ARTICLES

Why Isn't Outer Space a Global Commons?

John S. Goehring*

Intr	ODUC'	TION	573
I.	THE VARIOUS MEANINGS OF GLOBAL COMMONS		574
	A.	Global Commons as an Enabling Concept	574
	B.	Global Commons as a Constraining Concept	577
II.	EO	13914's Concern About "Global Commons" as a Constraint	581
	A.	EO 13914 Targets "Global Commons" as a Constraining	
		<i>Concept</i>	581
	B.	How "Global Commons" as a Constraining Concept is Ill-	
		Suited to Outer Space	583
III.	Mo	VING ON WITHOUT THE GLOBAL COMMONS	587
Con	CLUSIO	ON	590

Introduction

The United States does not view outer space as a global commons, according to Executive Order (EO) 13914 issued by President Donald Trump on April 6, 2020. This policy declaration will be welcomed by some, lamented by others, and surely many more will simply find it confusing – an intriguing range of reactions for a seemingly simple term to generate. This article examines the role that notions of the global commons play in U.S. policy on the recovery and use of space resources. It argues the term "global commons" has more than one legitimate meaning, and, in failing to account for this complexity, the EO complicates, rather than simplifies, productive discourse not only about the space domain but also about other domains.

This article proceeds in three parts. Part I establishes the premise that the term "global commons" has no authoritative definition and demonstrates how it is used as a label for two concepts: an enabling concept used in military or geopolitical concepts, and a constraining concept used in economic contexts. Whereas Part I demonstrates how the enabling concept is grounded in the Outer Space

^{*} John S. Goehring (B.A., University of California, Berkeley; J.D., Tulane Law School; LL.M., McGill University, Institute of Air and Space Law) is a space and international law attorney for the Department of Defense and a judge advocate in the United States Air Force Reserve. The views expressed are solely those of the author and do not reflect the position of the U.S. Government, Department of Defense, or Air Force. © 2021, John S. Goehring.

^{1.} Exec. Order No. 13914, 85 Fed. Reg. 20,381 (Apr. 10, 2020) ("Outer space is a legally and physically unique domain of human activity, and the United States does not view it as a global commons.").

Treaty, Part II argues the constraining concept, with which the EO is concerned, provides a basis for denying outer space is a global commons. Part III offers recommendations on how to navigate discourse involving either the enabling concept or the legality of space resource recovery in light of the EO's determination that outer space is not a global commons.

I. THE VARIOUS MEANINGS OF GLOBAL COMMONS

The term "global commons" has no authoritative definition.² Consequently, discourse on the subject is often fraught with misunderstanding because the intended meanings may be unclear or applied inconsistently. Taking this into account, it is submitted that "global commons" is best understood as a label for one of two concepts: an enabling concept or a constraining concept.³

A. Global Commons as an Enabling Concept

When used in a military or geopolitical context, "global commons" is typically used as an enabling concept. It refers to domains "that lie outside the exclusive jurisdiction of any particular state but may be accessed and used by those states or their nationals." The Obama Administration, for instance, referred to the global commons as simply "those areas beyond national jurisdiction that constitute the vital connective tissue of the international system." These domains include the high seas, the airspace outside of a state's territorial waters, and outer space. The electromagnetic spectrum and cyberspace have also been described as global commons.

This concept is enabling in the sense that these traits – lying beyond national jurisdiction and free for access by all – are thought to enable prosperity and security. "Prosperity of the United States depends upon its largely uncontested ability to access and use the global commons," according to the 2016 Joint Chiefs of

^{2.} E.g., Lieutenant Colonel Patrick Franzese, Sovereignty in Cyberspace: Can it Exist?, 64 A.F. L. REV. 1, 15 (2009) ("No universally accepted definition exists and, depending upon which dictionary or non-governmental organization one consults, a slightly different or nuanced definition appears.").

^{3.} For a different characterization, see P.J. Blount & Anonymous, *Another Pyrrhic Victory: The White House's Latest Executive Order on Space Mining*, SPACEWATCH.GLOBAL, https://perma.cc/3N4V-7QT4 (distinguishing the idea of a commons "in the economic sense" from the "international law concept of global commons.").

^{4.} Major John W. Bellflower, *The Influence of Law on Command of Space*, 65 A.F. L. Rev. 107, 120 & n.74 (2010) (citing Christopher C. Joyner, International Law in the 21^{st} Century: Rules for Global Governance, 224-25 (2005)).

^{5.} U.S. DEP'T OF DEFENSE, SUSTAINING GLOBAL LEADERSHIP: PRIORITIES FOR 21ST CENTURY DEFENSE 3 (Jan. 2012), https://perma.cc/47T3-698E.

^{6.} See Joint Chiefs of Staff, U.S. Dep't of Defense, Joint Operating Environment 2035: The Joint Force in a Contested and Disordered World 30 (July 14, 2016) [hereinafter JOE 2035], https://perma.cc/JUE9-FLLC.

^{7.} *Id.* (electromagnetic spectrum); RONALD O'ROURKE, CONG. RSCH. SERV., R43838, RENEWED GREAT POWER COMPETITION: IMPLICATIONS FOR DEFENSE – ISSUES FOR CONGRESS 1 (Sep. 30, 2020) [hereinafter CRS REPORT] (cyberspace). SCOTT W. HAROLD ET AL., THE U.S.-JAPAN ALLIANCE AND DETERRING GRAY ZONE COERCION IN THE MARITIME, CYBER, AND SPACE DOMAINS 105 (2017) [hereinafter RAND REPORT]; *but see* Franzese, *supra* note 2, at 1 (arguing cyberspace is not a global commons).

Staff report *Joint Operating Environment (JOE)* 2035. JOE 2035 further asserts "[o]pen and accessible global commons," including outer space, "are the pillars of the current international economy and empower states that use them to conduct commerce, transit, scientific study, or military surveillance and presence." The Joint Chiefs of Staff also observed in the Joint Operational Access Concept, released in 2012, that U.S. access to the global commons, including outer space, is "vital to its national interests, both because the American way of life requires free access to the global marketplace and as a means for projecting military force into hostile territory." In a defense review directed by President Obama, Secretary of Defense Leon Panetta identified the importance of protecting freedom of access to the global commons, including outer space, "to enable economic growth and commerce." 10 "The United States will continue to lead global efforts with capable allies and partners," the report emphasized in italics, "to assure access and use of the global commons, both by strengthening international norms of responsible behavior and by maintain relevant and interoperable military capabilities."11 More recently, Vice President Mike Pence embraced the importance of the commons. "[T]o make it clear to Beijing that no nation has a right to claim the maritime commons as territorial seas," he said, "the United States, in the last year, has increased the tempo and scope of our freedom of navigation operations and strengthened our military presence across the Indo-Pacific."12

While the Department of Defense is perhaps the most prominent organization to apply the label in this manner, it not the only entity that has espoused the importance of the global commons as an enabling concept. The Congressional Research Service has observed that the treatment of international waters, international air space, and outer space as "international commons" is a "key feature" of international order. Similarly, the U.S.-China Economic and Security Review Commission has observed that "norms against altering borders by force and for access to the open global commons (e.g., freedom of the seas) are inherent" to the concept of the "liberal rules-based international order." Internationally, a NATO report has affirmed "[i]t is within, through, and from the Commons that trade, communications, transportation, and security operations take place."

Private think tanks also recognize the global commons as an important enabling concept. A report by the RAND Corporation has concluded "[i]f the global

^{8.} JOE 2035, supra note 6, at 30.

^{9.} Joint Chiefs of Staff, U.S. Dep't of Defense, Joint Operational Concept (JOAC) 5 (Jan. 2012).

^{10.} U.S. DEP'T OF DEFENSE, SUSTAINING U.S. GLOBAL LEADERSHIP, *supra* note 5, at 3.

^{11.} Id.

^{12.} Vice President Mike Pence, Address at the Frederick M. Malek Memorial Lecture (Oct. 24, 2019), https://perma.cc/9XJG-8BTL.

^{13.} CRS REPORT, *supra* note 7, at 1 n.2, 15.

^{14.} U.S.-China Economic and Security Review Commission, 2016 Report to Congress 476 n.*.

^{15.} Major General Mark Barrett et al., Assured Access to the Global Commons: Maritime, Air, Space, Cyber, XII (2011), https://perma.cc/TP6Q-9BVL (As the title suggests, this report regards outer space as a global commons).

commons of the high seas, the internet, or outer space are turned into arenas where actors of unknown provenance can carry out attacks on peaceful status quo powers with impunity, then the order that has supported peace and development will itself be at risk." The Heritage Foundation also recently concluded that "a review of relevant top-level national security documents issued by a long string of presidential Administrations" consistently stated three national security interests, including the "[p]reservation of freedom of movement within the global commons: the sea, air, outer space, and cyberspace domains through which the nations of the world conduct their business."17 For its part, the Center for Strategic & International Studies (CSIS) has espoused a "Command the Commons Approach" to security, meaning "that the United States gets vastly more military use of the sea, space, and air than do others, that the United States can credibly threaten to deny their use to others, and that others would lose a military contest for the commons if they attempted to deny them to the United States."18 To be sure, "commons" and "global commons" can be used imprecisely in these contexts. Territorial seas, for example, are subject to national jurisdiction under international law, but this distinction is sometimes glossed over by those espousing the "sea" as a global commons. Nevertheless, the potential for a term with no authoritative meaning to be used imprecisely does not detract from the legitimacy of using it to describe the enabling concept.

As these claims demonstrate, the concept of global commons as an enabler of prosperity, security, and global order is often used in a military or geopolitical context. Moreover, the term has been used countless times in this manner to refer to outer space. Recent examples of notable people describing outer space as a global commons include former Secretary of Defense Mark Esper (2020);¹⁹ General David Goldfein, former Chief of Staff of the Air Force (2019);²⁰ John Yoo, Professor and former official in the Department of Justice, Office of Legal Counsel (2020);²¹ General John Hyten, Vice Chairman of the Joint Chiefs of Staff and former Commander of United States Strategic Command and of Air Force Space Command (2016 and 2017);²² General James Cartwright, former Vice

^{16.} RAND REPORT, supra note 7, at 105.

^{17.} THE HERITAGE FOUNDATION, 2020 INDEX OF MILITARY STRENGTH 2 (Dakota L. Wood, ed., 2020), https://perma.cc/Q3X4-C9KA.

^{18.} Kathleen H. Hicks & Joseph Federici, Getting to Less? Exploring the Press for Less in America's Defense Commitments, Center for Strategic and International Studies 3 (2020), https://perma.cc/26RA-5XJX.

^{19.} Mark Esper, Secretary of Defense, Joint Press Briefing with French Minister of Armed Forces Parly (Jan. 27, 2020), https://perma.cc/6LPS-XP8S.

^{20.} Charles Pope, Gen. Goldfein Hosts Inaugural Space Conference for U.S., Partner Nations, A.F. SPACE COMMAND (Apr. 17, 2019), https://perma.cc/K5Z4-3N6C.

^{21.} John Yoo, Rules for the Heavens: The Coming Revolution in Space and the Laws of War, 2020 U. ILL. L. REV. 123, 159 (2020).

^{22.} General John E. Hyten, *Space Mission Force White Paper* 2 (June 29, 2016), https://perma.cc/G2LD-MCT9; General John E. Hyten, *Air Force Space Command Commander's Strategic Intent* 11, 16 (2016), https://perma.cc/8MB9-ZKYR.

Chairman of the Joint Chiefs of Staff (2016);²³ and Admiral Cecil Haney, former Commander of United States Strategic Command (2016).²⁴ General Hyten perhaps summed up this idea best when he wrote, "[s]ecuring our right to use space is simply an extension of an age old principle to guarantee use of global commons."²⁵

Outer space is consistently identified as a global commons in this sense because the 1967 Outer Space Treaty guarantees the defining traits – lack of national territorial jurisdiction and freedom of use and access. Article I of the 1967 Outer Space Treaty guarantees all States the right to use space and freely access celestial bodies, declaring "outer space, including the Moon and celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies." Article II guarantees that no State can claim sovereignty over territory in outer space or celestial bodies, declaring it "not subject to national appropriation by claim of sovereignty, by use or occupation, or by any other means." Hence, territorial jurisdiction is prohibited. In addition, Article XII requires that "[a]II stations, installations, equipment, and space vehicles on the Moon and other celestial bodies... be open to ... other States Parties to the Treaty on the basis of reciprocity," further reinforcing the right to access even occupied areas on the Moon.²⁹

B. Global Commons as a Constraining Concept

In an economic context, as opposed to a military or geopolitical context, "global commons" is typically used to convey a constraining concept. The concept of a "commons" may be thought of as constraining because it is often associated with notions of shared ownership, public governance, or limitations on use. Whether these constraints are viewed positively or negatively is a subjective assessment.

The constraining concept is more complicated than the enabling concept because it can reflect two distinct meanings. This is likely a function of its history. "The 'commons,' of course, has a long historical and intellectual lineage ranging from the enclosure movement in England, to Garret Hardin's famous *Tragedy of the Commons* parable, to Elinor Ostrom's Nobel-prize winning work on governing common pool resources," observe Professors Foster and Iaione. Applying rational-choice theory, Hardin postulated that individual actors "automatically

^{23.} James E. Cartwright, *Foreword* to TOWARD A NEW NATIONAL SECURITY SPACE STRATEGY: TIME FOR A STRATEGIC REBALANCING i (Frederick Kempe et al. eds., Atlantic Council, 2016).

^{24.} Admiral Cecil D. Haney, U.S. Strategic Command, Address at 32nd Space Symposium (Apr. 14, 2016), https://perma.cc/NRV3-VULJ.

^{25.} Hyten, Space Mission Force White Paper, supra note 22, at 2.

^{26.} Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies art. I, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 [hereinafter Outer Space Treaty].

^{27.} Id. at art. II.

^{28.} See Bin Cheng, Studies in International Space Law 230, 233, 400 (1997).

^{29.} Outer Space Treaty, supra note 26, at art. XII.

^{30.} Sheila R. Foster & Christian Iaione, *The City as a Commons*, 34 YALE L. & POL'Y REV. 281, 285 (2016).

tend to over-exploit and plunder common-pool resources that are freely available to everyone."³¹ The only possible solution to this dilemma, according to Hardin, was "the enclosure of resources through private property, or, failing that, public regulation."³² Ostrom's work later "turned [Hardin's] conventional wisdom upside down: complex socio-ecological systems (in which goods are extractable and beneficiaries are hard to exclude) can prove to be sustainable resource domains granted that its stakeholders adopt a polycentric and self-regulated mode of governance."³³

As this brief summary suggests, one meaning of "commons" is simply to describe a category of goods.³⁴ This usage was typical prior to Ostrom's influence.³⁵ In this meaning, a common is a resource to which access is shared, such as an open hunting ground. Some common resources may offer more than one type of benefit. For example, a hunting ground may offer open space for recreation, game to hunt, and trees for building. Some common resources may be subtractable, meaning that use of the resource subtracts from the ability of others to use the resource, while others remain plentiful. Describing a resource in this manner, as a common resource, does not necessarily imply any particular property regime or use limitations.³⁶ A common hunting ground, for instance, may be publicly owned or privately owned. Ostrom helped popularize the term "common pool resource" to describe this general category of resources.³⁷

As Dr. Tepper argues, "[i]t is crucial to differentiate between resources and the legal regime that governs them." This is because the term "global commons" – or simply "commons" – can also be used in an economic sense to refer to a form of collective ownership and governance rather than to the economic goods themselves. As Professors Cogolati and Woulters observe, "[u]nder Ostrom's influence, the commons have become more closely connected with the collective self-governance and participatory mechanisms they imply, than with the strict category of (rivalrous and non-excludable) economic goods they used to refer to." This may account for the notion held by some that "the commons is less a description of the resource and its characteristics and more of a normative claim

^{31.} Samual Cogolati & Jan Woulters, *Introduction: Democratic, Institutional and Legal Implications of the Commons for Global Governance* to THE COMMONS AND A NEW GLOBAL GOVERNANCE 1, 2 (Samual Cogolati & Jan Woulters eds., 2018).

^{32.} *Id*.

^{33.} Id. at 1.

^{34.} See Eytan Tepper, Structuring the Discourse on the Exploitation of Space Resources: Between Economic and Legal Commons, 49 SPACE POL'Y 1, 9 (2019) (distinguishing "commons as an economic term" that refers to a "type of resource" from "commons as a legal regime" which "refers to a property rights system").

^{35.} Cogolati & Woulters, supra note 31, at 4.

^{36.} See Tepper, supra note 34, at 9.

^{37.} See Derek Wall, The Commons in History: Culture, Conflict, and Ecology 5 (2014).

^{38.} See Tepper, supra note 34, at 9.

^{39.} See WALL, supra note 37, at 6.

^{40.} Cogolati & Woulters, supra note 31, at 4.

to the resource" (emphasis original).⁴¹ Used in this way, a commons is a category of property rights based on collective ownership.⁴² Put simply, "commons" is sometimes used to refer to common property, meaning a resource with more than one owner, and which therefore should be governed collectively.

This notion of a commons is sometimes associated with the common heritage of mankind concept, particularly in the context of outer space. As expressed in Article 11(3) of the 1979 Moon Agreement, the common heritage of mankind concept creates a new type of territorial status in which the moon and celestial bodies "are not only in themselves not subject to national appropriation in a territorial sense, but the fruits and resources of which are also deemed to be the property of mankind at large," according to Professor Cheng. This principle, as characterized by Professor Christol, not only "protects the proposition what [sic] given areas and their resources are open to inclusive use and that there may not be exclusive use," but also "goes farther: it asserts that there must be a sharing of the benefits and of the values derived from the indicated commons." In other words, status as the common heritage of mankind does not permit full private property rights in space resources.

It should be noted that the concept of the common heritage of mankind is not limited to the outer space domain. In 1970, the United Nations (UN) General Assembly passed a non-binding resolution declaring "[t]he sea-bed and ocean floor, and the subsoil thereof, beyond the limits of national jurisdiction (hereinafter referred to as the area), as well as the resources of the area, are the common heritage of mankind."45 Years later – after the completion of the Moon Agreement - this principle was codified in Article 136 of the 1982 UN Convention on the Law of the Sea (UNCLOS).⁴⁶ Importantly, while the area is the common heritage of mankind according to the Convention, the high seas above the area remains free. 47 Hence, some may refer to the high seas as a global commons (in the enabling sense), while others may refer to the deep sea bed as a global commons (in the constraining sense) – a clear example of why the term is fraught with misunderstanding. While the concept of common heritage of the seabed and of the Moon and other celestial bodies are linked, the Moon Agreement declares that the content of the common heritage of mankind concept as it applies to States Parties "finds its expression in the provisions of this

^{41.} Foster & Iaione, supra note 30, at 288.

^{42.} See id

^{43.} CHENG, *supra* note 28, at 357; *see generally* Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, *opened for signature* Dec. 18, 1979, 18 U.S.T. 2410, 1363 U.N.T.S. 3 [hereinafter Moon Agreement].

^{44.} CARL Q. CHRISTOL, SPACE LAW: PAST, PRESENT, AND FUTURE 382 (1991).

^{45.} G.A. Res. 2749 (XXV), Declaration of Principles Governing the Sea-Bed and the Ocean Floor, and the Subsoil Thereof, beyond the Limits of National Jurisdiction (Dec. 17, 1970).

^{46.} United Nations Convention on the Law of the Sea, *opened for signature* Dec. 10, 1982, 1833 U.N.T.S. 397, art. 136 [hereinafter Convention on the Law of the Sea].

^{47.} Id. at art. 87.

Agreement" and nowhere else. 48 In general, the concept "lacks a precise definition" but "basically wishes to convey the idea that management, exploitation and distribution of the natural resources of the area in question are matters to be decided upon by the international community and are not to be left to the initiative and discretion of individual States and their nationals."49

The United States has not signed the Moon Agreement and rejects the notion that outer space resources are the common heritage of mankind, a position clearly reiterated in Executive Order 13914.⁵⁰ The last of the five international space treaties to have been negotiated in the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS), the Moon Agreement is regarded as a failed treaty with only 18 nations having signed on, none of which is China, Russia, or the United States, the three most prominent space-faring States.⁵¹ The 1967 Outer Space Treaty, by contrast, has over 100 States Parties.⁵²

Context is essential for discerning the distinction between the constraining concept and the enabling concept. By themselves, "global commons" or "commons" do not necessarily convey one concept or the other. Describing a resource as a "global commons" in an economic context implies a focus on an open access resource and the consumption of that resource; it suggests a resource allocation problem in need of a solution and inevitably invites questions about ownership. In contrast, referring to a global commons in a military or geopolitical context implies a focus on the *use* of an open access domain and, when used accurately, the lack of ownership is a settled question. Indeed, the distinction between a focus on a thing (*res*) itself and a focus on the right to use and explore a domain is among the reasons the term "*res communis*" is not interchangeable with "global commons" when used in a military or geopolitical sense.⁵³

^{48.} G.A. Res. 2749, *supra* note 45, at art. 11. *See* Carl Q. Christol, *The Moon Treaty and the Allocation of Resources*, 22 ANNALS OF AIR & SPACE L. 31, 38 (1997) ("[S]hared considerations ... necessarily link[] the ocean's common heritage with that of the Moon and other celestial bodies.").

^{49.} CHENG, supra note 28, at 386.

^{50.} See Exec. Order No. 13941, supra note 1.

^{51.} VISITED STATUS OF INTERNATIONAL AGREEMENTS RELATING TO ACTIVITIES IN OUTER SPACE, UNITED NATIONS OFFICE FOR OUTER SPACE AFFAIRS, https://perma.cc/8VA5-4UW8 (last July 11, 2020).

^{52.} Id.

^{53.} See Henry R. Hertzfeld, Brian Weeden, & Christopher D. Johnson, How Simple Terms Mislead Us: The Pitfalls of Thinking about Outer Space as a Global Commons 7 n.24 (2015) (unpublished paper, No. IAC-15 - E7.5.2 x 29369, presented at International Astronautical Conference), https://perma.cc/ 7ENZ-WFJG (observing the subtle distinction between concern over a res (a thing) itself and the use of a thing). Res communis is a term that "originates from Roman Law and usually refers to objects or things that are available to all but are not able to be owned by any State or person." Steven Freeland & Ram Jakhu, Article II, in 1 COLOGNE COMMENTARY ON SPACE LAW, OUTER SPACE TREATY 44, 46 n. 10 (Stephen Hobe et al, eds., 2009). Res communis is sometimes used to describe the high seas and outer space, though the implications of the label are fraught with ambiguity and contribute to confusion. See D. P. O'CONNELL, II THE INTERNATIONAL LAW OF THE SEA792 (I. A. Shearer ed., 1st ed. 1988).

II. EO 13914's Concern About "Global Commons" as a Constraint

EO 13914 rejects outer space as a global commons without regard to how the term is defined, but its ire is squarely directed at the use of "global commons" as a constraining concept. It takes this position primarily because the United States does not interpret the Outer Space Treaty as imposing the constraints commonly associated with "global commons" when used in an economic context.

A. EO 13914 Targets "Global Commons" as a Constraining Concept

EO 13914 is one of a series of recent steps the United States has taken to encourage the commercial use and recovery of space resources. In 2015, President Obama signed the U.S. Commercial Space Launch Competitiveness Act, Title IV of which provides that U.S. commercial companies may assert private ownership rights in resources recovered from space.⁵⁴ Specifically, it states:

A United States citizen engaged in commercial recovery of an asteroid resource or a space resource under this chapter shall be entitled to any asteroid resource or space resource obtained, including to possess, own, transport, use, and sell the asteroid resource or space resource obtained in accordance with applicable law, including the international obligations of the United States.⁵⁵

The Commercial Space Launch Competitiveness Act and similar domestic legislation from other countries like Luxembourg sparked an increase in debate within COPUOS over space resources. In some instances, the debate included appeals to outer space's status as a global commons. For example, a presentation to the COPUOS Legal Subcommittee in 2017 concluded, "[i]t is the basic decision of the Outer Space Treaty that ... outer space and celestial bodies, including resources thereof, are global commons *under the sole jurisdiction* of the international community," the exploitation of which requires "interest balancing" (emphasis original). Here, "global commons" is not used to describe the enabling concept; rather, it is essentially used to mean the opposite of a domain not under the jurisdiction of any state. Whether or not intentional, interpretations such as this perpetuate an association between "global commons" and communal property – this, again, is why the term is problematic to use in any context with regard to any domain. At the same Legal Subcommittee session, the U.S.

^{54.} U.S. Commercial Space Launch Competitiveness Act, Pub. L. No. 114-90, §§ 401-403, 129 Stat. 703 (2015) [hereinafter 2015 Competitiveness Act].

^{55.} Id. § 402.

^{56.} L'espace See CODE CIVIL Loi du 20 Juillet 2017 sur L'exploration et L'utilisation des Ressources de , art. I (Lux.), https://perma.cc/SP8R-Y3N5 (stating "Les ressources de l'espace sont susceptibles d'appropriation.").

^{57.} Philip De Man & Stephen Hobe, *The National Appropriation of Outer Space and its Resources* (2017) (Presentation at 2017 UN COPUOS Legal Subcommittee meeting), https://perma.cc/L26H-K5PO.

representative commented that such conceptions of "global commons" are not rooted in the Outer Space Treaty.⁵⁸

EO 13914 has a title that makes clear the focus: Encouraging International Support for the Recovery and Use of Space Resources.⁵⁹ Much of the text focuses on repudiating the Moon Agreement, noting the United States has not signed the Moon Agreement and does not consider it "to be an effective or necessary instrument to guide nation states regarding the promotion of commercial participation in the long-term exploration, scientific discovery, and use of the Moon, Mars, or other celestial bodies."⁶⁰ Instead, it says, the United States will seek to negotiate non-binding arrangements with foreign states regarding safe and sustainable operations for the public and private recovery of space resources.⁶¹

These arrangements with like-minded partners have now come in the form of the Artemis Accords, a proposal National Aeronautics and Space Administration (NASA) introduced weeks after EO 13914 was issued.⁶² The Artemis Accords establish a multilateral international partnership with space agencies that join NASA in the Artemis program to achieve a sustainable presence on the moon and a human mission to Mars. This partnership will be governed by a common set of principles governing the civil exploration and use of outer space to include the use of space resources. On the heels of the U.S. Commercial Space Launch Competitiveness Act and EO 13914, the Artemis Accords will "reinforce that space resource extraction and utilization can and will be conducted under the auspices of the Outer Space Treaty."63 Within months of the proposal's announcement, seven nations (Australia, Canada, Italy, Japan, Luxembourg, the United Arab Emirates, and the United Kingdom) have signed up to the non-legally binding Artemis Accords, affirming "that the extraction of space resources does not inherently constitute national appropriation under Article II of the Outer Space Treaty."64

The internal structure of EO 13914 provides additional evidence of its focus on the constraining concept of global commons. The rejection of outer space as a global commons is presented in a section that reads:

Americans should have the right to engage in commercial exploration, recovery, and use of resources in outer space, consistent with applicable law. Outer space is a legally and physically unique domain of human activity, and the

^{58.} See Dr. Scott Pace, Executive Secretary, Remarks at Galloway Symposium on Critical Issues in Space Law (Dec. 13, 2017), https://perma.cc/6Z39-NWKK (citing remarks from the United States' statement at the 2017 COPUOS Legal Subcommittee) [hereinafter Dr. Pace, Galloway Remarks].

^{59.} Exec. Order No. 13941, supra note 1.

^{60.} Id.

^{61.} Id.

^{62.} Artemis Accords, NASA.GOV, https://perma.cc/PT2E-QR3C.

^{63.} *Id*.

^{64.} NAT'L AERONAUTICS & SPACE ADMIN. (NASA), PRINCIPLES FOR COOPERATION IN THE CIVIL EXPLORATION AND USE OF THE MOON, MARS, COMETS, AND ASTEROIDS FOR PEACEFUL PURPOSES, THE ARTEMIS ACCORDS SEC. 10, (2020), https://perma.cc/Y4JJ-A2GX.

United States does not view it as a global commons. Accordingly, it shall be the policy of the United States to encourage international support for the public and private recovery and use of resources in outer space, consistent with applicable law.⁶⁵

The middle sentence that rejects the status of outer space as a global commons is preceded and followed by sentences addressing space resource recovery rights. Furthermore, "global commons" and resource recovery rights are framed here as opposing ideas. This structure makes clear "global commons" is being used in the economic sense.

Finally, Dr. Scott Pace, the former Executive Secretary of the National Space Council and a key driver behind EO 13914, has previously indicated that he regards "global commons" as a label for the constraining concept. He has explained the need for "certain types of rights and obligations typically associated with exclusive use and private property" in order to encourage private sector investments in space. Invoking the aforementioned statement of the United States at the 2017 Legal Subcommittee session, he reiterated that "outer space is not a 'global commons,' not the 'common heritage of mankind,' not 'res communis,' nor is it a public good" and that reference to any of these topics "is more distracting than it is helpful." Dr. Pace added, "[t]o unlock the promise of space ... requires that we not constrain ourselves with legal constructs that do not apply to space."

As Dr. Pace alludes in his remarks, the reason EO 13914 rejects outer space as a global commons is twofold: first, the concept inhibits the objective of achieving legitimacy in claims of ownership over space resources; and second, those constraints are grounded neither in the physical realities of the space domain nor in applicable international space law as generally interpreted by the United States.

B. How "Global Commons" as a Constraining Concept is Ill-Suited to Outer Space

The constraining concept can have two distinct meanings and both face difficulty when applied to outer space. The observation in EO 13914 that outer space is a "physically unique domain" alludes to the meaning of commons as a category of resources. ⁶⁹ This uniqueness is apparent in its immense scale and the sheer variety of physical attributes. Hence, to say that outer space is a global commons, meaning a commons in the sense of an open access economic resource, "would be a sweeping generalization and . . . utterly meaningless." Outer space is extraordinarily vast with myriad resources and benefits. As such, outer space defies any attempt to generalize the entirety as a singular common resource. Void space,

^{65.} Exec. Order No. 13941, supra note 1.

^{66.} Dr. Pace, Galloway Remarks, supra note 58.

^{67.} Id.

^{68.} *Id*.

^{69.} Exec. Order No. 13941, supra note 1.

^{70.} Tepper, supra note 34, at 9.

galaxies, planets, stars, moons, asteroids, different Earth orbits, moon orbits, Lagrange points, the various benefits that all these may provide – these cannot be lumped together and thought of as a single common resource, let alone a common resource that ought to be governed by the inhabitants of planet Earth. In this sense, thinking of space as a global commons would indeed be more distracting than helpful. Moreover, the physical uniqueness of outer space is such that any conclusions about governance based on analogies to other domains should be viewed with skepticism.⁷¹

Nevertheless, although it may be nonsensical to think of outer space as a singular resource, this does not necessarily preclude particular resources in outer space from being considered a commons. A recently completed report by the National Academy of Public Administration (NAPA) takes this view. Commissioned by Congress to evaluate which federal agency should take on the space traffic management (STM) mission, the NAPA report observes it may be "useful to think of some regions of orbital space as a common pool resource (CPR)" because "one actor's use of the shared resource *does* subtract from what is available to others" (emphasis original).⁷² It goes on to say "the heavily used regions of low Earth orbit (LEO) and geosynchronous orbit (GEO) are both rivalrous and congestible and can be thought of as CPRs."⁷³ The NAPA report categorizes certain resources in space without attributing a particular legal construct for owning those resources.

With regard to ownership under international space law, the legality of the recovery and of resources in outer space, commercial or otherwise, is fundamentally a question of whether such recovery constitutes a permissible use under Article I of the Outer Space Treaty or, instead, a prohibited appropriation under Article II.

Article I reads:

The exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.

Outer Space, including the Moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies.

^{71.} See Elizabeth Mendenhall, Treating Outer Space Like a Place: A Case for Rejecting Other Domain Analogies, 16 ASTROPOLITICS 97, 98 (2018).

^{72.} NATIONAL ACADEMY OF PUBLIC ADMINISTRATION, SPACE TRAFFIC MANAGEMENT 15 (Aug. 2020).

^{73.} Id. at 15-16.

There shall be freedom of scientific investigation in outer space, including the moon and other celestial bodies, and States shall facilitate and encourage international co-operation in such investigation.⁷⁴

All States, including the United States, are free to use outer space. However, this freedom does not include the ability of States or commercial entities to appropriate outer space.⁷⁵ Article II reads:

Outer space, including the moon and celestial bodies, is not subject to national appropriation by claim of sovereignty by means of use or occupation or by any other means.⁷⁶

This non-appropriation principle prohibits claims to real property (territory) on the Moon or celestial bodies, whether by private entities or States.⁷⁷ As Professor Cheng explains, "[t]he concept of non-appropriation embodied in Article II is the same as that which has been traditionally applied to the high seas. It simply means that as among contracting States, none will be entitled to exercise *territorial* jurisdiction".⁷⁸ "However, separate from the problem of appropriating parts of outer space and celestial bodies," Cheng observes, "is that of appropriating resources of outer space and celestial bodies." This distinction is key. Space resources are not necessarily regarded as equivalent to territory when it comes to interpreting the non-appropriation principle.

To repeat, the question of whether international law permits the recovery and exploitation of resources in outer space, commercial or otherwise, is fundamentally a question of whether such recovery and exploitation constitute a permissible use under Article I or, instead, a prohibited appropriation under Article II. With regard to the resources themselves, the United States has long held the

^{74.} Outer Space Treaty, supra note 26, art. I.

^{75.} The obligations contained within the Outer Space Treaty apply to signatory States and, indirectly, to their commercial actors by virtue of Article VI, which holds that "States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty." See Outer Space Treaty, supra note 24, at art. VI; see also John S. Goehring, Properly Speaking the United States Does Have an International Obligation to Authorize and Supervise Commercial Space Activity, 78 AF. L. REV. 101, 119 (2018) (addressing why international obligations under the Outer Space Treaty indirectly apply to commercial operators).

^{76.} Outer Space Treaty, *supra* note 26, art. II.

^{77.} See, e.g., CHENG, supra note 28, at 233 ("[I]nasmuch as there is to be no territorial jurisdiction, there can be no private ownership of parts of outer space or celestial bodies, which presupposes the existence of a territorial sovereign itself competent to confer titles of ownership."); but see Dr. Scott Pace, Merchant and Guardian Challenges in the Exercise of Spacepower, in TOWARD A THEORY OF SPACEPOWER 269 (Charles D. Lutes & Peter Hays eds., 2011) ("At a minimum, real property rights in space are legally ambiguous and the United States need not accept flat statements that the Outer Space Treaty per se forbids such rights.").

^{78.} CHENG, supra note 28, at 230 (emphasis in original).

^{79.} Id. at 233.

position that Article II prohibits ownership over space resources "in place" but does not prohibit ownership by States or private entities over resources that have been removed from their place on or below the surface of the moon or celestial bodies, and that such removal is a form of use permitted under Article I.⁸⁰ More recently, the 2015 Commercial Space Launch Competitiveness Act implicitly reaffirms this interpretation and implements it as a matter of domestic law.⁸¹ The Artemis Accords further reinforce this position. Hence, the United States does not interpret the Outer Space Treaty as supporting the notion that outer space is a global commons when the term is used a constraining concept.

The separate question of whether the Outer Space Treaty permits the semi-permanent occupation of a site on the moon for resource extraction remains unresolved. 82 This issue is also best framed as a question of whether the occupation of a territory would be considered a use consistent with Article I or, in the alternative, an appropriation of the site prohibited under Article II. It could be argued that stations on the Moon cannot be installed in a manner which impede free access by other States to all areas.83 Alternatively, it could be argued that the problem is analogous to the norms that have developed with regard to the use of geosynchronous orbital slots. Although use of geosynchronous orbital slots is exclusive, State practice has shown that exclusive use is not regarded as an unlawful appropriation. These norms have arisen in part due to the technological requirement that orbital slots in geostationary orbit must be exclusive if satellites are to operate without interference.⁸⁴ It bears noting, however, that an international organization, the International Telecommunications Union (ITU), is responsible for reconciling these technological requirements with the legal principles in the Outer Space Treaty.85 Importantly, also, the infrastructure and equipment on the moon is distinct from the site it may occupy. Article VIII of the Outer Space Treaty makes clear that States retain jurisdiction and control of their space objects, which would include all equipment and infrastructure. 86 Both Article II and Article VIII are informed by Article XII which, as previously noted, expressly contemplates occupation of territory on the Moon under certain circumstances while also affording the right of free access to such installations on the basis of reciprocity.87

^{80.} Brian J. Egan, Legal Advisor, U.S. Dep't. of State, Remarks at the Galloway Symposium on Critical Issues in Space Law (Dec. 7, 2016), https://perma.cc/NNW4-FHP5 (endorsing State Dep't. legal position from 1979).

^{81.} *Id.*; 2015 Competitiveness Act, *supra* note 54, §§ 401-03.

^{82.} See, e.g., CHENG, supra note 28, at 234, 401.

^{83.} See Hamilton DeSaussure, The Freedoms of Outer Space and Their Maritime Antecedents, in SPACE LAW: DEVELOPMENT AND SCOPE 11 (Nandasiri Jasentuliyana ed., 1992).

^{84.} See Lubos Perek, The Scientific and Technological Basis of Law, in Space Law: Development and Scope 187 (Nandasiri Jasentuliyana ed., 1992).

^{85.} *Id*.

^{86.} Outer Space Treaty, supra note 26, art. VIII.

^{87.} Id. at art. XII.

Hence, we have seen how the enabling concept finds support in the Outer Space Treaty while the constraining concept's legal notions of common ownership do not – at least, not according to the legitimate and longstanding interpretation of the United States. The question of whether outer space is a global commons, therefore, demands a somewhat complicated answer. EO 13914, however, does not account for this complexity, nor do some of the justifications offered in its defense. For instance, when asked why EO 13914 refutes that space is a global commons, Dr. Pace explained, "[s]ome view all shared domains beyond national sovereign jurisdiction and control as constituting a 'global commons . . . [h]owever, this does not have a firm foundation in international space law, given that the concept of a 'global commons' is not part of the Outer Space Treaty." This rationale, in which the premise assumes the truth of the conclusion rather than supports the conclusion, does not account for the various legitimate meanings of global commons.

Similarly, former White House Space Policy Director Peter Marquez has asserted that EO 13914 rejects the term "global commons" because "the DoD has errantly described space as a global commons despite legal guidance given by the White House and the State Department." Mr. Marquez further explains:

Previous Administrations have also rejected the concept of space as a global commons ... then a few years ago the Department of Defense started stating that space was a global commons ... the EO clearly states the USG [United States Government] position on this matter and hopefully will end the confusion about the USG's true position on the matter ... The world made its decision on these matters when only 18 nations decided to sign the Moon Agreement.⁹⁰

This rationale appears to equate the rejection of the Moon Agreement with the rejection of the notion of outer space as a global commons. This is not necessarily accurate, however, unless one associates the meaning of "global commons" with the concept of the common heritage of mankind, because that is what was rejected along with the Moon Agreement.

III. MOVING ON WITHOUT THE GLOBAL COMMONS

EO 13914 will shape the discourse not only on the recovery of space resources, but also on the application of the term "global commons." As part of the intended audience who must now navigate the new policy, domestic practitioners can draw several lessons going forward.

^{88.} Interview with Dr. Scott Pace, Deputy Assistant to the President & Exec. Sec'y, U.S. Nat'l Space Council, https://perma.cc/YXG2-CEFJ.

^{89.} Interview by SpaceWatch.Global with Peter Marquez, Partner, Andart Global, #SpaceWatchGL Perspective On US Space Resources Executive Order: Peter Marquez On The Need For The EO, https://perma.cc/A463-EDHK.

^{90.} Id.

First, the EO impacts the label "global commons" not just for outer space, but for every domain, because it essentially adopts the constraining concept as the only possible meaning of "global commons." After all, if outer space is not viewed as a global commons, by what logic can the high seas continue to be called a global commons? Under UNCLOS Article 87 (*Freedom of the high seas*), it is declared that "the high seas are open to all States." This principle dates back to the time of Grotius and is recognized by the United States as customary international law. How is this freedom materially distinguishable from the freedom to use and explore outer space, as codified in the Outer Space Treaty? In lieu of a satisfactory answer, the EO calls into question whether "global commons" should be used to describe any domain.

Indeed, the EO is only the latest indication that "global commons" has been abandoned within the USG as a label for the enabling concept. The current National Security Strategy (NSS) and National Defense Strategy (NDS) suggest this transition is already underway. The NSS identifies the rules that keep "open and free" the "common domains" of "land and sea, the Arctic, outer space, and the digital realm" as "vital to U.S. prosperity and security." The NDS calls for "[e]nsuring common domains remain free and open." Hence, both strategies embrace the enabling concept, but apply a different label to it: common domains. Adopting this alternate label has the advantage of reducing the proliferation of a term - "global commons" - that has multiple meanings and is therefore inherently confusing and susceptible to misunderstandings. However, the reason for adopting a different label is not widely known or understood. Just as policy makers should endeavor to convey that "common domains" is preferable to "global commons" for all domains, practitioners should understand that the reason is because "common domains" is somewhat less likely to be misconstrued, not because "global commons" is necessarily inaccurate.

The question of accuracy raises a second lesson: discourse about the global commons, particularly with regard to the space domain, is not as simple as the EO may suggest. "Global commons" is not some talismanic term that demands every utterance invoke Elinor Ostrom, even though the EO may treat it as such. Instead, it has multiple legitimate meanings, and they can apply to outer space in different ways. Outer space is a global commons in the sense of being a domain beyond national jurisdiction and with free and open access, but it is not a global commons in the sense of being commonly owned such that nations cannot assert private property interests in space resources. Both of these interpretations find support in the Outer Space Treaty (although the latter interpretation remains a

^{91.} Convention on the Law of the Sea, *supra* note 46, at art. 87.

^{92.} See generally Hugo Grotius, Mare Liberum (David Armitage ed., Richard Hakluyt trans., 2004); see also John Norton Moore, Navigational Freedom: The Most Critical Common Heritage, 93 INT'L L. Stud. 251, 260 (2017) ("[T]he United States accepts the normative provisions of the Convention as customary international law").

^{93.} THE WHITE HOUSE, NATIONAL SECURITY STRATEGY 40 (2017).

^{94.} DEP'T OF DEFENSE, NATIONAL DEFENSE STRATEGY SUMMARY 4 (2018).

point of contention for some). It is also not a global commons in the sense of being a singular type of open access physical resource, yet particular resources within outer space, such as LEO, may reasonably be regarded as such. Accordingly, accuracy depends on the intended meaning. These ideas should be discussed with language that is precise and used consistently.

To complicate matters further, the question of whether the Outer Space Treaty establishes collective ownership over space resources is separate from the question of whether some regime of collective management *should* be put into place. The EO does not address this normative question directly, but rejecting outer space as a global commons implies the answer is no.

Related to this concern about language is a final lesson: the term "global commons" will remain a distraction, and it is best dealt with by focusing on the underlying concept, not the label. The EO sought to remove "global commons" from discourse about outer space. However, it is unlikely to succeed and may have inadvertently had the opposite effect, especially upon international audiences. For instance, the EO prompted several Canadian experts to write an open letter to the Minister of Foreign Affairs of Canada in which they assert:

There has, however, been a long-standing consensus among states that the recovery and use of space resources should be governed by an international agreement, as has been done in other "areas beyond national jurisdiction" where resources are recognized as constituting "global commons," for example, the deep seabed, international airspace, and the radio frequency spectrum ... The current US Administration takes the unprecedented position that outer space is not a global commons. It favours a unilateral approach to governing the recovery and use of space resources.⁹⁵

This statement touches upon both concepts and all three meanings of "global commons" described herein. It mixes elements of the enabling concept ("areas beyond national jurisdiction") with elements of the constraining concept (the deep seabed, which under UNCLOS is the common heritage of mankind) and also suggests all space resources be treated as a singular resource of the type that ought to be collectively managed. It represents how the term "global commons" will remain a lightning rod, notwithstanding the EO's attempt to move on from it. The debate over space as a global commons will continue to be raised, along with the misunderstandings that go along with it.

Generally, rather than engage in further discourse by doubling down on the assertion that outer space is not a global commons – or, for opponents of the EO, insisting that it is – productive discourse going forward should focus on the underlying concepts at issue. With regard to outer space resources, the question of whether outer space is a global commons does not get to the heart of the matter.

^{95.} Open letter to Honourable Francois-Phillippe Champagne, Minister of Foreign Affairs, Canada, on US Executive Order on Recovery and Use of Space Resources (April 20, 2020), https://perma.cc/DLU2-ARLQ.

The relevant questions, rather, are what does the law allow – that is, whether the recovery and use of space resources is authorized under Article I or prohibited under Article II – and what should the law or policy be going forward.

CONCLUSION

To many, including those who understand that the Outer Space Treaty establishes outer space as a domain which no state may subject to its sovereignty, and in which freedom of use and access in accordance with international law is guaranteed by treaty, the notion that the United States does not view outer space as a global commons may seem perplexing. This is because "global commons" refers to two different concepts: an enabling concept and a constraining concept. Whether or not outer space is a global commons depends on which of the concepts is meant. While the former is a legitimate, longstanding, and legally sound concept as applied to outer space, the latter has come to dominate the public discourse surrounding space resource recovery and use. Indeed, the position of the USG is now, effectively, that "global commons" is synonymous with the constraining concept. As a constraining concept, the meaning of "global commons" generally refers to various notions of resources as an economic good, and how those resources are owned, managed, or allocated. It is applied in economic contexts and implies constraints and obligations, for better or worse. Also, it is often used to suggest common ownership over space resources, which is precisely the opposite of how "global commons" is used as an enabling concept in military or geopolitical contexts. The United States does not view these constraining views as having a basis in the physical reality of outer space or in applicable international space law. Though many may dispute these positions, what seems beyond dispute is that the debate over space resource recovery should be grounded in the applicable international law. The label "global commons" – a label that is not found in the Outer Space Treaty, has no authoritative definition, and can be used in different ways to mean different things – has become an obstacle to productive discourse. Going forward, practitioners would do well to recognize the impact the new policy has on other domains and adapt and educate accordingly, to appreciate the complexity of the matter and use language with precision and consistency, and to always focus on the underlying questions of law and policy rather than labels.