Mutually Assured Discussion: Lessons from Space Law for a Waning Nuclear Arms Regime

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ABSTRACT

This paper investigates the usefulness of applying the lessons of the Artemis Accords ("Accords") to the nuclear arms regime – specifically asking whether strategic soft law agreements could create a stop gap

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for the shortcomings of long held nuclear arms agreements.[1] To do so, it explores multiple instruments of international law, their uses in the existing nuclear and space frameworks, and how that may inform future actions for security or arms agreements. In conclusion, it is determined that the approach developed by the Accords may benefit future nuclear arms communications. The Accords bring many states to the table, largely underscoring mutually accepted existing international law while subtly and incrementally expanding it. The responding criticism of the Accords is just as healthy to the process as praise, because it keeps the dialogue in motion – and this is the success of soft law. While lacking in legal might, the ease of its creation is its superpower. Creating consistent and constant communication helps build predictability and trust, which is a recipe for a more secure world.

I. INTRODUCTION

In the past ten years the world has seen some major shifts in global thinking. From a notable rise in nationalism across many states, to the rattling of previously thought unshakable global institutions.[2] The political and social causes for many of these shifts has and will provide research fodder for hundreds of studies and papers. Regardless of the causes, the immediate impacts on global structures challenge what we know about peace, conflict, and stability. There is a rising sense of instability and tension, particularly in the realms of outer space and in nuclear weapons.[3]

The basis of both space[4] and nuclear[5] legal frameworks stem from a post-World War Two ("WWII") era of international

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[1] A shorter version of this paper under a different title was published by The Space and Defense Journal, at the Eisenhower Center for Space and Defense in the United States Air Force Academy with the University of Nebraska at Omaha in 2024. The Space and Defense Journal has given their express permission for the longer version to be published here.

[2] *The Rise of Nationalism at Home and Abroad*, COUNCIL FOREIGN RELS. (Mar. 9, 2021), https://www.cfr.org/event/rise-nationalism-home-and-abroad.

[3] Press Release, Disarmament Commission, Many Speakers Voice Concern over Increase in Dangerous Nuclear Weapons Rhetoric amidst Ongoing War against Ukraine, as Disarmament Commission Opens Session, U.N. Press Release DC/3847 (Apr. 3, 2023).

[4] Lyndon B. Johnson, President, Statement given upon Reaching of an Agreement on an Outer Space Treaty (Dec. 8, 1966).

[5] Lyndon B. Johnson, Special Message to the Senate Urging Consent to the Ratification of the Nuclear Nonproliferation Treaty (July 9, 1968).

collaboration and both are rooted in the goal of utilizing an international order to avoid catastrophic human destruction. While the Outer Space Treaty ("OST") didn't take shape until more than 20 years after the end of WWII, it is born of the Cold War between the United States and the Union of Soviet Socialist Republics ("USSR") with the goal of not only preserving space, but also securing peace.[6]

In the modern decade the world is experiencing expansive growth in the space industry, and the legal and regulatory structures that support and maintain it.[7] While many states are creating or expanding their domestic legislation and working collaboratively with other nations, there is a sense that no large new treaty or other form of multilateral agreement would be successful.[8] States see the value in international collaboration in space, but there is a growing resistance to limiting activities and tensions as states expand commercial efforts.[9]

On the nuclear arms front, there is a decline in collaboration and mutual understanding of what it means to be a responsible nuclear state.[10] The Treaty on the Non-Proliferation of Nuclear Weapons ("NPT") is in real danger of collapsing.[11] The United States and Russian 'Measures for the Further Reduction and Limitation of Strategic Offensive Arms ("New START") Treaty' may have been extended until 2026, but Russia is no longer complying with it by

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[6] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, Jan. 27, 1967, T.I.A.S. No. 6347, 610 U.N.T.S. 205 [hereinafter OST].

[7] Loren Grush et. al., *The Commercial Space Industry, Led by Elon Musk's SpaceX, is Expected to Blast off with 41% Growth over the Next 5 years*, FORTUNE (July 24, 2023), https://fortune.com/2023/07/24/space-industry-revenue-growth-five-years.

[8] Dennis O'Brien, *#SpacewatchGL Opinion: Space Law 2023: Can Nationalists and Internationalists Find Common Ground?*, SPACEWATCH *(*May 2023), https://spacewatch.global/2023/05/spacewatchgl-opinion-space-law-2023-can-nationalists-and-internationalists-find-common-ground/.

[9] Melissa de Zwart & Christopher J. Borgen, *Space and National Security: International Cooperation, Competition, and Commerce*2023 A.B.A. STANDING COMM. L. & NAT'L SEC.

[10] Press Release, Security Council, Risk of Nuclear Weapons use Higher Than at Any Time Since Cold War, Disarmament Affairs Chief Warns Security Council, U.N. Press Release SC/15250 (Mar. 31, 2023) [hereinafter Meeting Coverage, United Nations Security Council].

[11] *Id*.

refusing United States inspection of its nuclear facilities.[12] Tensions are rising and international trust and communication is failing.

But all is not lost. While there is generally mutual agreement that a second Outer Space Treaty is unlikely in the coming decades, the world is still actively working together in space.[13] Innovative diplomatic and soft law tools are at work bringing states together to preserve access to space, mitigate debris, and generally advance human capacities to operate in space.[14] Many legal scholars are validly dismissive of soft law approaches.[15] Soft law instruments are only quasi-legal with no binding force.[16] However, they do serve the purpose of rapport and trust building over time, creating a continuity of discussion that may influence space stewardship, and lay the groundwork for future potentially binding legal instruments.[17] These tools may be able to provide a model for the nuclear arms realm.

This paper explores the feasibility of applying the soft law approaches found in space law, with particular focus on the Accords, to the nuclear regime.[18] The Accords present a recent case study in a soft law approach for influencing norms of behavior in space. The paper starts by outlining the instruments of international law and describing the general, though complex, decline in multilateral agreements. Next, it covers the status of present agreements in the nuclear and space fields. Finally, it explores how lessons may be drawn from space law, specifically the Accords, and applied to the nuclear arms regime.

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[12] Avi Kirpekar, *Whither New Start: Implications of Russia's Suspension of the Last Remaining United States-Russia Arms Control Treaty*, NUCLEAR THREAT INITIATIVE (Mar. 16, 2023), https://www.nti.org/atomic-pulse/whither-new-start-implications-of-russias-suspension-of-the-last-remaining-u-s-russia-arms-control-treaty.

[13] O'Brien, *supra* note 8.

[14] Marco Ferrazzani, *Soft Law in Space Activities- An Updated View*, *in* SOFT LAW IN OUTER SPACE: THE FUNCTION OF NON-BINDING NORMS IN INTERNATIONAL SPACE LAW 103 (Irmgard Marboe ed., 2012).

[15] Jack M. Beard, *Soft Law's Failure on the Horizon: The International Code of Conduct for Outer Space Activities*, 38 38 U. PA. J. INT'L L. 335 (2017)

[16] ENCYCLOPEDIC DICTIONARY OF INTERNATIONAL LAW (John P. Grant and J Craig Barker eds., Oxford Univ. Press 3d ed. 2009).

[17] Ferrazzani, *supra* note 14.

[18] The Artemis Accords: Principles for Cooperation in the Civil Exploration and Use of the Moon, Mars, Comets, and Asteroids, Oct. 13, 2020, 62 I.L.M. 888.

II. INSTRUMENTS OF INTERNATIONAL LAW

When testifying to Congress in 2015, then Secretary of State John Kerry said, "I spent quite a few years ago [sic] trying to get a lot of treaties through the United States Senate, and frankly, it's become physically impossible. You can't pass a treaty anymore."[19] Kerry was criticizing the United States Senate for its unwillingness to participate in the treaty process, allowing treaties to languish in committee.[20] In fact, the United States has come to rely predominantly on executive agreements over treaties.[21] This is particularly notable in the past 20 years, and a good number of legal scholars have explored the structural issues in the United States that have led to the domestic decline of treaties.[22] The general design of this paper is not meant to explore the United States treaty process specifically or how international law functions and is instead focused on how soft law solutions may be tenable. However, the background of how international agreements and international law may be created and how they function are critical to understand. This small section hardly scratches the surface of this immense topic. Rather, it broadly highlights the key structural elements. This paper will explore multilateral and bilateral treaties, the development of customary international law, and the use of soft law in diplomacy and politics.

A. TREATIES

Article 2, Section 1(a) to the Vienna Convention on the Law of Treaties has been widely accepted as the instrument governing the law of treaties since its adoption by the International Law Commission in 1969.[23] It defines a Treaty as an "international agreement concluded between States in written form and governed by

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[19] Dan Roberts, *John Kerry warns Congress: Back Iran Nuclear Deal or Face Dire Consequences*, GUARDIAN (July 28, 2015), https://www.theguardian.com/world/2015/jul/28/john-kerry-iran-nuclear-deal-congress-hearing.

[20] Jeffrey S. Peake, *The Decline of Treaties? Obama, Trump, and the Politics of International Agreements*, SSRN (Apr. 6, 2018), https://ssrn.com/abstract=3153840.

[21] Curtis A. Bradley & Jack L. Goldsmith, *Presidential Control over International Law*, 5 HARV. L. REV. 131 (2018).

[22] *See* Cindy Galway Buys, *AGORA: The End of Treaties?*, 108 AM. J. INT'L L. UNBOUND 57, 62 (2014).

[23] Vienna Convention on the Law of Treaties, art. 2, §1(a), May 23, 1969, 1155 U.N.T.S. 331.

international law…".[24] Treaties may be considered multilateral, being between more than two states or organizations, or bilateral, being between just two states or organizations.[25] Treaties may sometimes take on other names, such as a Convention, a Memorandum of Understanding, a Covenant, Charter, or other names agreed to by the member states of organizations.[26] Once the text of a treaty is fully negotiated the parties' signatures authenticate it. The signatures only verify that the text accurately represents the agreed-upon stipulations.[27] Most agreements have some kind of *intent to require ratification* or stipulation of formal acceptance of its terms – how a nation state creates that acceptance is subject to its own domestic processes. [28] Therefore, as Kerry notes, domestic processes can be a significant barrier to treaty ratification.[29]

B. CUSTOMARY INTERNATIONAL LAW

It is also useful to lay some groundwork for the discussion of customary international law as another method for creating international law. Customary international law dictates that states should behave in accordance with legal rules evident in established practices.[30] Article 38 of the International Court of Justice Statute, the article instructing the Court to decide cases submitted to it through treaties or custom, refers to "international custom, as evidence of a general practice accepted as law."[31] There isn't a magic formula for showing "general practice" and the phrase has long been fodder for legal scholars and law school competitions alike, but there are some established parameters. For example, the state whose interests may be affected must participate in the practice.[32] Additionally, the practice should be broadly characteristic of all the states and not only to those states in a particular region.[33]

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[24] *Id*.
[25] *See* Allan Vaughan Lowe, *How International Law is Made*, *in* INTERNATIONAL LAW 34, 59 (2007).
[26] *See e.g.* J. E. Read, *International Agreements*, 26 CAN. BAR R. 520, 521–22 (1948).
[27] Lowe, *supra* note 25, at 67.
[28] *See id.*
[29] *See* Roberts, *supra* note 19.
[30] Lowe, *supra* note 25, at 36.
[31] Statute of the International Court of Justice, art. 38 ¶ 1(b), June 26, 1945, 33 U.N.T.S. 993 [hereinafter ICJ Statute].
[32] *See id.* art. 38, ¶ 2.
[33] *See* Lowe, *supra* note 25, at 37.

C. SOFT LAW

Growing in acceptance is what legal scholars refer to as *soft law*. Despite its name, soft law is more of a social norm than a legal one.[34] Soft law is commonly understood to refer to a written instrument containing principles, norms, standards, or other statements of behavior.[35] Soft law agreements are viewed as political agreements that could lead to law, but are not yet law, thus making them potentially easier to negotiate.[36] Violations only give rise to political consequences, rather than legal ones.[37] The sustainability of these commitments is debatable, but it is plausible that soft law norms may establish practices, which could harden into customary international law or lay the foundation for subsequent treaties.[38]

III. A DECLINE IN MULTILATERALISM

In his 2018 book, *Treaties and Their Practice - Symptoms of Their Rise or Decline,* Professor George Nolte writes of the cycle of treaties: "the establishment of basic rules after the Second World War, a blossoming of treaties during the 1990s, and signs of crisis, and perhaps even decline, after the turn of the century[.]"[39] While this excerpt describes a potential decline in treaties, Nolte's outlook is not entirely pessimistic and he ultimately rejects a "doomsday mood" as premature.[40] While world events continue to paint a bleaker picture than the one Nolte evaluated in 2018, this paper also doesn't aim to spread doom and gloom. International cooperation continues to flourish in many contexts, and the reasons for treaty decline are

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[34] *See* Dinah L. Shelton, *Soft Law*, *in* HANDBOOK OF INTERNATIONAL LAW 68, 68 (2008).
[35] *See e.g.*, Bruce Zagaris, *The United Nations Crime Prevention and Criminal Justice Programme: Formulation of Standards and Efforts at Their Implementation by Joseph Gold*, 91 AM. J. OF INT'L L. 408, 409 (1997) (book review).
[36] *See* Shelton, *supra* note 34, at 75.
[37] *See id.*
[38] This is particularly notable in the field of human rights, where many agreements have been preceded by nonbinding agreements. *See* Shelton, *supra* note 34, at 68; *see generally* Lowe, *supra* note 25.
[39] George Nolte, *Treaties and Their Practice - Symptoms of Their Rise or Decline*, *in* POCKET BOOKS HAGUE ACAD. INT'L L. 15, 160 (2019).
[40] Duncan Hollis, *Treaties and Their Practice - Symptoms of Their Rise or Decline,* 114 AM. J. INT'L L. 785(2020).

complex and numerous.[41]

Taking an objective view then, we still see a decline when focusing on Article II treaties in the United States.[42] These are international agreements following the process specified in Article II of the United States Constitution, which requires the President to obtain the consent of two-thirds of the United States Senate.[43] The number of treaties submitted to the Senate dropped to historic lows during the Obama administration and stayed there during the Trump administration.[44] There are a variety of theorized and substantiated reasons for this—from the Senate majority refusing to work with then President Obama, to the Trump administration likely not prioritizing international agreements.[45] It may also be that the drop-off is an indication of decreased demand. On topics such as tax or extradition, the United States has already completed such treaties with most nations.[46]

The relative decline is also not entirely limited to the United States. Internationally, since the 1950s the number of wars and conflicts that result in a peace treaty has been dropping.[47] This may be the result of a growing international framework for the law of armed conflict, but it may also be that states are unwilling to first acknowledge they were in a state of war – because war looks different these days.[48] International conflict over the past 50 years is significantly different than throughout history. The use of cyber and space tools and assets have significantly changed how states interact both in peace and in times of conflict.[49] Authoritarians are pushing their own norms more aggressively in recent years, based on their

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[41] *E.g.*, Press Release, World Econ. F., New Global Cooperation Barometer: Cooperation Possible Even in the Midst of Competition (Jan. 8, 2024).
[42] *See* Curtis Bradley et al., *The Death of Article II Treaties?*, LAWFARE (Dec. 13, 2018, 10:00 AM), https://www.lawfaremedia.org/article/death-article-ii-treaties.
[43] U.S. CONST. art. I, § 2.
[44] *See* Bradley, *supra* note 42.
[45] *Id.*
[46] Bradley & Goldsmith, *supra* note 21, at 1211.
[47] Tanisha M. Fazal, *The Demise of Peace Treaties in Interstate War*, 67 INT'L ORG. 695, 695 (2013).
[48] Claire Finkelstein & Kevin Govern, *Introduction: Cyber and the Changing Face of War, in* CYBERWAR LAW AND ETHICS FOR VIRTUAL CONFLICTS ix, x (Jens Ohlin, Kevin Govern & Claire Finkelstein eds., 2015).
[49] *Id.*

own definitions.[50] New space and cyber tools provide an opportunity for reevaluation of principles and the definition of war—you need not resolve a war with a treaty if you never defined it as a war in the first place. Some countries are using that window to advance their own standards outside of a formal legal agreement.

It is with this context we look to the space and nuclear regimes. The United States is a significant world power with global influence in both space and nuclear behaviors and it is experiencing a sharp decline in treaty participation.[51] Globally, authoritarian governments are working to influence norms and principles outside the recognized legal framework.[52] Resisting a fall into a "doomsday mood", the present paradigm is still concerning.

IV. A DWINDLING NUCLEAR FRAMEWORK

Building on the notion of a general decline in multilateralism, there seems to be some consensus that the long-standing nuclear legal regime has reached a watershed moment.[53] From instances of noncompliance with bilateral agreements to growing resentment over historic multilateral treaties, nuclear weapons hold the world in a precarious balance. Just one state can change the course of the world. This section profiles four legal instruments of note, the Treaty on the Non-Proliferation of Nuclear Weapons,[54] the Treaty on the Prohibition of Nuclear Weapons,[55] the Strategic Offensive Reductions Treaty,[56] and the New START Treaty.[57] These instruments may be in jeopardy, but it is also worth recognizing where they continue to provide insight into future opportunities. While not yet drawing analogies to space law, this exploration sets the stage for that discussion, identifying areas of concentration.

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[50] U.S. NATIONAL INTELLIGENCE COUNCIL'S STRATEGIC FUTURES GROUP GLOBAL TRENDS, UNITED STATES BACKED INTERNATIONAL NORMS INCREASINGLY CONTESTED 1, 1 (Oct. 2021).
[51] Bradley et al., *supra* note 42.
[52] Sarah Repucci & Amy Slipowitz, *The Global Expansion of the Authoritarian Rule*, FREEDOM HOUSE (2022), https://freedomhouse.org/report/freedom-world/2022/global-expansion-authoritarian-rule.
[53] Meeting Coverage, United Nations Security Council, *supra* note 10.
[54] Treaty on the Non-Proliferation of Nuclear Weapons, July 1, 1968, 21 U.S.T. 483, 729 U.N.T.S. 161.
[55] Treaty on the Prohibition of Nuclear Weapons, July 7, 2017, 3379 U.N.T.S. [hereinafter TPNW].
[56] Strategic Offensive Reductions Treaty, May 24, 2002, 2350 U.N.T.S. 415.
[57] New START Treaty, April 8, 2010, S. TREATY DOC. NO. 111-5.

A. THE TREATY ON THE NON-PROLIFERATION OF NUCLEAR WEAPONS

The Treaty on the Non-Proliferation of Nuclear Weapons ("NPT") "aims to avert the danger of nuclear war through the prevention of the wider dissemination of nuclear weapons and other measures." [58] Indeed, the treaty's intent is on its face: to prevent states from growing an existing, or obtaining a new, nuclear arsenal.[59] Consisting of 11 articles, the NPT has been ratified by a larger number of states than any other agreement on the subject, since its introduction in 1968.[60] In summary the NPT requires three elements:

> (1) States without nuclear weapons must not acquire them
>
> (2) States with nuclear weapons will pursue disarmament and
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> (3) All states can access nuclear technology for peaceful purposes, under safeguards.[61]

States may join the NPT as either a "nuclear weapon state" or as a "non-nuclear weapon" state.[62] Under the NPT, the United States, Russia, China, France, and the United Kingdom are the only recognized nuclear weapon states, having built and tested at least one nuclear device before January 1 of 1967.[63] This timeline is the measure used by the NPT to determine whether a state is considered a nuclear weapon state.[64] Of course, more states have nuclear weapons than are included in that list.[65] Notably, India, North Korea, Pakistan, and Israel

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[58] Treaty on the Non-Proliferation of Nuclear Weapons, Introductory Note (forthcoming) https://legal.un.org/avl/ha/tnpt/tnpt.html#:~:text=The%20Treaty%20on%20the%20Non,force%20on%205%20March%201970.
[59] TPNW, *supra* note 55, at pmbl.
[60] *Treaty on the Non-Proliferation of Nuclear Weapons*, NUCLEAR THREAT INITIATIVE, https://www.nti.org/education-center/treaties-and-regimes/treaty-on-the-non-proliferation-of-nuclear-weapons/ (last visited Mar. 13, 2024) [hereinafter NTI, *TNPNW*].
[61] *Id.*
[62] *Id.*
[63] *Id.*
[64] *Id.*
[65] *Id.*

all have nuclear weapons and are not members of the NPT.[66] In fact, one-third of all nuclear armed states are not members.[67] Arguably, to stay in line with its purpose, the NPT can't allow for new nuclear weapon state members.[68] Acknowledging them this way would, in many ways, be remunerating their nuclear proliferation which is in direct opposition to the intent of the treaty.[69]

Despite notable non-members, the NPT is still considered a "cornerstone of the global nuclear framework" and a comprehensive grand bargain between nuclear powers.[70] The NPT was entered into force on March 5th of 1970, and was extended indefinitely in 1995.[71] In a 2005 press release, research professor and esteemed scholar John Holdren described the importance of the NPT, saying that the "*existence and strength* of the NPT itself [is] important because the goal of preventing proliferation cannot be attained by one or a few states acting alone, no matter how powerful those states may be."[72] Rather, he continued, "[a]ttaining the goal requires the commitment and cooperation of the world community acting in concert to limit the spread, and monitor the use of, the technologies most directly relevant."[73] In summary, no matter how powerful the United States, China, or Russia are, no one power holds the key to nuclear security.

The effectiveness of any treaty is dependent on states seeing membership as necessary, and there are a few challengers calling the necessity of the NPT into question.[74] First, there is a growing resentment from non-nuclear states that nuclear states are not actually moving toward disarmament.[75] The treaty language and the 1995 indefinite extension do not include a timeline or deadline for

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[66] Joelien Pretorius & Tom Sauer, *Ditch the NPT*, 63 SURVIVAL 103, 104 (2021).
[67] *Id.*
[68] *Id.*
[69] *Id.*
[70] John Carlson, *Is the NPT Still Relevant? – How to Progress the NPT's Disarmament Provisions*, 2 J. PEACE & NUCLEAR DISARMAMENT 97, 97 (2019).
[71] NTI *TNPNW*, *supra* note 60.
[72] John Holdren, *QUESTION #1: Why is the Non-Proliferation Treaty Important?*, BELFER CTR. (Apr. 26, 2005), https://www.belfercenter.org/publication/question-1-why-non-proliferation-treaty-important-john-p-holdren.
[73] *Id.*
[74] Lee Manseok & Michael Nacht, *Challenges to the Nuclear Non-Proliferation Treaty*, 14 STRATEGIC STUDS. Q. 95, 95 (2020).
[75] *Id.*

nuclear disarmament for the five nuclear weapon states.[76] Second, throughout the life of the NPT, it has commonly been interpreted as allowing the five nuclear weapon states to retain their arsenal, so long as they share nuclear energy technology with non-nuclear weapon states.[77] As time marches on and complaints about the lack of disarmament go unanswered, there is a declining sense of obligation for non-nuclear states.[78] Even the NPT's structure creates a "haves" and "have-nots" approach to nuclear weapons, which some scholars argue was never sustainable to begin with.[79]

In addition to the dissatisfaction of non-nuclear weapon states, there is the issue of compliance by the nuclear states. In January 2022, the five nuclear states in the NPT released a joint statement on "preventing nuclear war and avoiding arms races," declaring their commitment to the NPT.[80] However, after four weeks of negotiations, at the treaty's tenth Review Conference in 2022, the states failed to reach a consensus on goals regarding weapon-free zones in the Middle East and Russia's presence at Ukraine's Zaporizhzhia Nuclear Power Plant.[81] This failure to reach an agreement underscores the fear of a weakening nuclear regime, calling the NPT further into question with some even contending it is in a deep crisis.[82]

B. THE IMPACT OF THE TREATY ON THE PROHIBITION OF NUCLEAR WEAPONS

In response to the criticisms of the NPT, the Treaty on the

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[76] Pretorius & Sauer, *supra* note 66, at 105.
[77] Stephen McGlinchey, *Diplomacy, in* INTERNATIONAL RELATIONS (E-IR Publications, ed.) (2017).
[78] Julian Borger & Ian Sample, *All You Wanted to Know About Nuclear War, but Were Too Afraid to Ask*, GUARDIAN (July 16, 2018), https://www.theguardian.com/world/2018/jul/16/nuclear-war-north-korea-russia-what-will-happen-how-likely-explained.
[79] Pretorius & Sauer, *supra* note 66, at 104.
[80] *Joint States of the Leaders of the Five Nuclear-Weapon States on Preventing Nuclear War and Avoiding Arms Races*, THE WHITE HOUSE (Jan. 3, 2022), https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/03/p5-statement-on-preventing-nuclear-war-and-avoiding-arms-races/.
[81] Gabriela Rosa, *Updates from the 10th NPT Review Conference,* ARMS CONTROL ASS'N (Aug. 26, 2022), https://www.armscontrol.org/blog/2022/updates-10th-NPT-RevCon.
[82] *See* Jeffrey W. Knopf, *Not by NPT Alone: The Future of the Global Nuclear Order*, 43 CONTEMP. SEC. POLICY 186, 201–02 (2022).

Prohibition of Nuclear Weapons ("TPNW") has emerged.[83] Where the NPT emphasizes the "haves" and "have-nots" and their respective obligations, the TPNW outright prohibits nuclear weapons, leading towards their total elimination.[84] The TPNW entered into force in January of 2021, and the consequences of its creation remain to be seen.[85] Some scholars applaud its efforts and are optimistic of what is termed a humanitarian approach to nuclear disarmament.[86] Others have expressed concern that the TPNW is a risky distraction.[87] Though no nuclear weapon states signed the treaty, it received majority support in the United Nations.[88] The intent, presumably, is to put pressure on nuclear weapon states and their allies by "naming and shaming" them.[89] This particular approach is specifically of interest to this paper. It is established that a treaty cannot bind third parties who haven not expressly agreed to it, but proponents of the TPNW argue that the coming together of a majority of countries who follow a practice can create social norms against nuclear weapons.[90]

This "hard law" approach to norm creation is not an idea without merit. However, nuclear security has historically relied on a fragile balance of mutually assured destruction—no one is secure unless everyone is.[91] Even one nuclear state hold-out destroys security for all other states. In this way, the nuclear dilemma is different from the challenges faced in space, of which have global impacts, although in a

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[83] *See* Marianne Hanson, *Power to the Have-Nots? The NPT and the Limits of a Treaty Hijacked by a "Power-Over" Model*, 43 CONTEMP. SEC. POL'Y 80, 80 (2022) [hereinafter Hanson, *Power to the Have-Nots?*].
[84] *See* TPNW, *supra* note 55, art. 1.
[85] *Treaty on the Prohibition of Nuclear Weapons*, *Treaty Overview*, UNODA, https://disarmament.unoda.org/wmd/nuclear/tpnw/ (last visited Mar. 10, 2024).
[86] *See*, *e.g.*, Marianne Hanson, *Normalizing Zero Nuclear Weapons: The Humanitarian Road to the Prohibition Treaty*, 39 CONTEMP. SEC. POL'Y 464, 465, 480–81 (2018) [hereinafter Hanson, *Normalizing Zero Nuclear Weapons*].
[87] *See*, *e.g.*, Michael Rühle, *The Nuclear Weapons Ban-Treaty: Reasons for Skepticism*, NATO REV. (May 19, 2017), https://www.nato.int/docu/review/articles/2017/05/19/the-nuclear-weapons-ban-treaty-reasons-for-scepticism/index.html.
[88] *Id*.
[89] *Id*.
[90] *Id*.
[91] *See* Henry D. Sokolski, *Introduction* to GETTING MAD: NUCLEAR MUTUAL ASSURED DESTRUCTION, ITS ORIGINS AND PRACTICE 2–4 (Henry D. Sokolski ed., 2004).

significantly less immediate way than the use of a nuclear weapon.

C. AN ONGOING BILATERAL APPROACH BETWEEN THE UNITED STATES AND RUSSIA: THE STRATEGIC ARMS REDUCTION TREATY ("START") AND STRATEGIC OFFENSIVE REDUCTIONS TREATY ("SORT")

Entered into force in 1994, the Strategic Arms Reduction Treaty ("START I") was the first agreement that required the Soviet Union (later the Russian Federation and the other three independent states resulting from the dissolution of the Soviet Union) and the United States to require reductions of strategic nuclear weapons.[92] START I was initially successful.[93] It called for on-site inspections, both short-notice and planned, and other continuous monitoring protocols to verify data. In the first seven years of START I, the United States conducted 335 inspections, and Russia conducted 243.[94] By December 2001, reductions were completed, and both the United States and Russia continued these efforts.[95]

Running next to START I was START II, which began debate in 1993.[96] In 2002, the United States and Russia signed START II, which sought to establish a limit on strategic weapons and further required reductions in two phases—however, it never entered into force. Reminiscent of Secretary Kerry's comments earlier in this paper, the United States Congress never voted to ratify the entire agreement.[97] In 2002, despite having ratified START II itself, Russia declared it was not bound by START II and the agreement fell apart.[98]

With START I still in place but the START II process in shambles, the United States and Russia entered the Strategic Offensive

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[92] The Lisbon Protocol later included all five states: Russia, Belarus, Ukraine, Kazakhstan, and the United States. *See* Daryl Kimball, *START I at a Glance*, ARMS CONTROL ASS'N, https://www.armscontrol.org/factsheets/start1 (last visited Mar. 27, 2024) [hereinafter Kimball, *START I at a Glance*].

[93] *Id.*

[94] *Id.*

[95] *Id.*

[96] *See* Daryl Kimball, *START II and Its Extension Protocol at a Glance*, ARMS CONTROL ASS'N, https://www.armscontrol.org/factsheets/start2 (last visited Mar. 26, 2024) [hereinafter Kimball, *START II*].

[97] *Id.*

[98] *Id.*

Reductions Treaty ("SORT") in May 2002.[99] SORT required the two countries to decrease their deployed strategic weapons, allowing for stored (or non-deployed) weapons and keeping START I in place. A key difference between SORT and past agreements between the United States and Russia is that it did not specify which warheads had to be reduced or how to make those reductions. The SORT also set no protocols for determining compliance, as it was decided the states could rely on the START I verification process.[100] Confusingly, however, START I expired in December of 2009, three years before some SORT warhead limits took effect.[101] In response, the two states created the Bilateral Implementation Commission, and later the Consultive Group for Strategic Security to address implementing the agreement and to explore arms matters.[102] Also, interestingly, SORT allowed for party withdrawal without justification, a unique feature among arms treaties.[103]

Though the success of these working groups and commissions is unclear, and the unique provisions of SORT are limited in scope, they provide an opportunity to examine how bilateral agreements may impact negotiation. While START II failed and SORT was riddled with vague provisions, the Russian Federation and United States were consistently brought together to negotiate and create these working groups.

D. CONTINUED BILATERAL EFFORTS: NEW START TREATY

The SORT was superseded and thus terminated in 2011 when New START entered into force.[104] New START is comprised of three tiers.[105] The first two are the treaty text and protocols, containing the rights and obligations of the states.[106] The third is the treaty's

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[99] Daryl Kimball, *The Strategic Offensive Reductions Treaty (SORT) at a Glance*, ARMS CONTROL ASS'N, https://www.armscontrol.org/factsheets/sort-glance (last visited Mar. 30, 2024) [hereinafter Kimball, *SORT at a Glance*].
[100] *Id.*
[101] *Id.*
[102] *Id.*
[103] *Id.*
[104] *New Start Treaty*, NUCLEAR THREAT INITIATIVE: EDUC. CTR., (Feb. 8, 2023) https://www.nti.org/education-center/treaties-and-regimes/treaty-between-the-united-states-of-america-and-the-russian-federation-on-measures-for-the-further-reduction-and-limitation-of-strategic-offensive-arms/ [hereinafter NTI, *New Start Treaty*].
[105] *Id.*
[106] *Id.*

technical annexes.[107] These annexes include details on inspection activities, notifications, and telemetric information.[108] Drawing on the provision of their first successful bilateral agreement, START I, the United States and Russia agreed to a new set of verification measures.[109]

Though the process was not without significant tension, New START was formally extended by the Biden administration and Russian President Putin in 2021, and is set to run through February of 2026.[110] In 2022, after postponing scheduled meetings to discuss inspections, Russia suspended New START inspections of their nuclear facilities by the United States, citing travel restrictions due to their invasion of Ukraine and safety concerns regarding the COVID-19 pandemic.[111] Though later in the year Russia shared they remain fully committed to complying with New START, the next scheduled round of meetings was also postponed without reason.[112]

In June of 2023, the United States Department of STate formally announced that Russia was no longer in compliance with its New START obligations.[113] As a result, the United States has refrained from facilitating Russian inspections of United States facilities or sharing data, noting these countermeasures will be reversed upon Russian compliance.[114] The United States has consistently noted that it "remains ready to work constructively with Russia to fully implement the treaty." [115]

This suspension of compliance with the New START treaty is deeply concerning, but as Nolte reminds us, a "doomsday" attitude remains unhelpful. Acknowledging that this paper has only provided a summary of these agreements and that the successes and failures of agreements are the result of many variables, successful security agreements begin and end with mutual understanding. Finding points of consensus is extremely difficult, and compliance is never assured, but communication and transparency provide some measure of

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[107] *Id.*
[108] *Id.*
[109] *Id.*
[110] *Id.*
[111] Press Release, U.S. Dep't of State, Russian Noncompliance wit and Invalid Suspension of the New START Treaty, (June 1, 2023), https://www.state.gov/russian-noncompliance-with-and-invalid-suspension-of-the-new-start-treaty/.
[112] NTI, *New Start Treaty*, *supra* note 104.
[113] U.S. Dep't of State, *supra* note 111.
[114] *Id.*
[115] *Id.*

ongoing security. Although currently in jeopardy, these bilateral efforts foster discussion on a state-to-state level, which may create conditions to identify agenda items for future reduction debates.[116]

V. THE SPACE LAW FRAMEWORK

Scholars generally concur that a new Outer Space Treaty or other agreement that further restricts uses of space is significantly unlikely in the modern decade.[117] As commercial and military uses of space expand rapidly, global powers show a resistance to any imposed limitation on their operations in space.[118] New nations are entering the space-faring age, and it is likely they are also unwilling to agree to limitations above and beyond the landmark treaty.[119] Operating in space is a showing of capability, financial power, and brain power for a state. Additionally, as technology advances, the vantage point of space is a lucrative one.[120] For these reasons, new spanning agreements prove unpopular. However, space is interesting in that it is, by its very nature, inherently global. A nation's satellites orbit the entire globe, all day every day.[121] Like the nuclear regime, the decisions of one state have significant security impacts on the entire world at once.

We've explored the decline of multilateralism in the general sense and within the nuclear regime. The following section takes a deeper look at the state of relevant multilateral space law agreements and the use of bilateral or soft law avenues in outer space.

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[116] Amy F. Woolf, *Promoting Nuclear Disarmament Through Bilateral Arms Control: Will New START Extension Pave the Path to Disarmament?*, 4 J. FOR PEACE & NUCLEAR DISARMAMENT 309, 316 (2021).
[117] O'Brien, *supra* note 8.
[118] *See* Andrew Hoffmann, *A New Era in the Weaponization of Space: The U.S. Space Force and an Update to the Outer Space Treaty*, 29 TRANSNAT'L L. & CONTEMP. PROBS 327, 331 (2022).
[119] Landry Signe & Hanna Dooley, *How Space Exploration is Fueling the Fourth Industrial Revolution*, BROOKINGS INST. (Mar. 28, 2023), https://www.brookings.edu/articles/how-space-exploration-is-fueling-the-fourth-industrial-revolution/.
[120] *Id.*
[121] Sarah Kreps et al., *The Promise and Perils of the Space Boom*, BROOKINGS INST. (Nov. 2, 2022), https://www.brookings.edu/articles/the-promise-and-peril-of-the-new-space-boom-us-china-competition-spacex-international-law/.

A. THE OUTER SPACE TREATY AS A NUCLEAR ARMS CONTROL TREATY – AND A WHOLE LOT MORE

Signed and entered into force in 1967, the OST is largely focused on the peaceful use of outer space.[122] OST is largely considered the cornerstone of international space law and is generally viewed as successful.[123] Signed during the "Space Race" between the Soviet Union and the United States, the treaty relieved some tension regarding the use of weapons in outer space.[124] Though the Soviet Union and the United States were not the only two original signatories, they were the most active space states at the time.[125] A few years prior to the treaty in 1961, Yuri Gagarin became the first human to orbit the earth, and just a few years after the treaty, in 1969, Neil Armstrong was the first person to step foot on the moon.[126] Representing the Soviet Union and the United States respectively (with many other courageous explorers between them), space exploration was moving at a rapid pace.

The United States and the Soviet Union were also critical players in the construction of the treaty language itself.[127] In June of 1966, the two states both submitted their own drafts of treaty language to the United Nations General Assembly.[128] Over six months, mutually agreed upon language was created.[129]

This significant focus on the United States and the Soviet Union,

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[122] *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*, U.N. OFF. FOR OUTER SPACE AFFS., https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html (last visited Feb. 26, 2024) [hereinafter UNOOSA, *Treaty on Principles*].

[123] Brian J. Eagn, Legal Adviser, U.S. Dep't of State, Remarks at the Galloway Symposium on Critical Issues in Space Law: The Next Fifty Years of the Outer Space Treaty (Dec. 7, 2016), https://2009-2017.state.gov/s/l/releases/remarks/264963.htm.

[124] Daryl Kimball, *The Outer Space Treaty at a Glance*, ARMS CONTROL ASS'N, (Oct. 2020), https://www.armscontrol.org/factsheets/outerspace [hereinafter Kimball, *The Outer Space Treaty*].

[125] *Id.*

[126] *Timeline*, NAT'L ARCHIVES: SPACE EXPL., https://www.archives.gov/research/alic/reference/space-timeline.html (last visited Feb. 25, 2024).

[127] UNOOSA, *Treaty on Principles, supra* note 122.

[128] *Id.*

[129] *Id.*

as well as the emphasis on peaceful uses of space and the restrictions on weaponizing space, has led some scholars to think of the OST as purely another nuclear treaty, and a minor one at that.[130] However, that view is reductive of the impact the OST has had on global space operations outside the nuclear context. While it is accurate that OST bans the stationing of weapons of mass destruction in outer space and prohibits military activities *on* celestial bodies,[131] in full it calls for the following:

> the exploration and use of outer space shall be carried out for the benefit and in the interests of all countries and shall be the province of all mankind;
>
> outer space shall be free for exploration and use by all States;
>
> outer space is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means;
>
> States shall not place nuclear weapons or other weapons of mass destruction in orbit or on celestial bodies or station them in outer space in any other manner;
>
> the Moon and other celestial bodies shall be used exclusively for peaceful purposes;
>
> astronauts shall be regarded as the envoys of mankind;
>
> States shall be responsible for national space activities whether carried out by governmental or non-governmental entities;
>
> States shall be liable for damage caused by their space objects; and
>
> States shall avoid harmful contamination of space and celestial bodies.[132]

The OST covers activities beyond nuclear weapons in space,

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[130] David R. Burbach, *H-Diplo Article Review 1021*, H-DIPLO (Feb. 24, 2021), https://hdiplo.org/to/AR1021.
[131] *See* Kimball, *The Outer Space Treaty, supra* note 124.
[132] UNOOSA, *Treaty on Principles, supra* note 122.

impacting the commercial and civil space communities significantly – from state liability for commercial actors to considerations of what commercial activities may constitute appropriation.[133] The purpose of this paper is not to evaluate the commercial and civil impacts of the OST, but it is important to not lose sight of the OST's purpose beyond serving as an arms control or nuclear treaty. While security is baked into it, the OST serves an array of purposes within space law, making it an incredibly unique instrument.[134] It is serving double, maybe triple, duty in space.

With this important nuisance noted, the OST *has* largely been successful in limiting the weaponization of space. As Nikita Chiu points out in their 2023 paper, "[s]ince these treaties were concluded, to date, there have not been any atmospheric tests or nuclear detonations in outer space, nor have there been any installations of WMD detected in orbit."[135] This achievement is particularly notable when considering the timeline of the OST. Throughout the 1960s, the fear of nuclear weapons in orbit was sincere – and it is noteworthy how the United States and the Soviet Union were able to work through the United Nations to prevent the nuclearization of space.[136]

The compliance or aims of the major powers to the OST is not without controversy in recent years.[137] Where in the nuclear field the world looks to Russia for their noncompliance with New START, the United States is under the microscope for perceived increased space militarization. Former President Trump's announcement of the Space Force, which is now implemented, created significant critique from the global community.[138] Many argue that the creation of such a military service is in direct conflict with the OST's call for the peaceful uses of outer space. [139] It's critical to note, however, that the service, organized under the Department of the United States Air Force, is

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[133] Burbach, *supra* note 130.
[134] *See id.*
[135] Nikita Chiu, *Orbis non sufficient — Co-operation and Discord in Global Space and Disarmament Governance*, 18 HAGUE J. DIPL. 351, 362 (2023).
[136] *Id.*
[137] Gbenga Oduntan, *Donald Trump's Space Force Is a Dangerous Prospect for Us All*, NEWSWEEK (June 26, 2018), http://www.newsweek.com/donald-trump-space-force-militarization-995348.
[138] *Id.*
[139] Melissa de Zwart, *It's not Clear where Trump's "Space Force" Fits within International Agreement on Peaceful Uses of Space*, THE CONVERSATION (June 18, 2018), http://theconversation.com/its-not-clear-where-trumps-space-force-fits-within-international-agreement-on-peaceful-use-of-space-98545.

furthering operational efforts started in 1958 when the United States Congress directed military space activities to the Department of Defense.[140] The OST calls for a restriction of the *weaponization* of space, not necessarily of the *militarization* of space activities.[141] Space has long been used for reconnaissance through remote sensing, including in the verification of nuclear arms agreements, which are justifiably categorized as military activities.[142] While the creation of the Space Force may easily be interrupted as an aggressive posturing by the United States, it just as easily is justified as a reaction to an increasingly crowded, and thus difficult to secure, space environment.

Again, this paper wades into subjects outside its scope. What is certain? Like the nuclear regime, the space regime is complex and global. The OST is not the only multilateral space law instrument, though it is the oldest and most significant in the space regime.

B. THE USE OF MULTILATERAL AGREEMENTS FOLLOWING THE OUTER SPACE TREATY

Following the OST are several multilateral agreements that further refined and defined the language of the OST. In total, there are five United Nations Treaties on Outer Space. They are *the OST*,[143] *the Rescue Agreement*,[144] *the Liability Convention*,[145] the *Registration Convention*,[146] and *the Moon Agreement*.[147] There are also five "principles" which constitute declarations of meaning, the *Declaration of Legal Principles*, the *Broadcasting Principles*, the *Remote Sensing Principles*, the *Nuclear Power Sources Principles*, and the *Benefits*

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[140] *See* National Aeronautics and Space Act of 1958., Pub. L. No. 85-568, 75 Stat. 426.
[141] Jakub Pražák, *Dual-Use Conundrum: Towards the Weaponization of Outer Space?*, 187 ACTA ASTRONAUTICA 397 (2021).
[142] de Zwart & Borgen, *supra* note 9.
[143] OST, *supra* note 6.
[144] Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, Apr. 22, 1968, 24 U.S.T. 2389, 672 U.N.T.S. 119.
[145] Convention on International Liability for Damage Caused by Space Objects, Mar. 29, 1972, 24 U.S.T. 2389, 961 U.N.T.S. 187.
[146] Convention on Registration of Objects Launched into Outer Space, Jan. 14, 1975, 28 U.S.T. 695, 1023 U.N.T.S. 15.
[147] Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, Dec. 5, 1979, 1363 U.N.T.S. 3 [hereinafter Moon Agreement].

Declaration.[148] This section does not take a deep dive into international space law, but for the purposes of this paper, it is valuable to look at three of these agreements: the Moon Agreement, the Principles on Remote Sensing, and the Principles on Nuclear Power Sources.

1. Moon Agreement

Generally, The Moon Agreement "reaffirms … that those bodies should be used exclusively for peaceful purposes, that their environments should not be disrupted, that the United Nations should be informed of the location and purpose of any station established on those bodies."[149] What is notable is that the Moon Agreement is largely clarifying terms within the OST and it has been ratified by several States but not by most space faring nations including the United States.[150] The United States' position is that the agreement opposes its interest in free enterprise and free economy.[151] Particularly, the language that claims the moon to be "common heritage of mankind" which in some economic schools of thought constitutes "common property."[152] With the United States not being a signatory, the Moon Agreement is an interesting example of a large-scale multilateral agreement in which one of the largest relevant states is not a member.

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[148] *Space Law Treaties and Principles*, U.N. OFF. FOR OUTER SPACE AFF., https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties.html (last visited Mar. 10, 2024) [hereinafter UNOOSA, *Space Law Treaties*].

[149] *Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (UN)*, LEWIK, https://www.lewik.org/term/13608/agreement-governing-the-activities-of-states-on-the-moon-and-other-celestial-bodies-un/ (last visited Mar. 10, 2024).

[150] *See* Michael David & Ricky Lee, *Twenty Years After the Moon Agreement and Its Legal Controversies*, 1999 AUSTL. INT'L J. 9 (1999).

[151] Carl Q. Christol, *The Common Heritage of Mankind Provision in the 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies*, 14 INT'L L. 429 (1980).

[152] Stanley V. Rosenfield & Delbert D. Smith, *The Moon Treaty: The United States Should Not Become A Party*, 74 PROC. ANN. MEETING (AM. SOC'Y OF INT'L L.) 162, 162–63 (1980) http://www.jstor.org/stable/25658043.

2. Principles Relating to Remote Sensing of the Earth from Outer Space

Principle VI of the Principles Relating to Remote Sending of the Earth from Outer Space says,

> "In order to maximize the availability of benefits from remote sensing activities, States are encouraged, through agreements or other arrangements, to provide for the establishment and operation of data collecting and storage stations and processing and interpretation facilities, in particular within the framework of regional agreements or arrangements wherever feasible."[153]

This section is relevant because it encourages the observational power of space assets in international agreements—such as the verification measures in several of the nuclear agreements discussed earlier in this paper.[154] Again, like the OST, we see space instruments serving a dual purpose: supporting nonweaponized activity in space, while additionally providing avenues for increased security.

3. Principle On Nuclear Power Sources

The principle on nuclear power sources is relevant to the discussion for obvious reasons. The resolution adopted by the General Assembly acknowledges that nuclear power sources are particularly suited for some space missions or even essential given their compact size and long life.[155] The principles further outline requirements for technical safety assessments and other measures of technical expertise regarding both nuclear and space technologies.[156] The need for technical expertise is a frequent contention in the terrestrial nuclear regime, drawing a parallel between these principles and several of the nuclear arms control agreements referenced earlier in this paper.

These ten instruments, including the three highlighted here, are

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[153] G.A. Res. 41/65, at princ. VI (Dec. 3, 1986)
[154] Frans von der Dunk, *United Nations Principles on Remote Sensing and the Use*, *in* EARTH OBSERVATION DATA POL'Y & EUR. 29, 34 (Ray Harris ed., May 30, 2001).
[155] G.A. Res. 41/68, at 1 (Feb. 23, 1993).
[156] *Id.*

far from a conclusive list of all agreements pertaining to space.[157] However, looking at the totality of space law, no new treaty has emerged from the United Nations Committee on the Peaceful Uses of Outer Space ("COPUOS"), since the Moon Agreement in 1979.[158] Why no new space treaties, after a flurry of them in the 1960s-1970s? That decade saw a boom of technology, and with it an immediate need for some kind of framework and rules for security.[159] Additionally, at the time, the COPUOS delegates recognized the technical expertise of the United States and the Soviet Union and gave their drafts significant weight.[160] With new players to the space field, came new opinions, needs, and factors. This complex new dynamic makes traditional methods of legal agreements a considerable challenge, leading to new avenues for collaborative space operations.

C. NATIONAL SPACE LAW, COMMERCIAL CONTRACTS, AND INTERGOVERNMENTAL AGREEMENTS

Much of modern space law lies outside the United Nations and the multilateral treaty structure. It would be remiss to not mention national space laws and contracts within the modern scope of space law.[161] States must develop some measure of national space law to govern their space-related activities in order to comply with their

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[157] The United Nations helpfully maintains a compilation booklet, 'Bilateral and Multilateral Agreements Governing Space Activities' on their website. *See Bilateral and Multilateral Agreements Governing Space Activities*, U.N. Doc. ST/SPACE/61/Rev.2, U.N. OFF. FOR OUTER SPACE AFFS., https://www.unoosa.org/oosa/en/ourwork/spacelaw/nationalspacelaw/bi-multi-lateral-agreements.html (last visited Feb. 26, 2024).

[158] Another useful page for the global space law landscape is maintained by The Wilson Center. *See* Sophie Goguichvili et al., *The Global Legal Landscape of Space: Who Write the Rules for the Final Frontier?*, (Oct. 1, 2021) https://www.wilsoncenter.org/article/global-legal-landscape-space-who-writes-rules-final-frontier.

[159] Jack Wright Nelson, *The Artemis Accords and the Future of International Space Law*, 24 AM. SOC. OF INT'L L. INSIGHTS, 1, 5 (Dec.10, 2020) https://www.asil.org/insights/volume/24/issue/31/artemis-accords-and-future-international-space-law .

[160] Bin Cheng, *The United Nations and the Development of International Law Relating to Outer Space*, *in* STUDIES IN INT'L SPACE L. 150, 188–90 (Dec. 18, 1997)

[161] FABIO TRONCHETTI, *The Future Challenges of Space Law and Policy*, *in* FUNDAMENTALS OF SPACE LAW & POLICY, 81, 82 (2013).

international obligations under the OST.[162] States need processes for notification and registration of their space activities with the international community as well as laws addressing licensing and liability procedures for private actors.[163] In addition, most space faring states adapt national legal frameworks based on their specific needs and the range of space activities conducted in their state. For example, with its clear, dark skies, lack of air traffic, and remote location, New Zealand's national space law and policies largely aim to grow and support launching capabilities.[164] Given their geographic location and present commercial enterprises, they are rightly focused on supporting and growing the launch industry.[165] For states new to the space sector, the United Nations provides mechanisms for support in the development of these legal frameworks, as well as technical expertise.[166]

There also exists a massive body of commercial international and national law that impacts outer space operations and the companies working in space. In addition to these commercial contracts are civil contracts and international ones such as the Intergovernmental Agreement ("IGA") governing the International Space Station ("ISS").[167] The international cooperation on the ISS is governed by a three-tier legal framework: the IGA, a series of Memoranda of Understanding between NASA and the other four cooperating agencies, and assorted implementing arrangements made when the need arises between NASA and the other agencies.[168] The preamble of

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[162] Frans G. von der Dunk, *Scoping National Space Law: The True Meaning of "National Activities in Outer Space' of Article VI of the Outer Space Treaty," in* PROCEEDINGS OF THE INTERNATIONAL INSTITUTE OF SPACE LAW (P. J. Blount et al.eds., 2019).

[163] *Id.*

[164] Rina Diane Caballar, *New Zealand's Quest for a Sustainable Space Industry*, VIA SATELLITE (Aug. 29, 2022) https://interactive.satellitetoday.com/via/september-2022/new-zealands-quest-for-a-sustainable-space-industry/.

[165] *National Space Policy*, NEW ZEALAND MINISTRY OF BUS., INNOVATION, & EMP. (May 2023) https://www.mbie.govt.nz/science-and-technology/space/national-space-policy.

[166] *National Space Law*, U.N. OFF. FOR OUTER SPACE AFF., https://www.unoosa.org/oosa/en/ourwork/spacelaw/nationalspacelaw.html (last visited Mar. 9, 2024) [hereinafter UNOOSA, *National Space Law*].

[167] International Space Station Intergovernmental Agreement, Jan. 29, 1998, T.I.A.S. 12927 [hereinafter ISSIGA].

[168] Diane St-Arnaud et al., *The Legal Framework for the International Space Station* U.N. COMM. ON THE PEACEFUL USES OF OUTER SPACE LEGAL

the IGA refers back to the United Nations treaties and the IGA looks to a long-term international cooperative framework.[169] The United States, working through NASA, takes a lead role for the overall coordination and management of an integrated space station.[170]

The ISS IGA gets into the weeds on issues such as jurisdiction, personnel management, ownership, allocation of rights and resources, and more.[171] In a number of other contexts, these issues may be extremely adversarial, but the IGA manages to get the space agencies of the United States, Russia, Japan, Canada, and the European Space Agency into agreement.[172] To many, the ISS IGA is a beacon of hope for international cooperation in space. While conflict and tension on earth make their way into the process, the ISS has remained operational through its existing lifetime. Though the ISS is scheduled to be de-orbited, its 21 years of continuous human presence in space is an inspiration.[173]

The precise mission of the ISS, and the IGA terms, are not analogues to many other global challenges, but it does create a proof case for the possibility of long-term collaboration on an active level. With daily international interaction taking place both on the ISS and on the ground to support operations, the ISS requires constant communication between partners. This may be the key to its success in bringing varied parties together, even while they experience conflict elsewhere.

D. THE ARTEMIS ACCORDS

In 2020 the United States began a push for a series of agreements that became the Accords.[174] The Accords underscore existing law from the OST, while also reinforcing the United States' interpretation of

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SUBCOMM (Apr. 17, 2023) https://www.unoosa.org/pdf/pres/lsc2013/tech-05E.pdf.

[169] *Id.*

[170] *Id.*

[171] *Id.*

[172] *See* ISSIGA, *supra* note 167.

[173] *The International Space Station Transition Plan*, NASA, https://www.nasa.gov/faqs-the-international-space-station-transition-plan/#:~:text=The%20International%20Space%20Station%20Transition%20Plan%20laid%20out%20NASA's%20vision,to%20travel%20into%20deep%20space (last updated Sep. 20, 2023).

[174] *Artemis Accords*, U.S. DEP'T OF STATE, https://www.state.gov/artemis-accords (last visited Feb. 27, 2024) [hereinafter DEP'T OF STATE, *Artemis Accords*].

international law—advancing the United States' thinking about operations in space globally and seeking to define language that has been debated.[175] The sections cover the need for peaceful purposes in space activities, transparency, interoperability, emergency assistance, the registration of space objects, the release and sharing of scientific data, protecting space heritage, space resources, deconflicting space activities, and orbital debris and spacecraft disposal.[176] Though the United States State Department has referred to the Accords as "a bold, multilateral vision for the future of space exploration," the individual agreements are signed bilaterally between the United States and its partners.[177] The agreements bolster existing multilateral instruments, while also perhaps attempting to set some norms of behavior.[178]

In this effort, the Accords lay out a few controversial solutions to areas ripe for conflict or international disagreement in space. One notable issue is the notion of "safety zones."[179] The OST clearly bars state appropriation of celestial bodies, but for space mining activities the question of the extracted materials becomes cloudier.[180] The Accords provide that "the extraction of space resources does not inherently constitute national appropriation," provided that "contracts and other legal instruments relating to space resources should be consistent with the [Outer Space] Treaty."[181] Presumably seeking to support the United States' commercial industry interested in space mining, the Accords then go on to establish the concept of safety zones, where a state must not interfere with other state's

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[175] Joshua Lee, et al., *Diplomatic Impact in the Stars? A Review of the Impact of the Artemis Accords on Global Relationships*, 30 CATH. U. J. L. & TECH 1, 24 (2022).
[176] DEP'T OF STATE, *Artemis Accords*, *supra* note 174.
[177] Jennifer Littlejohn, *Space Unites Us*, U.S. DEP'T OF STATE (May 5, 2023), https://www.state.gov/dipnote-u-s-department-of-state-official-blog/space-unites-us.
[178] Lee, et al., *supra* note 175, at 6.
[179] Rossana Deplano, *The Artemis Accords: Evolution or Revolution In International Space Law?,* 70 INT'L AND COMPAR. L. Q. 799, 808 (2021).
[180] Alexander Gilbert, *Implementing Safety Zones of Lunar Activities under the Artemis Accords*, 10 J. OF SPACE SAFETY ENG'G 103, 104 (2023).
[181] *The Artemis Accords: Principles for Cooperation in the Civil Exploration and Use of the Moon, Mars, Comets, and Asteroids* (Oct. 13, 2020), https://www.nasa.gov/wp-content/uploads/2022/11/Artemis-Accords-signed-13Oct2020.pdf?emrc=653a00.

resource extraction activities.[182] The Accords don't go into the specific logistics of designating territory or "zones," only limiting them by the scope and timeline of the existing space activity's operations.[183] One can imagine that such a practice may favor states with ample resources – creating a sort of "first in time, first in right" approach to resource extraction or other activities on celestial bodies. Further, the Moon Agreement (which, recall, the United States is not party to) expressly states that the Moon "and its natural resources are the common heritage of mankind," and commits states to creating regimes for governing space resources.[184] Such conflicts in language or notions of territorial delegations could easily lead to international tension—so why have 27 countries, several of whom are party to the Moon Agreement (e.g., the Netherlands, Uruguay, Mexico, etc.), signed the Accords?[185]

The Accords initially targeted allies, as its first signatories included the United Kingdom, the United Arab Emirates, Luxembourg, Japan, Italy, Canada, and Australia.[186] The Accords encourage the notion of cooperation and state a desire for establishing joint-efforts, including mention of the United States Artemis mission, but there is no tangible "carrot" for the signatories beyond affirming OST principles and showing an understanding for the United States' interpretation of them.[187] Looking to less concrete motives, signing is a show of support for a state's relationship to the United States. It fosters a sense of collaboration and is a show of trust within the United States—who is an advanced and predictable partner in space activities.

Additionally, an interpretation of international law that benefits the United States space industry also benefits the commercial sectors of other signatories. The more lenient interpretation of appropriation and the policy focus on commercial endeavors would benefit space companies in any country. The ownership rights to the "fruit of your

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[182] Matthew Gross, *The Artemis Accords: International Cooperation in the Era of Space Exploration*, HARV. INT'L. REV. (Jan. 27, 2023), https://hir.harvard.edu/the-artemis-accords.
[183] Gilbert, *supra* note 180, at 106.
[184] Moon Agreement, *supra* note 147, art 11.
[185] DEP'T OF STATE, *Artemis Accords*, *supra* note 174; *see also Moon Agreement*, NTI, https://www.nti.org/education-center/treaties-and-regimes/agreement-governing-activities-states-moon-and-other-celestial-bodies-moon-agreement/ (listing countries that have ratified the Moon Agreement).
[186] Lee, et al., *supra* note 175, at 10.
[187] *Id.* at 9.

labor" are a tried-and-true incentive model for humans, underscoring the classical notion that to claim property has always been an economic incentive for human expansion. [188] Is the "carrot" for the Accords a bet on the signatory's own commercial space industry or a showing of good faith with the hope that it leads to engagement with the United States industry? Regardless, as more and more states join the Accords, their popularity grows. It is too early yet to determine if the Accords have truly made space a safer and more collaborative domain.[189] There is genuine concern that if China and Russia are not a part of the process, the Accords will contribute to the escalation of competition and rivalry in space.[190]

The Chinese relationship is impacted by the Wolf Amendment, which bars NASA's cooperation with China.[191] In 2023, China announced its creation of the International Lunar Research Station Cooperation Organization ("ILRSCO") in support of the China-led International Lunar Research Station ("ILRS").[192] ILRSCO is somewhat analogous to the Accords and its political groundwork—the notion being to create an international collaborative group working on the Moon.[193] Russia is working with China on the ILRS, as well as a growing number of other countries.[194] While the Accords and the ILRSCO may easily operate parallel to one another, it may also represent a "bifurcation in lunar governance and approaches to lunar

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[188] Andrew Brooks, *The Artemis Accords: The Necessary Incentive of Space Extraction Rights*, COLUM. J. OF TRANSNAT'L L.: BULLETIN BLOGPOSTS (Nov. 9, 2020), https://www.jtl.columbia.edu/bulletin-blog/the-artemis-accords-the-necessary-incentive-of-space-extraction-rights.

[189] Almudena Azcárate Ortega, *Artemis Accords: A Step Toward International Cooperation or Further Competition?*, LAWFARE (Dec. 15, 2020, 10:25 AM), www.lawfareblog.com/artemis-accords-step-toward-international-cooperation-or-further-competition.

[190] Guoyu Wang, *NASA's Artemis Accords: The Path to a United Space Law or a Divided One?*, THE SPACE REV. (Aug. 24, 2020), https://www.thespacereview.com/article/4009/1.

[191] Department Of Defense and Full-Year Continuing Appropriations Act, 2011, Pub. L. No. 112-10, 125 Stat. 123.

[192] Andrew Jones, *China to establish organization to coordinate international moon base*, SPACE NEWS (April 28, 2023), https://spacenews.com/china-to-establish-organization-to-coordinate-international-moon-base/.

[193] *Id.*

[194] *Id.*

missions, where you are either Team Artemis or Team ILRS."[195]

Given this bifurcation, it cannot be said that the Accords are the global success story they sometimes purport to be (at least not yet). Though that is not a signal of failure. Due to the Accords, significant dialogues are happening collaboratively on the world stage—garnering public attention. Both the Accords and the ILRSCO represent new agreements, where none had come for many years. Like many issues of international law, both walk the line between friendly cooperation and escalating competition—but at least that line is up for discussion. The Accords, primarily underscoring established law in the OST, move the ball forward just slightly, keeping discussion of issues like resource allocation, jurisdiction, and common heritage productive. If these issues are to be solved, they have to be put forth beyond debates on the U.N. committee floor. Criticism of the Accords is just as healthy as praise because it keeps the dialogue in motion.

Perhaps this is the victory of soft law. While lacking in weight, its ease is its superpower. Creating consistent and constant communication helps build predictability and trust, which is a recipe for a more secure world.

VI. DRAWING THE ANALOGY: WHERE SPACE AND NUCLEAR LEGAL FRAMEWORKS ALIGN AND DIVERGE

Reviewing the nuclear arms regime and space law, there are some analogies that can be drawn between the two. Identifying these overlaps in function and purpose enables the discovery of useful lessons from one to the other. The first and most obvious of these are the players: the United States and Russia are the historical and modern powerhouses both in space and in nuclear weapons. While a focus on these nations remains at the forefront of both areas today, the arena looks different than it has in the past. The global scope is bigger, as smaller or less-resourced nations are actively pursuing space operations or seeking nuclear resources more aggressively for energy.

Looking back to the OST and its dual role as a space operations and arms control treaty, there are some obvious ways space law impacts nuclear arms control. For instance, the nuance between weaponization and militarization being front and center, shows a

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[195] Andrew Jones, *Venezuela Signs up to China's Moon Base Initiative*, SPACE NEWS (July 18 2023), https://spacenews.com/venezuela-signs-up-to-chinas-moon-base-initiative/ (quoting Victoria Samson of the Secure World Foundation).

clear delineation in the purpose of activities. This is mirrored in the nuance between nuclear arms and nuclear energy and the balance of those dual uses. The dual use of space and nuclear technology is also reflected in how the agreements support one another—space treaties can assist with compliance monitoring of nuclear treaties. This space-based enforcement of nuclear treaties can help to alleviate less politically practical inspection methods, such as traveling to nations with fragile security. Ongoing norms in space can be instrumental in supporting arms control measures.

Legal instruments regarding space also share a need for technical expertise with nuclear agreements. Building a nuclear facility or objects meant for space is extremely complex and specialized work.[196] A national workforce that can build nuclear weapons or rockets is an educated and well-funded one.[197] This complexity also drives a need for technical expertise in agreements.[198] Verification mechanisms, present in both space and nuclear arms agreements, require specialists who know what they're looking at.[199] Facilitating reviews of the building processes, storage, and safety requires collaboration in identifying and agreeing upon who is an expert and qualified to verify terms are being met.[200]

Nuclear arms control agreements and space law are also negative, or limiting, agreements.[201] Rather than saying, "here is what can be done," they focus on "here is what may not be done." This is reasonable, for if the emphasis was on prescribing what *can* be done in space, the list would be infinite. The implication that anything unlisted would not be allowed in space would be severely limiting in a domain so large. Turning to nuclear, the reasoning for the limiting approach is inherent: the desire is to reduce the number of nuclear weapons that exist, not to encourage new ways to use them. The

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[196] *See e.g.*, JAMES MOLTZ, THE POLITICS OF SPACE SECURITY: STRATEGIC RESTRAINT AND THE PURSUIT OF NATIONAL INTERESTS 31–32 (2d ed., 2011) (summarizing the technological determinist view that advancements in space technology were linked to advancements in nuclear technology).
[197] Bryan Early, *Exploring the Final Frontier: An Empirical Analysis of Global Civil Space Proliferation*, 58 INT'L STUD. Q. 55, 59 (2014).
[198] Gerald Kirchner & Stefan Oeter, *Technical Limits of Verification and Their Implications for Treaty Design, in* NUCLEAR NON-PROLIFERATION IN INTERNATIONAL LAW 167, 174 (Jonathan L. Black-Branch & Dieter Fleck, eds., 2016).
[199] *Id.* at 177–78.
[200] *Id.* at 174.
[201] Eric Stein, *Legal Restraints in Modern Arms Control Agreements*, 66 AM. J. OF Int'l L. 255, 255 (1972).

negative approach feels practical in these instances – it addresses very specific limitations (as in, you may not create new warheads) and outlines actions meant to restrain operations (as in, you must reduce your warheads by a certain number), without touching the wide array of what is left outside of that specification. This restrictive approach remains the norm in nuclear arms, but in space there is an apparent shift to permissive ideals.[202] This is present in the domestic laws within the United States,[203] but also notable in the Accords. The Accords name activities and seek to protect them, such as resource extraction.

A shift from restrictive to permissive thinking notably coincides with the accelerated use of soft law mechanisms in space. Nuclear arms agreements and space both deal with the challenges of dual use technologies and the need for extremely specialized expertise. Could a shift to soft law thinking revive nuclear arms discussions in the same way?

VII. APPLYING THE SOFT LAW LESSONS OF SPACE LAW TO THE NUCLEAR REGIME

The Accords fall into the soft law category as a non-binding normative instrument that lays out a set of understandings, principles of behavior, and standards.[204] While there are no binding measures, the Accords further the legal perspective of the United States and show a growing trend towards permissive views on space operations.[205] The crystallization of the standards and norms the United States hopes to eventually codify beyond these political agreements may help override the views of dissenters by laying the

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[202] Kevin O'Connell, *Advancing Space Commerce: What Does 'Light Touch, Permissive Regulation' Mean?*, OFF. SPACE COM. (Dec. 5, 2018), https://www.space.commerce.gov/advancing-space-commerce-what-does-light-touch-permissive-regulation-mean.

[203] United States domestic law is working towards more permissive models in space governance, for example, in remote sensing. *See NOAA Eliminates Restrictive Operating Conditions from Commercial Remote Sensing Satellite Licenses*, OFF. SPACE COM., (Aug. 7, 2023), https://www.space.commerce.gov/noaa-eliminates-restrictive-operating-conditions-from-commercial-remote-sensing-satellite-licenses/.

[204] Laura Byrd, *Soft Law in Space: A Legal Framework for Extraterrestrial Mining*, 71 EMORY L. J. 801, 805 (2022).

[205] *See supra* notes 202–203 and accompanying text.

basis for forming new customary international law.[206]

Looking back to the TPNW, there is international interest in developing norms of behavior regarding nuclear weapons.[207] Further, looking to SORT, working groups and commissions have been agreed upon in the past by the United States and Russia.[208] So, clearly, there may be some opportunities for soft law in nuclear arms control. This section will look directly to creating norms and to the power of communication channels instigated by soft law mechanisms.

A. DEVELOPING CUSTOMARY INTERNATIONAL LAW TO SUPPORT NON-PROLIFERATION

International law may be formed through state practices that rise to the level of custom.[209] Article 38 of the International Court of Justice Statute, the article which directs the Court to decide cases submitted to it through treaties or custom, refers to "international custom, as evidence of a general practice accepted as law."[210] For a practice to rise to the level of customary international law, the state practice must be consistent, and the practice must occur out of a sense of legal obligation – often referred to as *opinion juris*.[211] In many cases lawyers have successfully argued that many treaties and agreements have become customary international law, obligating states to its terms and/or definitions whether or not they are signatories.[212] This is an immensely powerful tool when it comes to rapidly developing technology and areas in which the formal treaty-making process has stalled.

The consistency of the general principles of the OST is well recognized – which is broadly true of the nuclear arms regime as well.[213] However, whether the primary nuclear arms agreements have

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[206] *See* Dinah L. Shelton, *Soft Law* 8 (Geo. Wash. Univ. L. Sch., Working Paper, Public Law and Legal Theory Working Paper No. 322, 2008) (discussing uses of soft law).
[207] Hanson, *Normalizing Zero Nuclear Weapons*, *supra* note 86.
[208] Kimball, *SORT at a Glance*, *supra* note 99.
[209] For a deeper look at customary international law and the relevant case law, see Stefan Talmon, *Determining Customary International Law: The ICJ's Methodology between Induction, Deduction and Assertion*, 26 EUR. J. INT'L L. 417 (2015).
[210] ICJ Statute, *supra* note 31, art. 38, ¶ 1(b).
[211] *Id.*
[212] *See* Military and Paramilitary Activities in and against Nicaragua (Nicar. v. U.S.), Judgment, 1986 I.C.J. 14, ¶ 177 (June 27).
[213] Tronchetti, *supra* note 161.

transcended to customary international law is less relevant than in space agreements – as only a limited number of states have nuclear weapons compared to the number of states engaged in space operations. Further, the specificity of the nuclear state actors the NPT applies to, for example, removes most any argument of *opinion juris* for most of the active practices. So why then, is the discussion of customary international in space potentially useful to the nuclear arms regime?

The Accords leverage the OST's broad principles and operationalize them.[214] These soft law agreements don't create obligations so much as they construct definitions and elaborations on existing principles.[215] The political and diplomatic move to bring nations into the United States space system with a non-obligatory agreement, that so frequently refers back to the beloved OST, has no doubt played a part in their popularity.[216] As more nations sign, the more states develop a sense of legal obligation to these definitions – by which they may craft their own practices. It is a slow game, but in their own way the Accords are slowly building on to the OST – something that would have proved impossible on the floor of the United Nations.

There is an opportunity for the nuclear arms regime to learn from this. First identifying what has worked with the major nuclear players. Second, looking for ways to move the ball only slightly forward – as in, what definitional or marginal terms push the goals forward without rocking the boat too hard. There may be an opportunity to bring the major nuclear weapon states more meaningfully back together without the baggage of the arguments over the existing agreements. The Accords are a way to say, "we all love the OST and respect it; let's build on that." Which, while it has caused controversy and criticism (which is largely unavoidable), it did not go so far as to make states reject it outright.[217] In nuclear arms, there may be room to say, "we all appreciate the NPT; let's build on that."

However, using customary international law to create new law is a long process, and ripe with uncertainty. Further, where nuclear

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[214] Walker A. Smith, *Using the Artemis Accords to Build Customary International Law: A Vision for a United States Centric Good Governance Regime in Outer Space*, 86 J. AIR L. & COM. 661, 663 (2021).
[215] *Id.*
[216] *Id.* at 688.
[217] Christopher Newman, *Artemis Accords: Why Many Countries are Refusing to Sign Moon Exploration Agreement*, THE CONVERSATION U.K., (Oct. 19, 2020), https://theconversation.com/artemis-accords-why-many-countries-are-refusing-to-sign-moon-exploration-agreement-148134.

arms are so fundamentally dangerous, friendly agreements are harder to come by. It's much easier to agree to space missions on the Moon that don't inherently threaten other nations. Competing space operations may prevent a state from completing the same work or limit future space access, but they do not threaten to end life on Earth. So, while customary international law may be "a tool in the toolbox" for diplomats and lawmakers working within the nuclear arms control regime, it is unlikely to experience the same success the Accords have experienced thus far.

B. USING SOFT LAW TO SUPPORT NON-PROLIFERATION

The Accords are a controversial initiative, but they have been largely well received.[218] This is partially because the United States is an excellent partner to have, as one of the most active nations in space.[219] The Accords are an opportunity to revisit old allies and partners and reach out to new ones outside of the traditional U.N. walls. Utilizing distinguished figureheads in space and celebrating the notion of partnerships, they also facilitate trust.[220] The importance of the U.N. structure and the formal treaties is not in question, but the Accords operate outside such formality. They serve as a secondary mechanism for dialogues on space operations. This is where soft law can shine: its non-obligatory nature makes finding assent easier and it keeps relevant conversations happening. The process of making soft law may be where the nuclear arms regime can glean its greatest lesson from space law.

There is a general fear that the former nuclear arms structure is weakening, and norms are degrading. That shift is alarming and scary as the world aims to work toward total disarmament. If coming to a new agreement is not an option, which seems likely, keeping channels open is better than nothing. If agreements are heading toward deterioration, retaining communication keeps us safer than channels going dark. While soft law agreements may not be able to go as far as states desire, and may not even provide new additional safety measures, they *can* play a role in keeping communication channels open and functioning.

In the same way that the Accords provide the United States

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[218] Gross, *supra* note 182.
[219] *Id.*
[220] Nancy Riordan et al., *Space Diplomacy and the Artemis Accords*, 18 THE HAGUE J. DIPL. 380, 392–93 (2023).

with a less formalized way to communicate with partners and celebrate alliances and partnerships, soft law mechanisms in nuclear arms may re-open or keep open channels of communication with critical states like Russia and China. Learning from the Accords, it is important to start small and view this style of agreement for what it is, a trust builder. A future new nuclear arms agreement may not be capable of overhauling the regime, but it may be able to promote global values of nonproliferation and influence other actors. In this way, using soft law as it is being used in space via the Accords, may be extremely useful to nuclear arms goals.

To do this, the United States must determine some general principles that are most critical – reaffirming and building on existing principles. An agreement must garner a feeling of partnership and mutual respect for long held traditions. This could range from what constitutes an inspection, to the facilitation of working groups like those instigated through the SORT, to underscoring existing nonproliferation obligations. The aforementioned 2022 joint letter between the five nuclear states in the NPT, reaffirming their commitment to the treaty, could serve as a launching point.[221] The goal of an Accords style soft law agreement is to foster positive and friendly communications in an operational domain, starting from mutually understood principles. Leveraging positive communications and agreements of the past, like the Accords do with the OST, is a pathway to future agreements because it generates expectations and predictability. Expectations and predictability are a pathway to trust.

In an arms regime lacking in trust, as it appears to be now, soft law agreements may be a guiding star back.

VIII. CONCLUSION

This paper has argued that the nuclear arms regime could learn from modern space law, by utilizing the soft law model laid out by the Accords. To do this the functions of international law and the current status of multilateral agreements in both space and nuclear arms were detailed. In exploring the analogies between space law and nuclear arms agreements, the Accords, and their creation, was described. While the comparison is imperfect, there are lessons from the

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[221] *Joint Statement of the Leaders of the Five Nuclear-Weapon States on Preventing Nuclear War and Avoiding Arms Races*, THE WHITE HOUSE, Jan. 3, 2022, https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/03/p5-statement-on-preventing-nuclear-war-and-avoiding-arms-races/.

Accords, and the creation of soft law, that arms control methods may benefit from. The creation of customary international law may play a role, but more significantly the quiet superpower of soft law is communication. The Accords have relied on long held principles from the OST, included notable and distinguished individuals, and invited other nations to be a part of space traditions. They've worked to generate a feeling of inclusivity over obligation, and progress over restrictions.

Whether or not this shift in tone lasts, soft law keeps the dialogue moving and makes it easier for states to come together than more formal tactics do. Even when communication is contentious, it creates predictability, which is a pathway to trust. When global nuclear security is at risk, having open channels of communication makes the world safer than not. Soft law, as used in the recent Artemis Accords, may be a viable model for facilitating that communication.