a common good.

How Can the United States and Japan Strengthen Freedom of Navigation?

The lack of an agreed-upon understanding of freedom of navigation has created room for states to argue for their individual interpretations. Moreover, China’s excessive claims and ensuing coercive action are eroding the principle of freedom of navigation. To sustain freedom of navigation and continue to enjoy the benefits provided by global

commons, the United States and Japan should cooperate to reduce the interpretative gaps among states and to stop Chinese coercion.

First, given the different interpretations of freedom of navigation among the states, the United States and Japan should promote a common understanding of the principle—not an easy task, since there is no single pathway to forming a consensus. But through close and frequent communication and negotiations, they can convey the importance of maintaining common goods and reduce the gaps in interpretation. Joint exercises and training can also lead to a common understanding, as standardized and routinized action necessarily engages underlying norms and rules.⁴ In these ways, states may be able to minimize differences in interpretation or find a middle way to reduce tensions.

To sustain freedom of navigation and continue to enjoy the benefits provided by global commons, the United States and Japan should cooperate to reduce the interpretative gaps among states and to stop Chinese coercion.

Second, the two countries should employ a division of labor in which the United States underpins the principle of freedom of navigation with its military power and Japan argues for the universal value of rule of law. To demonstrate the rejection of China’s excessive claims and its attempts to change the status quo, the US military presence in the region is indispensable. Since no overarching authority to enforce international law exists in the world, maintaining rules and norms sometimes requires endorsement by substantial power. The US presence as a counterbalance to China and its firm resolve will help to prevent China’s coercive action from impairing freedom of navigation.

4 Kyoko Hatakeyama, “A Middle Power’s Roles in Shaping East Asian Security Order: Analysis of Japan’s Engagement from a Normative Perspective,” *Australian Journal of Politics and History* 65, no. 3 (2019): 466–481.

Yet, emphasizing competitive aspects between the United States and China makes other Asian states anxious because they do not wish to choose between the two countries.⁵ While they prefer to depend on the United States for their security, they do not want to relinquish the economic benefits they derive from China. As the “ASEAN Outlook on the Indo-Pacific” shows, ASEAN members emphasize inclusiveness of the Indo-Pacific region rather than the “free and open Indo-Pacific,” which carries the connotation of excluding China.⁶ Given ASEAN’s dilemma, Japan needs to emphasize the universal value of the rule of law and economic prosperity to create an environment conducive to common understanding. Capacity building support and assistance in quality infrastructure projects will also serve to create such an environment, providing ASEAN with options. While maintaining close coordination with the United States, Japan should send a message to the region that the two countries are keen to contribute to maintaining a public good.

Third, to strengthen the principle of freedom of navigation, the United States and Japan need to garner broader support from other states. They could look to like-minded partners such as Australia and the EU to strengthen public goods. Although India is not an active player and takes a cautious approach, in particular to security challenges, the Quadrilateral Security Dialogue provides a good platform to take the lead in promoting a shared understanding

of global commons. When the principle is challenged by various interpretations and excessive claims, obtaining wide support from many states is essential to defend and strengthen it.

Conclusion

Freedom of navigation is an essential principle of the global maritime commons that is under increasing stress due to gaps in interpretation and China’s coercive behavior. The United States and Japan should play a role in maintaining and strengthening this principle through soft and hard approaches. To reduce the interpretative gap and promote common understanding, both states need to argue for the importance of the principle and to strive to reach a common understanding through communication and negotiation. This soft approach should be underpinned by US military presence in the region to prevent states from taking coercive action that undermines the principle of freedom of navigation. A combination of soft and hard approaches will contribute to supporting and maintaining this essential principle.

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5 Prime Minister’s Office Singapore, [PM Lee Hsien Loong’s Interview with BBC for Talking Business Asia](#), March 14, 2021.

6 [ASEAN Outlook on the Indo-Pacific](#), June 23, 2019; Yoshihide Sogoya, “What the Biden-Suga Summit Means for the Region,” East Asia Forum, April 23, 2021.

Developing State Practice for the Governance of Space Resources

Saadia M. Pekkanen

Introduction

We are at a historic moment in the space domain with many unfolding trends, some of which are stressing governance underpinned by international space law: there are more states, there are unprecedented commercial technologies and opportunities, and there is a slide toward weaponization in the context of great power competition.¹ As states struggle to balance these trends with their own national interests, they are keenly aware that looming ahead is the governance of space resources—one example can be found on the permanently shadowed regions of the Moon’s poles, where there are multiple confirmations of water molecules.² Moving beyond lunar exploration, dominant players like the United States and China are aiming to sustain settlements on the Moon.³ If things go as projected, there are tangible civilian, commercial, and military gains for these players and their allies at the competitive nexus of space resources and emerging technology frontiers.

The real struggle in this unfolding drama is about what guides states, what empowers them, and what also restrains them with respect to resources in the global commons, a concept that does not have one authoritative meaning but is broadly understood as areas outside the jurisdiction of any country.⁴ This paper assesses the idea of global commons in the case of space resources, a topic that is often seen as pitting commercial progress against international space

law. It focuses on finding principled pathways forward in the present geopolitical flux. This paper makes two practical points about the governance of space resources, at a time when the technologies for their exploitation remain unproven but rivalries over their control are imaginable. First, it matters what states sign and consent to be bound by. Second, it matters what state practice is and where it is headed. Despite the legal and policy controversies, the reality is that leading states, such as the United States and Japan, are already incrementally shaping prospects for governance of space resources. How they anchor and deepen their allied efforts will have a significant bearing on peaceful outcomes involving space resources.

The Nature of the Controversy

Controversies about global commons in the space domain are not uniform, especially if seen through an “enabling” and “constraining” lens.⁵ Consistent with the 1967 Outer Space Treaty (OST) as well as policy pronouncements by leading space powers, such as the United States and Japan, the basic understanding of the global commons as areas outside of state jurisdiction is not controversial in terms of getting to and moving around in space. Indeed, it is critical for enabling free and open navigation for all interested spacefaring countries.

The idea of global commons is, however, more controversial if presented as constraining the economics of space resources. The controversy arises, in part, over whether commercial ownership of space resources is lawful, given

1 Saadia M. Pekkanen, “[Governing the New Space Race](#),” *American Journal of International Law Unbound* (2019).
2 National Aeronautics and Space Administration, “[There’s Water on the Moon?](#),” NASA Science: Earth’s Moon, News, November 5, 2020.
3 Andrew Jones, “[China Targets Permanently Shadowed Regions at Lunar South Pole](#),” *Spacenews*, May 27, 2022.
4 John Goerhing, “[Why Isn’t Outer Space a Global Commons?](#),” *Journal of National Security Law & Policy*, June 3 (2021).

5 Henry Hertzfeld, Brian Weeden, and Christopher Johnson, [How Simple Terms Mislead Us: The Pitfalls of Thinking About Outer Space as a Commons](#), paper presented at the International Astronautical Congress, Jerusalem, Israel, October 12–16, 2015; and Goerhing, “Why Isn’t Outer Space a Global Commons?”

obligations and prohibitions in the OST as well as regulatory aspirations set out in the 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (better known as the Moon Treaty or MOON). In the present legal architecture, are such directions prohibited outright or permissible under some conditions? Setting aside the absurdity of zeroing in on a single common space resource, these interpretive matters are not settled. They do, however, draw attention to the space treaties that states sign, consent to be bound by, and subsequently interpret in line with their interests.

Despite the legal and policy controversies, the reality is that leading states, such as the United States and Japan, are already incrementally shaping prospects for governance of space resources.

Article II of the OST is emphatic on the principle of non-appropriation and precludes states from recognizing property rights in outer space, including the Moon and other celestial bodies. This constricts, as of January 2022, the behavior of the 112 full parties to the OST, not all of them equal in terms of space technologies and capabilities. Further, even the countries who have signed the OST do not necessarily share similar views of Article II.

The text of Article II.5 of the Moon Treaty gives “expression” to the Moon and its resources as the common heritage of humankind, particularly through the establishment of an “international regime...to govern the exploitation of the natural resources of the Moon as such exploitation is about to become feasible.” Legally, these provisions bind only 18 signatories of the treaty to date, with space heavyweights like the United States, Japan, China, and Russia notably absent as parties to MOON. The provisions nevertheless fuel clashing policy positions on the commercial exploitation of space resources via an “international regime,” such as the International Seabed Authority established under the United Nations Convention on the Law of the Sea, which exists for the maritime domain.

Evolving Interpretations of Resource Governance

Amid unresolved interpretive debates, how can states reduce uncertainties for supervising commercial space activities consistent with their international legal obligations? The evolution in space lawmaking means that attention must be paid to what states and their national legislatures do, not just what lawyers, analysts, and diplomats debate in global settings. Some of the newer trajectories represent an “emerging structural change” in how law and policy will likely be shaped for actors in the new space race: from negotiated outcomes on the international plane to the crucial interface of national legislation that extends OST principles to nongovernmental actors.⁶

We are beginning to witness the emergence of “actual state practice for the purposes of customary international law.”⁷ The United States, with its innovative dominance in space technologies, looms large in these trajectories and has historically set trends in space governance. For example, the US claim of exclusive jurisdiction over resources of the continental shelf near its territory was novel in 1945, but it eventually became part of international law as coastal states found themselves advantaged with similar rights and claims.⁸

This history resonates in the contemporary space domain. The United States passed the US Commercial Space Launch Competitiveness Act in 2015 and, more pointedly, Executive Order 13914 in 2020 to continue dealing with uncertainty about legal rights and expectations in recovering space resources.⁹ These national acts were contro-

6 Brian Israel, “[Space Resources in the Evolutionary Course of Space Lawmaking](#),” *American Journal of International Law Unbound* (2019).

7 Gershon Hasin, “[Developing a Global Order for Space Resources: A Regime Evolution Approach](#),” *Georgetown Journal of International Law* (2020).

8 Aaron Boley and Michael Byers, “[US Policy Puts the Safe Development of Space at Risk](#),” *Science*, October 9, 2020.

9 P.J. Blount and Christian Robison, “[One Small Step: The Impact of the US Commercial Space Launch Competitiveness Act of 2015 on the Exploitation of Resources in Outer Space](#),” *North Carolina Journal of Law & Technology*, December 1 (2016); US Executive Office of the President, [Encouraging International Support for the Recovery and Use of Space Resource](#), Executive Order 13914 of April 6, 2020, 85 FR 20381, April 10, 2020.

versial for many in the international space law and policy community because, among other things, the United States was seen as unilaterally asserting a right to the commercial ownership of resources, repudiating the constraining economic idea of a global commons and rejecting multilateral governance.¹⁰ But US maneuvers were consistent with its longstanding interpretation of OST Article II, which held that there were no property rights for celestial “resources in place” but maintained support for “resources removed from their place.” Moreover, they allowed the United States—and any other states that follow—to remain tethered to the principles of the OST.¹¹ At this historical stage, the idea of global commons pertaining to resources on the Moon and other celestial bodies is being driven by this interpretation.

Other states such as Luxembourg, the United Arab Emirates, and Japan are beginning to go down the same interpretive pathways as the United States. Watchful of their own interests and keen to position in the new space race, they have followed suit particularly with respect to national legislation related to space resources. Twenty-one countries have also joined the US-led Artemis Accords, designed for civil exploration and use of the Moon and other celestial bodies.¹² The purpose and scope of the accords make clear that they provide “operational implementation of important obligations” in the OST and other instruments. In Section 10.2, the signatories affirm outright that the “extraction of space resources does not inherently constitute national appropriation under Article II of the Outer Space Treaty.”

US and Japanese Leadership in Establishing State Practice

Although the profitable commercialization of space resources is not yet a reality, it is foreseeable that there will be political rivalry over their control. The United States is helping to shape governance that might lessen the pros-

pects of such conflicts, but it will need allies in this quest if peaceable outcomes are to prevail. Among its formal allies is Japan, a country with a formidable range of space capabilities and considerable diplomatic clout.¹³ Japan also has long experience in national space legislation centered on the OST, focused on upholding its supervisory responsibility, imposing strict standards for public safety, protecting victims from damage, and promoting space business.¹⁴ Driven by threat dynamics, Japan has begun to change its policy approaches in the global commons, including outer space.¹⁵ Since the early 1990s, it has also built up extensive networks and partnerships through its leadership of the Asia-Pacific Regional Space Agency Forum (APRSAF).¹⁶

How might the United States and Japan together contribute to the governance of space resources? Their allied efforts should reaffirm and elevate the OST in three principal ways: tethering, interpreting, and communicating.

Tethering

First, the centerpiece of any strategy should continue to be tethered firmly to the Outer Space Treaty. It is impossible to imagine anything like this treaty of principles coming into being today. The OST is the most legitimate means of persuasion for the largest number of states, based on the very principles they are legally obliged to uphold. Building interpretive clarity on principles will be of practical use to all stakeholders as circumstances change and technologies evolve. It is not merely enough to strive for legal clarity,

10 Boley and Byers, “US Policy Puts the Safe Development of Space at Risk,” P.J. Blount, “[Another Pyrrhic Victory: The White House’s Latest Executive Order on Space Mining](#),” [spacewatch.global](#), April 23, 2022.

11 Israel, “Space Resources in the Evolutionary Course of Space Lawmaking.”

12 National Aeronautics and Space Administration, [The Artemis Accords](#), October 13, 2020.

13 Saadia Pekkanen, “[Neoclassical Realism in Japan’s Space Security](#),” in Robert Pekkanen and Saadia Pekkanen (eds.), *The Oxford Handbook of Japanese Politics*, New York, NY: Oxford University Press, 2021; Saadia Pekkanen, “[Thank You for Your Service: The Security Implications of Japan’s Counterspace Capabilities](#),” *Texas National Security Review*, October 1, 2020.

14 Setsuko Aoki, “[Domestic Legal Conditions for Space Activities in Asia](#),” *American Journal of International Law Unbound* (2019).

15 Kristi Govella, [Crafting Policy for Contested Commons: Insights from Japan’s Approach to the Outer Space, Cyberspace, and Maritime Domains](#), University of British Columbia, School of Public Policy and Global Affairs Joint Policy Paper Series, June 16, 2020.

16 Saadia Pekkanen, “[China, Japan, and the Governance of Space: Prospects for Competition and Cooperation](#),” *International Relations of the Asia-Pacific*, September 2 (2020).

but to also build consensus on what, beyond just rhetorical posturing, can happen when the ensuing legal obligations are not upheld. Such tethering presents opportunities to empower space diplomacy, inviting other states to cross-recognize and reinforce interpretations in a legal ripple effect that can be consequential over time.

Interpreting

Second, the incremental evolution of state practice based on one interpretation of one OST principle (in other words, non-appropriation) is an important test case for the evolution of other principles. Working in concert with the signatories of the Artemis Accords, allied efforts can focus on clarifying other principles that will be practically important in the governance of space resources, such as due regard and harmful interference. They should also scrutinize how and whether a framework of international organizations, as set out in OST Article VI in conjunction with OST Article XIII, can instrumentally connect to their national legislation for supervising private space resources activities.¹⁷ If nothing else, these moves can help build a pragmatic recognition of mutual interests with a wide swathe of the spacefaring community. On these fronts, the ongoing work under the United Nations Committee on the Peaceful Uses of Outer Space related to “potential legal models” and “legal gaps” for exploring, exploiting, and utilizing space resources presents opportunities for allied engagement and persuasion.¹⁸

Communicating

Finally, the emergence of state practice is still in its early stages, and it will take allied work to have it be more widely accepted. A people-centered, bottom-up strategy is necessary for bridging gaps between experts and the societies in which they work. This means not just raising public aware-

ness about principled interpretations through a wide set of multilateral, bilateral, regional, and academic venues, but also convincing states, their national stakeholders, as well as citizens that emerging space frontiers may benefit their own economies, societies, and everyday lives in concrete ways. APRSAF can be important in this mission, especially through its newer national space legislation initiative that can also be a vehicle for bringing in more signatories to the Artemis Accords or leading collaborative thinking on a data-driven definition of safety zones. A consortium of universities, with their technical and policy expertise, can also build durable platforms for regular outreach involving students, professionals, and the public.

Conclusion

The technologies to extract space resources remain a work in progress, and the commercial profitability of such ventures is unclear. But political contestation over space resources has already begun, crisscrossing international legal regimes and national legislation. How and whether this unfurling contestation will resolve peaceably is critical for safety, security, and sustainability in space. It requires serious, vigilant, and principled responses at a time of geopolitical flux in the international space order.

While state practice will remain critical for international rulemaking over the long term, the United States and its allies like Japan need to engage with their counterparts on these fronts more immediately. To do that they need a far more united and integrated space diplomacy, which confirms the principles of the Outer Space Treaty and can reinvigorate the prospects for building bigger and more inclusive coalitions for space. How they tether, interpret, and communicate their policy paths forward on the basis of this longstanding treaty will anchor and legitimate what they do in the matter of space resources—and, importantly, who and how many others they can do it with as they forge forward.

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¹⁷ Frans von der Dunk, [Article VI of the Outer Space Treaty ‘in the European Context’](#), Space, Cyber, and Telecommunications Law Program Faculty Publications, University of Nebraska-Lincoln College of Law, 2008.

¹⁸ United Nations General Assembly, [Report of the Legal Subcommittee on Its Sixty-First Session, Held in Vienna From 28 March to 8 April 2022](#), Committee on the Peaceful Uses of Outer Space, April 19, 2022.

Banning Direct-Ascent Anti-Satellite (ASAT) Missile Tests

Setsuko Aoki

Introduction

Space-based data is indispensable to the everyday lives of people everywhere—there is virtually no region in the world where citizens do not benefit from the results of space activities. Likewise, data taken by military satellites have provided transparency among competing states and assisted in producing a series of arms control agreements such as the Partial Test Ban Treaty (1963), the Anti-Ballistic Missile Treaty (1972), and the latest New START Treaty (2011). Thus, space-based data helps to promote a safe and secure society.

However, this space-based data is threatened in part by destructive anti-satellite (ASAT) tests, which generate substantial amounts of space debris and contribute to a more congested and therefore less safe orbital environment that could lead to frequent collisions between space objects. Moreover, ASAT testing can provoke other states to conduct their own ASAT tests, leading to a vicious cycle. Banning ASAT tests should be a top priority for ensuring the good governance of outer space, and the United States and Japan can play an important role in promoting a global norm against direct-ascent ASAT tests.

The US Proposal for an Anti-Direct-Ascent ASAT Norm and Japan's Initial Response

The United States and the USSR stopped conducting destructive ASAT tests in 1986 during the Cold War era. That moratorium continued for over two decades, and ASAT tests were widely seen as a thing of the past—until China destroyed its own satellite with a ballistic missile in 2007. This event proved that a destructive ASAT test was possible in the 21st century, despite creating space debris that could result in harmful interference with other states' peaceful space activ-

ities. And if not for China's ASAT test, India might not have conducted its own ASAT test in March 2019. Just after its successful ASAT test, India's Prime Minister Narendra Modi tweeted that "India stood tall as a space power" and added that the country would be stronger and more secure.¹ This reference to security suggests that India's destructive ASAT test aimed at deterring China by showing that it possessed the same capability. Most recently, Russia conducted an ASAT test in November 2021 for the first time since 1982, suggesting that more countries may follow suit. This chain reaction must be stopped.

Against this backdrop, on April 18, 2022, US Vice President Kamala Harris announced that the United States would not conduct destructive, direct-ascent ASAT missile testing and would seek to establish this as a new international norm in space activities. The idea that the United States would unilaterally commit to such a norm and encourage other countries to do so is not unrealistic from the point of view of national security considerations. On the contrary, this proposal seems quite reasonable as it does not seek the complete abolition of ASAT tests, nor the complete prohibition of destructive ASAT tests. The target is a type of ASAT test using a direct-ascent missile, and this is the very type of "space weapon" which is the most successful, matured, and inexpensive—and therefore available to many actors. In fact, for their ASAT tests, China, India, and Russia used direct-ascent, terrestrial-based medium-range ballistic missiles converted for use in outer space.

¹ Narendra Modi. "[#MissionShakti is special for 2 reasons: \(1\) India is only the 4th country to acquire such a specialised & modern capability. \(2\) Entire effort is indigenous. India stands tall as a space power! It will make India stronger, even more secure and will further peace and harmony.](#)" Twitter, March 27, 2019.

To stop states and non-state actors that intend to destroy a satellite using a ground-based direct-ascent missile, a new norm to prohibit this type of ASAT test must be pursued. Canada and New Zealand joined the United States in banning destructive direct-ascent ASAT weapons on May 9 and July 1, respectively, and Japan and Germany joined them on September 12. Japan declared that it “commits not to conduct destructive, direct-ascent anti-satellite (ASAT) missile testing and joins the US commitment announced in April” in order to actively promote discussions in the international fora concerning the development of norms of responsible behavior in outer space. Japan is amending its National Security Strategy for the first time since 2013 for release in December 2022. It seems almost certain that the new strategy will specify the country’s policy to work with the United States and other like-minded states to establish necessary norms and rules as responsible behaviors in space with “no direct-ascent ASAT missile testing in space” as the top priority for space security.

Opportunities for US-Japan Cooperation

How can the United States and Japan work together in making this an established norm in outer space? A three-tiered approach would be effective. First, a forum in which to develop this norm has been set already thanks to the UK-led UN General Assembly (UNGA) Resolution adopted in 2020, titled “Reducing space threats through norms, rules, and principles of responsible behaviors.”² This resolution led to a discussion at an UNGA-established open-ended working group (OEWG) that began in May 2022. While it usually takes time to nurture a norm or rule in the UNGA as 193 states are involved, this is nevertheless a very important forum since it can give a norm or rule the authenticity and authority that can be granted only by the UN. Like-minded states including the United States and Japan can work together closely to convince other states—including about 120 Non-Aligned Movement states—in the

UN. Although it has been stagnant since its establishment in 1979, the Conference on Disarmament (CD) should also be used as a forum to table this proposal as a Transparency and Confidence-Building Measure (TCBM), since the CD is the only international intergovernmental organization to authentically negotiate multilateral disarmament issues. Due process is important to obtain universal support.

To stop states and non-state actors that intend to destroy a satellite using a ground-based direct-ascent missile, a new norm to prohibit this type of ASAT test must be pursued.

The second tier of US-Japan cooperation should focus on using regional forums to increase active supporters. Especially promising forums are the ASEAN Regional Forum (ARF) and the Asia-Pacific Regional Space Agency Forum (APRSAF). Japan and the United States are members of ARF, and APRSAF has been led by Japan since 1993. ARF was established in 1994 to foster open, constructive dialogue and consultation on political and security issues in the Asia-Pacific region. In the space security context, ARF has proved to be an effective forum for exchanging views on space debris issues and prospects of the better TCBMs in outer space. Japan and the United States could co-sponsor setting up an inter-sessional support group meeting under ARF to disseminate and promote the idea of “no direct-ascent ASAT missile testing in space” as a critical TCBM. As for APRSAF, although it is not a place in which to exchange views on security issues, it is a promising venue for outreach. The United States and Japan can jointly introduce the idea of a norm against direct-ascent ASAT tests to deepen understanding of the US commitment and to garner support. In addition, the Japan-EU Strategic Partnership Agreement, which provisionally entered into force in 2019, could be leveraged, as it covers space as one sector for cooperation. Japan and the EU could collectively express their will to support the US proposal using this mechanism.

The third tier includes the G7, the Quadrilateral Security Dialogue, and other groupings of like-minded countries.

2 United Nations General Assembly Resolution 75/36, [Reducing space threats through norms, rules and principles of responsible behaviors](#),” December 16, 2020.

The United States and Japan could use these forums to take concrete steps toward establishing norms and rules against direct-ascent ASAT missile testing. These like-minded states could also make national strategies and space policies supporting the banning of the destructive direct-ascent ASAT missiles.

Finally, it would be desirable for Japan to be invited to join the Combined Space Operations (CSpO) and even AUKUS—the security pact between Australia, the United Kingdom, and the United States—in the near future. Japan will soon meet the conditions to be a member for both CSpO and AUKUS as it has been developing national security-related requirements including relevant cyber security standards. Japan is now accelerating the enhancement of the security conditions in this regard by implementing newly made policies and laws such as the Economic Security Promotion Act adopted in May 2022.

Conclusion

Japan's September 2022 declaration was an important first step in promoting a new norm against direct-ascent ASAT missile tests. This declaration should be reiterated as a part

of Japan's space security policy in its new National Security Strategy for release in December 2022. In order to make this an internationally established norm, a three-tiered approach seems effective. This would leverage international intergovernmental organizations such as the UN and CD; regional forums, especially those rooted in the Asia-Pacific region and focusing on security issues and/or space utilization; and various minilateral mechanisms of like-minded countries. Such multifaceted efforts will enable the United States and Japan to gain active support from countries of various backgrounds, which is essential to formulate a new norm. Both space safety and space security would be greatly improved by preventing further destructive ASAT tests using direct-ascent missiles, by avoiding the creation of additional space debris and decreasing the sense of threat. The United States and Japan can certainly play an important role in making this happen.

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Governing an Expanding Cyberspace

James Lewis

Introduction

Cyberspace, the immense and expanding construction of networks and devices connected over the internet, creates powerful economic and political forces that make it both a source of growth that no country can renounce and a source of instability because of its effects on politics, security, and commerce. Cyberspace governance, given the centrality of the internet and the digitization of economies, is now one of the most important and complicated issues for international relations, shaped by the demands for sovereign control of technology and by geopolitical conflict.

A governance system that is largely reliant on market forces and self-regulation, the 20th-century multistakeholder inheritance upon which we rely today is no longer seen as adequate. The original ideology of the internet, and the governance framework derived from it, imagined cyberspace would become a borderless global commons where states would play a minimal role and a multistakeholder community of companies, civil society, and governments would share authority equally. This approach has had some success, most notably in ensuring interoperability and the technical operations of the internet, but it has proved inadequate for privacy and security. As the internet grows more important, nations asserted sovereign control over data in order to protect their values and citizens. The original multistakeholder model lacked both legitimacy and authority. Agreement on what should take its place is slowed by the conflict between authoritarian regimes and democracies and by the lack of adequate mechanisms for negotiation—the United Nations (UN) will not provide this given the many states with competing views. In this fractured negotiating landscape, the United States and Japan have an opportunity to shape cyberspace governance.

Existing Discussions of Cyberspace Governance

Governance is being discussed and debated in a range of formal settings, including the UN, the Asia-Pacific Economic Cooperation (APEC) forum, Brazil, Russia, India, China, and South Africa (BRICS), and the Organization for Economic Cooperation and Development (OECD). The most progress has been made toward global agreement on norms for responsible state behavior at the UN First Committee (Disarmament and International Security). At its first Open-Ended Working Group (OEWG), attendees were able to agree on norms developed in 2015. Winning all member states' formal agreement to the UN Group of Government Experts-developed norms—and to regular dialogue in the UN—was a major step for governance.

However, the OEWG is now of limited value, chiefly because there is a lack of consequences for a failure to observe the agreed norms and little idea of what should follow them. While it is routinely hailed by national governments, there is scant attention from senior political leaders beyond reiterating what has been agreed. Mere reiteration will not produce the needed next steps in governance. A second OEWG is chartered to last another five years (which has led some observers to call it the “eternal OEWG”). Like its predecessor, it has been able to reaffirm the existing agreement and provide expanded explanatory language, but it has not been able to go beyond this. Some diplomats have lauded this defense as a success, but reiteration is not progress. This First Committee effort, which began in 2004, may have now run its course.

A proposal for a Program of Action (a UN mechanism for addressing issues outside of its committee structure) for cybersecurity seems to lack any direction. A Russian proposal for a new cybercrime treaty now being discussed in the Third

Committee lacks consensus on how to move forward and faces disputes over the treatment of human rights. Other UN committees and bodies are also taking up internet governance issues, and the recent appointment of an experienced diplomat as Envoy on Technology by the Secretary General may lead to some progress at a global level.

Disputes in a Fractured Negotiating Landscape

However, there are so many disputes—over privacy, sovereignty, security, human rights, and internet commerce—that these efforts should only be seen as the beginning of what is a fragmented progress toward digital governance. The problem of internet governance is a reflection not only of the disruptive effects of what is now a mature and essential technology but, more importantly, the effect of the broader political contest. In this context, global stability is unattainable. Russia's leader longs for a return to Soviet glories and wishes to replace the status quo that is often referred to as the “liberal world order.” China also works to replace this order with one that recognizes what its leaders believe is their rightly dominant position in world affairs and, like Russia, gives state concerns priority over the rights of citizens. Both countries are united by a dislike of the United States and the post-1945 system of rules and agreements that it created with its allies. This currently makes global agreement impossible to reach, which in turn makes stability incredibly difficult to achieve.

The negotiating landscape is fractured. Most nations see the UN as the preferred setting for the discussion of governance issues, but geopolitical conflict and global political turmoil limits its effectiveness for the foreseeable future. The United States has not defined an approach that addresses the demand for sovereignty, and its recent Declaration for the Future of the Internet largely defends the status quo and gained little international support.¹ The EU seeks the straightforward extra-territorial application of its own rules, which it justifies, depending on the audience, as best defending European or universal values, but there are

concerns about embracing a cumbersome process created in Brussels without the involvement of other nations.

The problem of internet governance is a reflection not only of the disruptive effects of what is now a mature and essential technology but, more importantly, the effect of the broader political contest.

China has its own proposals for governance that offer a state-centric approach that constrains private actors in data collection and use, but not the Chinese state. The EU and Chinese rule sets do not map closely with each other. There are significant differences over data protection, security, and sovereignty between them as well as with the status quo approach endorsed by the United States. Competing rule sets, a lack of coordinating mechanisms, and an absence of common principles creates the potential for discord and competition among cyber governance regimes. The obstacles to global agreement mean that to make progress on the governance problem, states have turned to groups defined by region, size, or shared values.

Roles for the United States and Japan

Creating an agreed-upon framework that establishes trust and stability in cyberspace would serve all democratic nations better than the status quo or proposed alternatives. Creating this would entail negotiations even if there were agreement on general principles. Major obstacles lie ahead. The desire for sovereignty—in part a reaction to US dominance—is one. That cyberspace has become a zone of active conflict is another. With widely divergent views, any agreement will likely not be global and progress toward common standards will be incremental. This means that governance has devolved to regional organizations, where there is potential for progress toward governance structures. Regional bodies offer an advantage as they are more attuned to national interests, which are increasingly focused on respect of sovereignty and on economic development. However, the

¹ The White House, [A Declaration for the Future of the Internet](#), April 28, 2022.

United States and Japan have the opportunity to address the existing shortcomings in cyber governance.

The United States alone participates in most of the regional bodies dealing with cyber governance. Along with democratic partners such as Japan, it can use this presence to promote shared principles based on fundamental rights and the rule of law to guide governance discussion. The United States has the prestige and influence—more than any other nation, although less than it has in the past—needed to lead a coordinated effort toward governance, and Japan and the EU will be important partners in this effort. The Biden administration's Declaration for the Future of the Internet fell short both in providing new ideas and in winning international support; now the administration must develop a new conceptual framework of principles and rules to guide the international efforts for cyberspace governance the way the Bretton Woods system guided the effort to create global financial stability.

To play this leadership role, however, the United States will need to first remedy major problems. It will need to overcome the trust deficit created by the Edward Snowden revelations and the business practices of American tech giants. It will need to agree on its own domestic rules for privacy and the regulation of tech companies. It will need to accept the legitimate demands of other nations for respect for sovereignty in cyberspace. And to protect its own interests, it will need to do all of this in ways that do not compromise its own security or damage the prospects for American innovation. These are difficult tasks, but not unprecedented.

On privacy issues, Japan stands out as the only country that has demonstrated leadership. The most progress has been made among Asian democracies perhaps because they have a more pragmatic approach and differing sensibilities.² The United States has been unable to agree on a national privacy policy, Europe's tragic history makes it overly sensitive to the issue, and China favors state interests to the point

where there is no privacy from official surveillance and control of online content. By contrast, the Japanese initiative for Data Free Flow with Trust was precedential in defining rules for international data transfers based on how data is handled and protected rather than where it is located.

There are also opportunities for Japan to influence discussions of cyberspace governance in international forums—the upcoming Japanese presidency of the G7 presents the possibility to make broader progress among leading economies on guidelines for government access to data, regulatory cooperation, data localization, and transborder data sharing. Japan and the United States may also be able to work together in new institutional structures such as the Quad to advance agreement on digital governance.

Conclusion

The year 1945 offered a unique moment of global comity. It will not be repeated anytime soon, and the current environment is marked by competition as well as sharp divisions over human rights and the role of the state. But agreements do not need to be global to have effect. The old rules for international trade and finance are inadequate for a digitally interconnected world. The temptation to erect barriers to this new form of international trade in the hopes of gaining some national advantage is powerful, particularly in Europe, but Japan and the United States can offer an alternative to democracies on digital protectionism. A new approach can be based on agreements that ensure common protections for data no matter where it is located. Coming up with common rules will not be easy, but it is also not impossible if Japan and the United States work together.

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2 Robert Holleyman, [The Asia-Pacific Leads the Way](#), The National Bureau of Asian Research, January 9, 2021.

Governing Cognitive Warfare

Motohiro Tsuchiya

Introduction

The expansion of states' conceptions of operational domains has highlighted new areas for the development of global governance. In addition to land, sea, air, and space, cyberspace has been called the fifth operational domain. Japan's 2018 National Defense Program Guidelines added electromagnetic space as the sixth operational domain, and the anticipated 2022 revision of the guidelines may add "cognitive space" as the seventh. The cognitive domain includes perception and reasoning, and it is threatened by exploitation of information to influence the beliefs of populations.

The cognitive domain includes perception and reasoning, and it is threatened by exploitation of information to influence the beliefs of populations.

As cognitive warfare has emerged as a threat to the cognitive domain, there is a pressing need for new governance structures to constrain this behavior. Effective governance must apply to not only the cognitive domain but also to the domain of cyberspace, which is often intertwined with the practice of cognitive warfare. The United States and Japan have a key role to play in promoting norms and rules in this critical area.

Evolving Threats to Cognitive Space

Issues related to cognitive space such as propaganda and disinformation have long been used to deceive the enemy. During the Cold War, various disinformation campaigns were carried out between the East and the West in Berlin, Korea,

and elsewhere. In the late 1990s, cognitive warfare became recognized as part of command and control (C2) warfare, an application of information warfare in military operations. It is the integrated use of psychological operations, military deception, operations security, electronic warfare, and physical destruction, mutually supported by intelligence, to deny information to, influence, degrade, or destroy adversary C2 capabilities while protecting friendly C2 capabilities against such actions.¹

As the Internet began to spread in the late 1990s and as social media became popular with the launch of Facebook in 2004 and Twitter in 2006, disinformation crossed international borders and became commonplace outside of conflict zones. As a result of these new communication platforms in cyberspace, the statements of opinion leaders have come to exercise more influence on what many people think and do than in the past. These changes in the media environment have led to an increased focus on the cognitive space as the seventh operational domain. The spread of misleading information through social media during emergencies may cause confusion and encourage the wrong response.

During the coronavirus pandemic that began in early 2020, a variety of misinformation spread through social media. Such information was not intentionally spread as disinformation, but many people believed it to be true. An information environment called a "cyber cascade" or "echo chamber" was created, in which people are exposed to certain information repeatedly and have limited access to other information, leading them to strongly believe false information.

¹ Joint Chiefs of Staff, [Joint Doctrine for Command Control Warfare \(C2W\)](#), February 7, 1996, p. v.

Cognitive space is also threatened by hybrid warfare or what has been called “intelligentized warfare” by China, an “integrated warfare deployed on land, sea, air, space, electromagnetic, cyber, and cognitive domains using intelligent weaponry and equipment and their associated operational methods, underpinned by the IoT information system.”² The 2014 Russian unilateral annexation of the Crimean Peninsula was considered a precursor to hybrid warfare, as Russia took control of communications on the peninsula and successfully broadcast disinformation to the population. After the February 2022 Russian invasion of Ukraine, Russia’s government repeatedly made baseless claims, calling the unilateral invasion a “special military operation” and attempting to justify the action by attempting to link Ukraine to the Nazis. During US House Speaker Nancy Pelosi’s visit to Taiwan in August 2022, the Chinese People’s Liberation Army conducted military exercises around Taiwan as well as 23 times more cyberattacks than usual, and it spread false rumors about a missile attack on Taoyuan International Airport in Taiwan.³

Gaps in Existing Governance

It is highly likely that when some kind of operational action or warfare takes place in the future, there will be cognitive warfare to confuse the perceptions of government leaders, military personnel, and the general public. Japan’s 2022 Defense White Paper claims that “warfare in the ‘cognitive domain’ is already emerging and in process.”⁴ However, there is currently little or no international framework governing such cognitive warfare.

To begin with, there are few treaties governing cyberspace. The Budapest Convention is one of the few exceptions, but only 66 countries have ratified it, and it does not

address disinformation or fake news.⁵ The Governmental Experts Group (GGE) of the First Committee of the UN General Assembly has issued several reports, but the GGE has focused on measures to curb cyberattacks and has not discussed the authenticity of information.⁶ The Global Commission on the Stability of Cyberspace, a group of private sector experts, has come closer to addressing some of the threats to cognitive space by proposing a Norm to Protect the Electoral Infrastructure.⁷ It states that “State and non-state actors must not pursue, support, or allow cyber operations intended to disrupt the technical infrastructure essential to elections, referenda, or plebiscites.” However, it is primarily concerned with the protection of technical infrastructure and does not provide for discourse in elections.

The development of a framework for governing cognitive warfare has been inhibited by a lack of common understanding about what is right and what is wrong.

The development of a framework for governing cognitive warfare has been inhibited by a lack of common understanding about what is right and what is wrong. This is subjective, so what seems right to one side may not be accepted as true by the other. With no absolute standards for the correctness of information and no norms or soft law that many people, governments, companies, and organizations can agree on, it is difficult to find common ground. While in a democratic country, a final legal settlement may be reached in a court of law, the role of the International Court of Justice in the international community is limited.

2 Ministry of Defense, Japan, [Defense of Japan 2022](#), 2022, p. 44.

3 Ministry of National Defense, R.O.C., “[In response to rumors online, there is no missile attack from PLA against Taoyuan International Airport of R.O.C., and #TPE is working as usual. We strongly condemn this malicious act and urge netizens not to spread this disinformation.](#)” Twitter, August 3, 2022.

4 Ministry of Defense, Japan, [Defense of Japan 2022](#), p. 44.

5 Council of Europe, [The Budapest Convention \(ETS No. 185\) and its Protocols](#); Council of Europe, [Convention on Cybercrime: Budapest, 23.XI.2001](#), European Treaty Series No. 185, 2001.

6 United Nations General Assembly, [Report of the Group of Governmental Experts on Advancing Responsible State Behaviour in Cyberspace in the Context of International Security](#), July 14, 2021.

7 Global Commission on the Stability of Cyberspace, [The Rules of the Road: GCSC Proposes Norms of Responsible Behavior in Cyberspace](#), November 2019.

There are also limitations to the ability of democratic nations to “fight fire with fire” in cognitive warfare. The key to cognitive warfare is to gain the upper hand by deceiving the enemy. However, if the governments and militaries of democratic nations disseminate disinformation, fake news, and propaganda without limit, they may lose the trust of their own citizens as well. In an environment where the Internet and social media allow information to spread instantly around the world, democratic governments must be cautious.

Paths Forward for US-Japan Cooperation

How can the United States and Japan cooperate to promote effective governance of cognitive space and cyberspace? Recent discussions in the G7 can provide a path for moving forward. The G7 Foreign and Development Ministers’ Meeting held in London in 2021 addressed the topic of “open societies,” including a commitment to a Rapid Response Mechanism “to defend our democratic systems and Open Societies from foreign malign activity” and to “deter those who target our democratic institutions and processes, seek to undermine public confidence in the integrity of our democracies, and attempt to interfere in the information space.”⁸ The governments of Japan and the United States should use this G7 statement as a guide to deepen cooperation.

The Sasakawa Peace Foundation, a Japanese think tank, has also put forward useful recommendations that both Japan and the United States should implement in order to move toward effective governance of cognitive warfare.⁹ First, they

should establish an information collection center for disinformation measures. Second, they should designate election infrastructure as critical infrastructure. Third, they should establish an active cyber defense system against information manipulation cyberattacks. Fourth, they should promote cooperative regulatory efforts and codes of conduct by the government and platforms. Fifth, they should expand media literacy education environment. The US government has already implemented the second and third recommendations.

Conclusion

Cognitive space is an important new operational domain with close linkages to cyberspace. In order to address emergent threats to their societies and to their national security, Japan and the United States must cooperate to create and promote rules and norms that can effectively govern cyber warfare. Very few governance structures currently exist to cover this issue area, so there is much work to be done. Initial steps should be taken to formulate rapid joint responses, collect information, protect election infrastructure, establish active cyber defense, promote regulations and codes of conduct, and expand media literacy. By doing so, Japan and the United States can protect the openness of their own societies while also helping to ensure the security of democracies around the world.

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⁸ European Union External Action, [G7 Foreign and Development Ministers’ Meeting: Communiqué](#), May 5, 2021.

⁹ Sasakawa Peace Foundation, [Prepare for Foreign Disinformation: Threats of Information Manipulation in Cyberspace](#), February 7, 2022.

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