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FICTIONS OF THE FINAL FRONTIER: WHY THE UNITED STATES SPACE ACT OF 2015 IS ILLEGAL

ABSTRACT

In 2015, the United States passed The Spurring Private Aerospace Competitiveness and Entrepreneurship Act of 2015 (the “SPACE Act of 2015”), a domestic law creating private celestial property rights for any US citizen who can appropriate an outer space resource. This creation of a private property interest stands in stark opposition to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space (the “Outer Space Treaty”), which entered into force in 1967. The Outer Space Treaty is accepted by all space-faring nations, and it contains a non-appropriation doctrine in Article II that bars states from claiming territorial ownership of celestial bodies and resources. There is a split among academics on how to interpret the Article II prohibition. Specifically, many are not sure whether the appropriation extends only to sovereigns (by a narrow interpretation), or if it covers private entities as well (by a broad interpretation).

This Comment argues that a broad interpretation of the Outer Space Treaty is proper, and that the SPACE Act of 2015 violates the Treaty’s bar on appropriation. Taking into account methods of treaty interpretation and examining the historical context at the time the Treaty was drafted supports a broad interpretation. This Comment proposes that there is indeed much to be desired by allowing and supporting celestial development, but that a change in the international regulatory regime is necessary to allow the SPACE Act of 2015 to operate without violating the Outer Space Treaty.

INTRODUCTION

A man in California has a vision to achieve what is out of reach for even the National Aeronautics and Space Administration (NASA). His idea seems crazy, but he says he can pull it off in less than six years.¹ The vision: to send humans to Mars.²

Elon Musk presented a concrete business plan for sending humans to Mars during a conference on September 22, 2017.³ Musk's company, SpaceX, is a private American aerospace organization that is the market leader in the United States space travel industry, and one of the most prominent private aerospace travel companies in the world.⁴ The dreams of Mr. Musk are not all that out of reach, given SpaceX's accomplishments and milestones. SpaceX is the first private company successfully to launch cargo rockets to the International Space Station,⁵ but Musk is not alone in these endeavors.

Another American company, Moon Express, is working to launch the first private lunar mission to the Moon with hopes, eventually, to mine it.⁶ Companies like SpaceX and Moon Express are not only proposing big ideas, there is big money behind them and they fully intend to put it to work.⁷ SpaceX is valued at around \$21 billion,⁸ and Moon Express has raised over \$45 million,⁹ demonstrating the seriousness and commitment that private companies are willing to put forth to advance human interaction with outer space to a new level.

¹ SPACEX, <http://www.spacex.com/mars> (last visited Feb. 2, 2018).

² *Id.*

³ Adam Baidawi & Kenneth Chang, *Musk's Mars Vision: A One-Size-Fits-All Rocket. A Very Big One*, N.Y. TIMES, Sept. 30, 2017, at B3, <https://www.nytimes.com/2017/09/28/science/elon-musk-mars.html>.

⁴ Jay Bennett, *One Chart Shows How Much SpaceX Has Come to Dominate Rocket Launches*, POPULAR MECHANICS (July 13, 2017), <https://www.popularmechanics.com/space/rockets/a27290/one-chart-spacex-dominate-rocket-launches/>.

⁵ Kenneth Chang, *First Private Craft Docks With Space Station*, N.Y. TIMES, May 26, 2012, at A12, <https://www.nytimes.com/2012/05/26/science/elon-musk-mars.html>.

⁶ *Fact Sheet Moon Express Payload Review Determination*, FED. AVIATION ADMIN., https://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=20595; MOON EXPRESS, <http://www.moonexpress.com/expeditions/> (last visited October 5, 2018).

⁷ Baidawi & Chang, *supra* note 3; FED. AVIATION ADMIN., *supra* note 6.

⁸ Katie Benner & Kenneth Chang, *SpaceX is Now One of the World's Most Valuable Privately Held Companies*, N.Y. TIMES, July 27, 2017, <https://www.nytimes.com/2017/07/27/technology/spacex-is-now-one-of-the-worlds-most-valuable-privately-held-companies.html>.

⁹ Lori Loannou, *Billionaire Closer to Mining the Moon for Trillions of Dollars in Riches*, CNBC (Jan. 31, 2017, 8:13 AM), <https://www.cnbc.com/2017/01/31/billionaire-closer-to-mining-moon-for-trillions-of-dollars-in-riches.html>.

But what if they cannot? What if it is all for nothing? What if the very dreams that these billions of dollars stand for are completely illegal? A domestic U.S. law, The Spurring Private Aerospace Competitiveness and Entrepreneurship Act of 2015 (SPACE Act of 2015), creates private celestial property rights for any U.S. citizen who can appropriate an outer space resource.¹⁰ This creation of a property right contradicts the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space (Outer Space Treaty), which prohibits appropriation of celestial bodies and resources,¹¹ creating dissonance between domestic U.S. law and an international treaty to which the United States is a party.

On November 19, 2015, President Obama signed into law the SPACE Act of 2015.¹² Aimed at supporting outer space endeavors like those of SpaceX and Moon Express, the Act provides legal support for private ownership of outer space resources.¹³ Among other things, the Act provides that United States citizens have the right to appropriate property in outer space for commercial purposes, and to do so “free from harmful interference.”¹⁴

Internationally, the Outer Space Treaty entered into force in 1967 and has wide acceptance by all space-faring states,¹⁵ with a total of 107 signatories.¹⁶ The Treaty is widely viewed as the principal international legal instrument governing outer space,¹⁷ and it entered into force on the heels of the 1957 Soviet Union launch of Sputnik-1, cognizant of the Cold War “Space Race” between the United States and the Soviet Union.¹⁸ Article II of the Treaty contains its

¹⁰ See H.R. 2262, 114th Cong. (2015).

¹¹ See 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, 18 U.S.T. 2410, 610 U.N.T.S. 205 (entered into force Oct. 10, 1967) [hereinafter Outer Space Treaty].

¹² H.R. 2262, 114th Cong. (2015).

¹³ See *id.*

¹⁴ *Id.*

¹⁵ Outer Space Treaty, *supra* note 11.

¹⁶ United Nations Office for Disarmament Affairs, 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., http://disarmament.un.org/treaties/t/outer_space (last visited Oct. 26, 2017).

¹⁷ See Brian Wessel, *The Rule of Law in Outer Space: The Effects of Treaties and Nonbinding Agreements on International Space Law*, 35 HASTINGS INT'L & COMP. L. REV. 289, 292 (2012); Leslie Tennen, *Symposium: The Promise and Perils of an International Law of Property Enterprise Rights and the Legal Regime for Exploitation of Outer Space Resources*, 47 UNIV. PAC. L. REV. 281, 282 (2016).

¹⁸ See Matthew J. Kleiman, *Space Law 101: An Introduction to Space Law*, A.B.A., https://www.americanbar.org/groups/young_lawyers/publications/the_101_201_practice_series/space_law_101_an_introduction_to_space_law.html (last visited Sept. 24, 2017); FRANS VON DER DUNK, *International Space Law*, in HANDBOOK OF SPACE LAW 29, 35 (Frans von der Dunk ed., 2015).

non-appropriation doctrine concerning the use of celestial resources.¹⁹ The specific language in Article II refers to “national appropriation by a claim of sovereignty,”²⁰ and many scholars accept that the Article exists to bar nations from claiming territorial ownership of celestial bodies and resources.²¹ It is without question that drafters of the Outer Space Treaty only contemplated state actor interest in, and ability to actually fund and develop, space-faring technologies.

The state of international culture and technology is very different today than it was during the emergence of the Outer Space Treaty fifty years ago.²² Outer space is no longer the domain of exclusively state actors; a shift to private-sector development of space is underway.²³ It remains unsettled whether the non-appropriation doctrine in Article II of the Outer Space Treaty covers: (1) all entities, thus stunting the dreams of private aerospace companies before they even start, or (2) only state actors, allowing for wide private-sector development in outer space.

In recent years, academics have debated how to interpret Article II of the Outer Space Treaty. The broad interpretation argues that Article II governs all actors, private and state, thus prohibiting all forms of appropriation in outer space.²⁴ Scholars advocating for a narrow interpretation of the Outer Space Treaty argue that because Article II is silent as to private actors and only addresses sovereign actors, there is no prohibition of private appropriation of outer space resources.²⁵ However, an examination through the lens of the plain language of the text, taking into account the historical context at the time the treaty was drafted, the argument for a narrow interpretation raises further conflict. Sovereign recognition of ownership is essential to private ownership of something in outer space.²⁶ Private ownership of something cannot exist without

¹⁹ Outer Space Treaty, *supra* note 11.

²⁰ *Id.*

²¹ See Bryon Brittingham, *Does the World Really Need New Space Law?*, 12 OR. REV. INT’L L. 31, 37 (2010); Sarah Coffey, *Establishing a Legal Framework for Property Rights to Natural Resources in Outer Space*, 41 CASE W. RESERVE J. INT’L L. 119, 125-26 (2009); John Myers, Comment, *Extraterrestrial Property Rights: Utilizing the Resources of the Final Frontier*, 18 SAN DIEGO INT’L L.J. 77, 94 (2016); Alexander William Salter, *Ordering the Cosmos: Private Law and Celestial Property Rights*, 82 J. AIR L. & COM. 311, 312 (2017).

²² See Kleiman, *supra* note 18.

²³ See *id.*

²⁴ See FABIO TRONCHETTI, *Legal Aspects of Space Resource Utilization*, in HANDBOOK OF SPACE LAW 769, 779–81 (Frans von der Dunk ed., 2015); Jijo George Cherian & Job Abraham, *Concept of Private Property in Space: An Analysis*, 2 J. INT’L COMM. L. & TECH. 211, 213 (2007).

²⁵ Alan Wasser & Douglas Jobs, *Space Settlements, Property Rights, and International Law: Could a Lunar Settlement Claim the Lunar Real Estate It Needs to Survive*, 73 J. AIR L. & COM. 37, 44–45 (2008).

²⁶ Felix S. Cohen, *Dialogue on Private Property*, 9 RUTGERS L. REV. 357, 371 (1954).

first being granted by a sovereign,²⁷ therefore a narrow interpretation of Article II fails because it rests on the creation of an illegal property right over celestial resources by private entities.

This Comment argues for a broad interpretation of the Outer Space Treaty and urges a change in the international regulatory regime allowing the SPACE Act of 2015 to operate without violating international treaty law. Recognizing that property ownership flows from sovereign recognition and that private ownership of something requires a state to reinforce this recognition, the Treaty, through its language in Article II, should apply to all actors, state and private. A proper textual interpretation of the treaty shows that the drafters intended for the non-appropriation doctrine to cover all entities: private and state. Methods of treaty interpretation, its *travaux préparatoires*, and a historical analysis of global culture at the time of the treaty's drafting and ratification supports this stance. As written, the Outer Space Treaty prohibits both state and private exploitation and appropriation of outer space resources. By allowing private appropriation in outer space, the United States, through the SPACE Act of 2015, is committing a prohibited act of sovereignty within the scope of Article II of the Treaty, thus creating a conflict that may invalidate the U.S. law.

Resolving this dissonance requires a shift in international law or recognized property regimes of private appropriation of celestial resources without violating the Outer Space Treaty. A natural extension of any discussion of outer space appropriation is a discussion of specific international property regimes analogous to outer space, including the law of the high seas and Antarctica. That discussion is beyond the scope of this Comment. Further, this Comment does not address the legal status of states that have not signed the Outer Space Treaty, or citizens of states that have not signed the Treaty.

This Comment, in Part II, outlines the history and relevant text of both the Outer Space Treaty and the SPACE Act of 2015, examining both legislative history and the global context of their drafting. Part III defines and applies the three most widely-accepted methods of treaty interpretation to the Outer Space Treaty. Part IV compares the methods of treaty interpretation and demonstrates how they support the conclusion that a broad interpretation of the Outer Space Treaty is most proper. Part V addresses how a narrow interpretation of the Treaty conflicts with its text. The final section will propose that the SPACE Act of 2015, as currently written, is invalid as against the Outer Space Treaty, and will

²⁷ *Id.*

explore potential solutions that could resolve the dissonance between the Treaty and the Act.

I. BACKGROUND

A. *History and Text of the Outer Space Treaty*

The origins of international space law are traceable to the 1957 creation of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS).²⁸ Primarily established in response to the Soviet Union's successful launch of Sputnik-1, the formation of the committee was unprecedented, as it created an entire new field of public international law: the law of outer space.²⁹ In what scholar Frans von der Dunk refers to as three phases, COPUOS developed *juris spatialis internationalis* by drafting five treaties governing the various aspects of human interaction with outer space.³⁰ Only two of those treaties, the Outer Space Treaty and the Moon Treaty, address property rights.³¹

In its first phase, the committee produced little that was legally binding.³² Of particular interest is a draft called the Principles Declaration, which is the skeleton of what became the Outer Space Treaty.³³ The second phase saw more substantial development, as the committee converted the Principles Declaration into the Outer Space Treaty, receiving wide acceptance and enjoying the signature of 107 states to date.³⁴ The third phase of COPUOS is characterized as a return to the development of international space law through non-binding resolutions, much as it did in phase one.³⁵ On January 27, 1967, the Outer Space

²⁸ NATHAN V. GOLDMAN, *AMERICAN SPACE LAW: INTERNATIONAL AND DOMESTIC* 23 (1996).

²⁹ PETER JANKOWITSCH, *The Background and History of Space Law*, in *HANDBOOK OF SPACE LAW* 1, 5 (Frans von der Dunk ed., 2015).

³⁰ *See id.* at 26; VON DER DUNK, *supra* note 18, at 37 (The other four treaties that came out of COPUOS are The Rescue Agreement, the Liability Convention, the Registration Convention, and the Moon Agreement.); JANKOWITSCH, *supra* note 29, at 12.

³¹ *See* VON DER DUNK, *supra* note 18, at 99–100 (The Moon Agreement has received wide criticism for its broad international jurisdiction over outer space, which is apparent in the fact that only seventeen states have ratified it, none of them being space-faring nations, including the United States.); United Nations Office for Disarmament Affairs, *supra* note 16; Taylor R. Dalton, *Developing the Final Frontier: Defining Private Property Rights on Celestial bodies for the Benefit of All Mankind* 11 (Cornell L. Sch. Graduate Student Papers, Paper No. 25, 2010), http://scholarship.law.cornell.edu/cgi/viewcontent.cgi?article=1041&context=lps_papers.

³² VON DER DUNK, *supra* note 18, at 38.

³³ *Id.* at 39.

³⁴ *Id.*; *see* United Nations Office for Disarmament Affairs, *supra* note 16.

³⁵ VON DER DUNK, *supra* note 18, at 41.

Treaty was opened for signature, and it has currently been ratified by over one hundred states, including all space-faring nations.³⁶

The Outer Space Treaty very clearly outlines the principles that were important to its drafters and the international community at the time of its creation. With a focus on regulating the use of outer space, it contains several important stances including a prohibition on the use of weapons of mass destruction in outer space, the requirement that celestial exploration be for the benefit of countries as “the province of all mankind,” and the requirement that states aid all astronauts and regulate jurisdiction over their space objects.³⁷

Most controversial, however, is the Article II prohibition on the appropriation of outer space. Article II concisely states: “Outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.”³⁸

Article I provides an important backdrop about equality among states and opportunity to explore upon which the drafters’ intent in Article II can best be understood:

The exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the 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. There shall be freedom of scientific investigation in outer space, including the Moon and other celestial bodies, and States shall facilitate and encourage international cooperation in such investigation.³⁹

The idea that outer space should be a province for equal use among all countries in cooperation with one another is prevalent. The drafters express this intention explicitly in Article I, and it works in the background throughout the entirety of the Treaty by creating a tone against unfair advantage among countries.

³⁶ See Outer Space Treaty, *supra* note 11; Comm. On the Peaceful Uses of Outer Space, Rep. of the Legal Subcomm. on Its Fifty-Fourth Session, U.N. Doc. A/AC.105/C.2/2015/CRP.8 (2015); United Nations Office for Disarmament Affairs, *supra* note 16.

³⁷ Outer Space Treaty, *supra* note 11.

³⁸ *Id.*

³⁹ *Id.*

Article VI echoes that tone specifically with regard to state control and responsibility for anything they do or place in outer space. The Article puts a significant “international responsibility” on states for the “national activities” they carry out in outer space.⁴⁰ It imposes that responsibility not only on states themselves, but also, by extension, to non-sovereign entities by requiring states to ensure that activities “carried on by governmental agencies or by non-governmental entities . . . are carried out in conformity with the provisions set forth in the present Treaty.”⁴¹ Therefore, the Treaty clearly, in Article VI, contemplates private actors and firmly places their activities within the jurisdiction and responsibility of the state of which they are citizens. The Article further requires sponsoring states to “authoriz[e] and [provide] continuing supervision” over the activities of non-sovereign entities in outer space.⁴² It is apparent by the early language of the Treaty that preserving outer space for peaceful, non-territorial uses—by states or private entities—is important to its drafters, and that intent has express incorporation into the text itself.

The Outer Space Treaty has been used as a basis for subsequent international agreements, perhaps the most well-known of which is the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (Moon Treaty).⁴³ The Moon Treaty built upon the language of the Outer Space Treaty by adding that “the moon shall be used . . . exclusively for peaceful purposes,” and mandates that states “shall take measures to prevent the disruption of the existing balance of [the] environment.”⁴⁴

While it does not directly adopt the principal purpose of the Outer Space Treaty, the Moon Treaty takes things a step further and asserts that celestial resources are the “common heritage of mankind,” thereby adopting an international law common heritage approach to outer space.⁴⁵ This common heritage approach to international space law rests on five tenets: (1) there is an absolute bar on both private and state appropriation of celestial resources in outer space; (2) celestial resources are for the benefit of all states and every state should manage and care for them; (3) because celestial resources are for the benefit of all states, any benefit a state attains must be shared with all other

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² *Id.*

⁴³ G.A. Res. 34/68 (Dec. 5, 1979).

⁴⁴ *Id.*

⁴⁵ *Id.*

states; (4) outer space may not be used for military purposes; and (5) outer space must be preserved by states for future generations.⁴⁶

The common heritage approach adopted by the Moon Treaty is very controversial as evinced by the fact that it has the signature of only two space-faring states.⁴⁷ Developing nations, especially those without the means or ability to explore outer space, are supportive of the Moon Treaty and its common heritage effect.⁴⁸ The largest issue with the Moon Treaty is element (3)—that celestial resources are for the benefit of all states and should be shared with all other states.⁴⁹ Although signed by relatively few states, the purpose behind the passage of the Moon Treaty and its provisions that bar property rights in outer space echo and support the same purpose of the earlier Outer Space Treaty. Through passage of the Moon Treaty, the international community once again expressed its desire for complete non-appropriation of planets and celestial resources.

B. History and Text of the SPACE Act of 2015

In the fifty years following the drafting of the Outer Space Treaty, the United States has found itself in a very different space-faring world than it did in 1967. Private American companies with big aspirations of celestial travel and exploitation have the money, the ideas, and the technology; they just need the legal backing.

The United States' response to these growing needs was by way of House Bill 1508, a proposed act that specifically addressed United States citizen exploitation and ownership of asteroid resources.⁵⁰ The proposed act was headed by the House Committee on Science, Space, and Technology with the intent to “establish a legal framework to govern property rights of resources obtained from asteroids enabling this new industry and providing clarity for future entrepreneurs.”⁵¹ Among other components, the bill would enable the President to “promote the right of United States commercial entities to explore outer space and utilize space resources, in accordance with the existing international

⁴⁶ *See id.*

⁴⁷ *See* Brittingham, *supra* note 21, at 38. (The only space-faring states that have signed the Moon Treaty are France and India). *See* Nuclear Threat Initiative, *Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (Moon Agreement)*, NTI (Oct. 26, 2011), <http://www.nti.org/learn/treaties-and-regimes/agreement-governing-activities-states-moon-and-other-celestial-bodies-moon-agreement>.

⁴⁸ *See id.* at 39.

⁴⁹ G.A. Res. 34/68 (Dec. 5, 1979).

⁵⁰ H.R. 1508, 114th Cong. § 2 (2015).

⁵¹ H.R. Rep. No. 114-153, at 3 (2015).

obligations of the United States, free from harmful interference, and to transfer or sell such resources.”⁵²

Many problems with the proposed bill were raised early on.⁵³ While still in debate on the House floor, Representative Donna Edwards of Maryland pointed out the non-appropriation conflict between the proposed bill and the Outer Space Treaty.⁵⁴ She asserted that the bill would undoubtedly run into this conflict if passed, and recommended more hearings to flesh the conflict out.⁵⁵ Relying on the act of sovereignty theory, Representative Edwards also addressed the temporal concern that the bill was premature in that it would allow the new aerospace industry an essentially “regulation free” opportunity to work without specific safety requirements, thereby not requiring any industry standards to be implemented.⁵⁶ The act of sovereignty theory that Representative Edwards was referring to is the idea that private appropriation of outer space resources constitutes an act of sovereignty because property rights are granted by states.⁵⁷

Skepticism and resistance persisted during the Committee consideration stage by the minority-view leaders.⁵⁸ They claimed that there seemed to be a conflict between the proposed bill and the Outer Space Treaty.⁵⁹ Relying on an opinion submitted by Professor Joanne Gabrynowicz of the University of Mississippi Law School, the minority argued that inclusion of the phrase: “consistence with the existing international obligations of the United States,” did not automatically resolve the international conflicts it posed.⁶⁰

The minority-view advanced three other points of conflict. First, on the counsel of Professor Gabrynowicz, they identified that the bill lacked any system of licensing for these outer space endeavors,⁶¹ resulting in many practical problems. Second, the minority took issue with the language: “obtain[ed] such resources,” claiming that such language implies asserting territorial sovereign property rights over celestial bodies—something that is prohibited by the Outer

⁵² H.R. 1508, 114th Cong. § 2 (2015).

⁵³ See 161 Cong. Rec. H3513 (daily ed. May 21, 2015) (letter from Joanne Irene Gabrynowicz submitted for the record by Rep. Edwards).

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ 161 Cong. Rec. H3512-14 (daily ed. May 21, 2015) (statement of Rep. Edwards).

⁵⁷ See 161 Cong. Rec. H3513 (daily ed. May 21, 2015) (letter from Joanne Irene Gabrynowicz submitted for the record by Rep. Edwards).

⁵⁸ H.R. Rep. No. 114-153, at 20 (2015).

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.* at 15.

Space Treaty.⁶² Finally, it was pointed out by the minority that they were unaware of any United States agency supportive of the bill.⁶³

The majority-view eventually won out, even though the Act has “no licensing regime to govern the activities undertaken in the bill.”⁶⁴ The bill is important, if for no other reason, because it is the first of its kind to take property rights in outer space under real scrutiny, and it is timely because of the growing private space technology industries. There was clearly a push from the majority-view for passage of the bill without a great deal of specific licensing and regulation for fear that it would unnecessarily stamper the work of the new private aerospace industry.

House Bill 1508 was eventually incorporated into the SPACE Act of 2015.⁶⁵ The House of Representatives passed the act by a 284 to 133 margin, and the Senate passed it on November 10, 2015.⁶⁶ President Obama signed it into law on November 25, 2015.⁶⁷

In its final form, the Act outlines property rights United States citizens may have over space resources:

A United States citizen engaged in commercial recovery of an asteroid resource or space resource under this chapter shall be entitled to any asteroid resources or space resources 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.⁶⁸

There is much scholarly discussion about the purpose and intent behind the United States’ passage of the Space Act of 2015 in the first place, especially considering the apparent conflicts the minority-view highlighted during the bill’s consideration.⁶⁹ Some suggest that the theory of *pedis possessio* is the principal force behind the statute, especially considering the language about

⁶² *Id.* at 21.

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ H.R. 2262, 114th Cong. (2015).

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ Spurring Private Aerospace Competitiveness and Entrepreneurship Act, Pub. L. No. 114-19, 129 Stat. 704 (2015).

⁶⁹ Thomas J. Herron, Note, *Student Note: Deep Space Thinking: What Elon Musk’s Idea to Nuke Mars Teaches U About Regulating the “Visionaries and Daredevils” of Outer Space*, 41 COLUM. J. ENVTL. L. 553, 592 (2016).

recovering celestial resources “free from harmful interference.”⁷⁰ *Pedis possessio* is the idea “that citizens should have the right to explore for and recover space resources ‘free from harmful interference.’”⁷¹ Suggestive of open freedom to claim property rights over any celestial resource that a United States citizen takes in outer space, *pedis possessio* offers insight into a possible aspiration of free claim over outer space, which the United States may be pushing for.⁷²

Others claim that the United States’ intent with the Space Act of 2015 is not to claim the type of appropriation prohibited by the Outer Space Treaty, but instead to exercise regulatory jurisdiction over in-situ resources its citizens appropriate in outer space.⁷³ Under this argument, states themselves do not appropriate celestial resources, but instead merely regulate the resources appropriated by their citizens.⁷⁴ The argument further claims that because states have jurisdiction over objects they send into outer space, they can validly regulate those endeavors.⁷⁵ Because states can regulate such endeavors, they may regulate private projects to exploit in-situ celestial resources without “appropriating” the outer space territory from which they were taken.⁷⁶ It is possible to infer from the language in the SPACE Act of 2015 that the United States believes the appropriation it authorizes by the Act is not really “appropriation,” but is instead merely a way to establish a regulatory jurisdiction over in-situ celestial resources.⁷⁷

Thus, the purpose behind the passage of the SPACE Act of 2015 is less clear than the purpose articulated by the drafters of the Outer Space Treaty. Nonetheless, the history of both lead to text that is open to interpretation.

II. METHODS OF TREATY INTERPRETATION AND APPLICATION

Much like statutes, treaties are subject to interpretation after their drafting and entry into force—especially in instances of ambiguity or confusion as to

⁷⁰ *See id.*

⁷¹ Craig Foster, *Excuse Me, You’re Mining My Asteroid: Space Property Rights and the U.S. Space Resource Exploration and Utilization Act of 2015*, U. ILL. J.L. TECH & POL’Y 407, 421 (2016) (citing Space Resource Exploration and Utilization Act of 2015 § 402 (codified as amended at 51 U.S.C. § 51302(a)(3) (2015)); *see also* H.R. Rep. No. 114-153, 2015)).

⁷² *Id.*

⁷³ *See Herron, supra* note 69, at 595.

⁷⁴ *Id.*

⁷⁵ *See id.* (noting that national governments retain jurisdiction over items sent into outer space).

⁷⁶ *Id.*

⁷⁷ *Id.* at 596.

their effects.⁷⁸ “The purpose of interpretation is to establish the meaning of the text” and apply it to a real problem.⁷⁹ Treaty interpretation is almost always based on the guidelines set forth in the 1969 Vienna Convention on the Law of Treaties (Vienna Convention),⁸⁰ which has wide acceptance with 116 state parties to it.⁸¹ Even though the United States is not a party to the Convention, the United States recognizes almost all of the Convention’s provisions as binding customary international law and thus acknowledges its authority.⁸² The Vienna Convention specifically outlines three methods of treaty interpretation: (a) the textualist approach, (b) the intentionalist approach, and (c) the teleological approach.⁸³

The textualist—or literal—approach to treaty interpretation has its roots in Article 31 of the Vienna Convention.⁸⁴ It states: “[a] treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.”⁸⁵ The textualist approach, therefore, contains three elements: (i) treaty interpretation should always be in good faith,⁸⁶ (ii) the terms of a treaty should be given their ordinary meaning, unless doing so “results in a meaning incompatible with the spirit, purpose and context of the clause or instrument in which the words are contained,”⁸⁷ and (iii) context determines a treaty’s ordinary meaning, taking into consideration its object and purpose.⁸⁸ The textualist approach is, therefore, the basic, step-one rule of treaty interpretation. Only if a textualist analysis leads to a “manifestly absurd or unreasonable” result, or if the text itself is “ambiguous or obscure[,]” should one turn to secondary methods of interpretation.⁸⁹

⁷⁸ LASSA F. L. OPPENHEIM, *OPPENHEIM’S INTERNATIONAL LAW* 1272 (Robert Jennings & Arthur Watts eds., 9th ed. 2008).

⁷⁹ *Id.* at 1271.

⁸⁰ DAVID J. BEDERMAN ET AL., *INTERNATIONAL LAW: A HANDBOOK FOR JUDGES* 21 (2003).

⁸¹ UNITED NATIONS, *STATUS OF TREATIES*, https://treaties.un.org/pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXIII-1&chapter=23&Temp=mtdsg3&clang=_en (last visited Oct. 26, 2017).

⁸² BEDERMAN ET AL., *supra* note 81, at 18.

⁸³ Vienna Convention on the Law of Treaties art. 31, *opened for signature* May 23, 1969, 1155 U.N.T.S. 331.

⁸⁴ OPPENHEIM, *supra* note 79, at 1271.

⁸⁵ Vienna Convention on the Law of Treaties, *supra* note 84, at 340.

⁸⁶ OPPENHEIM, *supra* note 79, at 1272.

⁸⁷ *Id.* (quoting *South West Africa Cases (Eth. v. S. Afr.; Liber. v. S. Afr.)*, Judgment, 1962 I.C.J. 315, 336 (Dec. 21)).

⁸⁸ *Id.* at 1273.

⁸⁹ BEDERMAN ET AL., *supra* note 81, at 22–23 (quoting Vienna Convention on the Law of Treaties, *supra* note 83, at 340).

The broad text in Article II of the Outer Space Treaty provides an ordinary and unambiguous meaning free from absurdity.⁹⁰ The language of Article II is short: “[o]uter space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.”⁹¹ At first glance, the language clearly intends to bar ownership over all aspects of outer space, with the only wrinkle of confusion being the meaning of “national appropriation.” Stephen Gorove, a space law expert, has suggested it is better to first define appropriation before determining how “national” modifies the term.⁹² Broadly, appropriation is “the taking of property for one’s own or exclusive use with a sense of permanence.”⁹³ In this regard, appropriation is of a “national” character when it is by an entity under the sovereignty of the state from which they come or represent.⁹⁴ Even though Article II uses the “national” language, its ordinary meaning is most closely linked to all sovereignties and the individuals and entities that attain property rights under the authority of a sovereign.

A separate insight of classic legal realism logically lends itself to the same conclusion. For an individual to hold property rights in something, the government must legally recognize the property rights.⁹⁵ The language of Article II bars governments from recognizing property interests in outer space for themselves. Because individuals and private entities cannot hold property rights in something without recognition from a sovereign that it will protect their rights, a correct interpretation of the language of Article II should bar the ability of private entities and individuals to appropriate rights over celestial resources as well. If a state recognizes a property right held by an individual over a celestial body or resource, such recognition would constitute a form of national appropriation because it is essentially “a *de facto* exclusion of other states and their nationals” to that body or resource.⁹⁶ The text of Article II naturally leads

⁹⁰ Outer Space Treaty, *supra* note 11.

⁹¹ *Id.*

⁹² See Stephen Gorove, *Interpreting Article II of the Outer Space Treaty*, 37 *FORDHAM L. REV.* 349, 352 (1969) (“With respect to the concept of appropriation the basic question is what constitutes ‘appropriation,’ as used in the Treaty, especially in contradistinction to casual or temporary use.”).

⁹³ *Id.*

⁹⁴ See *id.* (“Under such interpretation the establishment of a permanent settlement or the carrying out of commercial activities by nationals of a country on a celestial body may constitute national appropriation if the activities take place under the supreme authority (sovereignty) of the state.”).

⁹⁵ See Cohen, *supra* note 26, at 374 (“[P]roperty [is that] to which the following label can be attached: To the world: / Keep off X unless you have my permission, which I may grant or withhold. / Signed: Private citizen / Endorsed: The state”).

⁹⁶ Leslie I. Tennen, *Towards a New Regime for Exploitation of Outer Space Mineral Resources*, 88 *NEB. L. REV.* 794, 805 (2010).

to the conclusion that its non-appropriation language is binding on all actors—state and private.

A. Intentionalist Approach

The second method of treaty interpretation, the intentionalist approach, governs when a textualist analysis “[l]eaves the meaning ambiguous or obscure” or “[l]eads to a result which is manifestly absurd or unreasonable.”⁹⁷ Grounded in Article 32 of the Vienna Convention, this approach seeks to interpret a treaty in the way most closely aligned with the intent of its drafters.⁹⁸ The intentionalist analysis involves looking to other sources to ascertain the drafters’ intent through context, such as a treaty’s *travaux préparatoires*.⁹⁹ *Travaux préparatoires* are “[m]aterials used in preparing the ultimate form of an agreement or statute, and especially of an international treaty; the draft or legislative history of a treaty.”¹⁰⁰ “Context,” as defined in the Vienna Convention, includes “[a]ny agreement relating to the treaty which was made between all the parties in connexion [sic] with the conclusion of the treaty” and “[a]ny instrument . . . made by one or more parties . . . and accepted by the other parties.”¹⁰¹

In this case, because the textualist approach does not lead to an obscure or ambiguous meaning regarding Article II, further interpretation is not necessary. Nonetheless, an analysis of the intent of its drafters further supports the same conclusion. The Outer Space Treaty began as General Assembly Resolution 1148 of November 14, 1957.¹⁰² Resolution 1148 is aimed at preventing means of war and mass destruction by “decreasing the danger of war and improving the prospects of a durable peace through achieving international agreement on reduction, limitation and open inspection of armaments and armed forces.”¹⁰³ The Resolution further extends its rationale of peace to the prospects of outer space, claiming that outer space “shall be exclusively for peaceful and scientific purposes.”¹⁰⁴

⁹⁷ Vienna Convention on the Law of Treaties, *supra* note 84, at 340.

⁹⁸ BEDERMAN ET AL., *supra* note 81, at 21–22.

⁹⁹ *Id.* at 22.

¹⁰⁰ *Travaux Pr. . . préparatoires*, BLACK’S LAW DICTIONARY (10th ed. 2014).

¹⁰¹ Vienna Convention on the Law of Treaties, *supra* note 83, at 340.

¹⁰² G.A. Res. 1148 (XII), at 3 (Nov. 14, 1957).

¹⁰³ *Id.* at 3.

¹⁰⁴ *Id.* at 4.

After the creation of the Committee on the Peaceful Uses of Outer Space by the General Assembly adoption of Resolution 1472,¹⁰⁵ two internal committees were established for legal and scientific questions, respectively.¹⁰⁶ The subcommittee for legal questions saw draft opinions on Resolution 1148 from the Soviet Union, the United States, and the United Arab.¹⁰⁷ The proposal submitted by the Soviet Union is the first containing a clause about property rights, stating: "Outer space and celestial bodies are free for exploration and use by all States; no State may claim sovereignty over outer space or celestial bodies."¹⁰⁸ The Committee on the Peaceful Uses of Outer Space did not agree on the proposal submitted to the legal subcommittee, so the matter went up to the General Assembly for discussion.¹⁰⁹

The General Assembly later adopted Resolution 1962, which includes the language: "Outer space and celestial bodies are free for exploration and use by all states," and "Outer space and celestial bodies are not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means."¹¹⁰

During negotiation of the Outer Space Treaty, the French delegation raised the question of exactly how "use" should be construed.¹¹¹ Specifically, there was a question about whether "use" means mere exploration or if it contemplates actual exploitation of celestial resources.¹¹² The Soviet delegation replied, in part, that the committee should not "attempt to prescribe rules for situations on which it [is] impossible to form adequate judgement at the present stage."¹¹³ The General Assembly adopted Resolution 2222 as the Outer Space Treaty in its twenty-first session,¹¹⁴ leaving virtually no *travaux* relating to property rights in Outer Space. Regardless, it is clear from the early documents and debates that inspired the Outer Space Treaty that a few things were always important to the drafters: peaceful use, scientific exploration, and non-appropriation.

¹⁰⁵ G.A. Res. 1472 (XIV), at 5 (Dec. 12, 1959).

¹⁰⁶ Comm. on the Peaceful Uses of Outer Space, on Its Seventeenth Session, U.N. Doc. A/5181 (1962).

¹⁰⁷ *Id.* 7-9.

¹⁰⁸ *Id.* at 8.

¹⁰⁹ *Id.* at 3.

¹¹⁰ G.A. Res. 1962 (XVIII), at 1 (Dec. 13, 1963).

¹¹¹ Comm. on the Peaceful Uses of Outer Space, Legal Subcomm. on its Fifth Session, U.N. Doc. A/AC.105/C.2/SR.63 (Oct. 20, 1966).

¹¹² *Id.*

¹¹³ *Id.* at 11.

¹¹⁴ G.A. Res. 2222 (XXI) (Dec. 19, 1966).

B. Teleological Approach

The third method of treaty interpretation is the teleological approach—also called purposivism—which endeavors to interpret a treaty in the way most in line with its purpose, rather than following the ordinary meaning of its text or ascertaining the intent of its drafters.¹¹⁵ The goal of a teleological analysis is to “give[] scope to the fundamental reason or problem [the treaty] was supposed to address.”¹¹⁶ The teleological approach is rooted in Article 31 of the Vienna Convention, which requires treaties to be interpreted in light of their “object and purpose” while also adhering to “relevant rules of international law.”¹¹⁷ The “object and purpose” of a treaty is a broad phrase referring to a “treaty’s goals and the character of the means employed to achieve them.”¹¹⁸

Examining the era in which the Outer Space Treaty was drafted highlights its purpose. As briefly mentioned in Part I,¹¹⁹ it would be a mistake to analyze the Outer Space Treaty today without appreciating the events of the world at the time of its drafting and entry into force. The Soviet Union’s successful launch of Sputnik-1 took the globe by surprise and led to American apprehension about its Cold War rival.¹²⁰ Specifically, there was fear that this new access to outer space would encourage a nuclear war.¹²¹ It can also be said that the United States was worried that the Soviet Union was getting ahead of it with regard to scientific developments.¹²² The current form of, and signatories to, the Outer Space Treaty suggests that other countries were likely just as concerned.¹²³

These concerns of impending war and a “space race” of countries to potentially claim territory in outer space is explicit in the language of the Treaty. As Johnathan Galloway analogizes to game theory, two Cold War rivals were involved in a zero-sum conflict where one would come out on top, or a non-zero-sum situation where the two countries would eventually work together to achieve a purpose for the use of outer space that the entire globe could benefit from.¹²⁴

¹¹⁵ BEDERMAN ET AL., *supra* note 81, at 23.

¹¹⁶ *Id.*

¹¹⁷ Vienna Convention on the Law of Treaties, *supra* note 84.

¹¹⁸ David S. Jonas & Thomas N. Saunders, *The Object and Purpose of a Treaty: Three Interpretive Methods*, 43 VAND. J. TRANSACTIONAL L. 565, 580 (2010).

¹¹⁹ See discussion *supra* Part I.

¹²⁰ Kleiman, *supra* note 18; VON DER DUNK, *supra* note 18, at 36, 44.

¹²¹ Jonathan F. Galloway, *Revolution and Evolution in the Law of Outer Space*, 87 NEB. L. REV. 516, 516 (2008).

¹²² *Id.* at 516–17.

¹²³ United Nations Office for Disarmament Affairs, *supra* note 16.

¹²⁴ *Id.* at 517.

The most relevant Articles in the Outer Space Treaty confirm it was the second purpose—a peaceful use of outer space for the benefit of all—that won out. The application of the Article II non-appropriation doctrine properly applies to all actors, state and private. This conclusion most significantly supports the underlying historical purpose the time of the Treaty’s drafting reflects, and the global problems and threats it was intended to respond to.

Although all three forms of interpretation do, to varying degrees, support a conclusion that the non-appropriation doctrine of Article II prohibits all forms of celestial ownership (state and private), the textualist approach most strongly supports it. The argument is especially strong given the Vienna Convention’s requirement that treaty interpretation always start with the ordinary meaning of its text.¹²⁵ As concluded in Part III,¹²⁶ a textualist analysis of Article II of the Treaty leads to a finding that its language covers all actors, private and state. Further, the secondary forms of interpretation, intentionalist and teleological, support this conclusion as well. A finding that the Outer Space Treaty covers all actors is a result that does not conflict with the spirit, purpose, or context of the text when examined alongside secondary methods such as *travaux* and a historical examination of the global events at the time of the Treaty’s drafting. Combined, this reflects an object and purpose of the Treaty that naturally leads to a conclusion that its non-appropriation effect should be binding on all actors.

III. THE CASE FOR A BROAD INTERPRETATION OF THE OUTER SPACE TREATY

Even beyond formal modes of treaty interpretation, an argument also exists for the use of canons of construction to support this stance.

A. *Other Methods of Interpretation: Expressio unius est exclusion alterius*

Expressio unius est exclusion alterius is a widely accepted international canon of interpretation.¹²⁷ It states that when interpreting international materials, one should presume things not mentioned were excluded by deliberate choice, not inadvertence.¹²⁸ Defined as “[a] canon of construction holding that to express or include one thing implies the exclusion of the other, or of the alternative,”¹²⁹ the canon can theoretically be applied to support the conclusion that the Outer

¹²⁵ See Vienna Convention on the Law of Treaties, *supra* note 84.

¹²⁶ See discussion *supra* Part III.

¹²⁷ See Charlie Stewart, *The Rhetoric Canons of Construction: New Textualism’s Rhetoric Problem*, 116 MICH. LAW. REV. 1485, 1495 (2018).

¹²⁸ Wasser & Jobes, *supra* note 26, at 47.

¹²⁹ BLACK’S LAW DICTIONARY, *supra* note 101.

Space Treaty does indeed prohibit the appropriation of celestial resources by both state and private actors.

At the time of the Treaty's drafting, in the 1960s, only state actors were interested in outer space endeavors; it was far beyond the realm of possibility for the drafters to even imagine the technological advancements and privatization of space interests that have since occurred. Through the treaty, the drafters were speaking only to the audience to whom it would apply: sovereigns. If the drafters intended for private actors to be governed differently, *expressio unius* could be applied negatively to support that they would have explicitly addressed this in the Treaty.¹³⁰ Because Article II of the Treaty addresses a specific issue (non-appropriation of celestial resources and bodies) within the context of every actor to which it applied at the time of its drafting (state actors only), the canon should apply to say if the drafters wanted *any* interested entity to be *excluded* from the Treaty's non-appropriation effect, they would have expressly stated so in the text, thus drastically altering its literal interpretation.

IV. A NARROW INTERPRETATION OF THE TREATY CONFLICTS WITH THE TEXT

A. *Silence as to Private Actors*

A narrow interpretation of Article II of the Outer Space Treaty, concluding that it applies to state actors only, conflicts with the text. The argument for a narrow interpretation rests on the conclusion that because the Treaty does not address property rights per se, there is no prohibition against private appropriation of celestial resources.¹³¹ Some scholars extend this argument to say that because the Treaty only addresses appropriation by a sovereign, it is not binding on private appropriation of celestial resources, therefore allowing legal ownership over any part of outer space by an individual or private organization.¹³²

¹³⁰ Indeed, it is not clear that the doctrine *expressio unius* is typically used negatively in this way. The doctrine could be, and has been, used to suggest that the drafters' failure to mention private actors was instead deliberate, and therefore, the treaty does not apply to private actors. See Wasser & Jobes, *supra* note 26, at 47; Brittingham, *supra* note 21, at 36. However, a negative use, taking the doctrine a step further, does support the conclusion that the Treaty should be applied broadly and actually aligns most closely with the actual text and ordinary meaning of the Treaty.

¹³¹ See Joanne Irene Gabrynowicz, *The International Space Treaty Regime in the Globalization Era*, AD ASTRA, Fall 2005, at 30, <http://www.space-settlement-institute.org/Articles/IntlSpaceTreatyGabryno.pdf>.

¹³² See *id.*; P.J. Blount & Christian J. Robison, *One Small Step: The Impact of the U.S. Commercial Space Launch Competitiveness Act of 2015 on the Exploitation of Resources in Outer Space*, 18 N.C.J.L. & TECH. 160, 165 (2016); Wasser & Jobes, *supra* note 26, at 46.

While attractive, this argument fails to recognize the authority of the Vienna Convention; treaty interpretation must start with the text of the treaty and not an analysis of its drafters' perceived intent.¹³³ Only if such a textualist analysis yields a result that conflicts with the spirit, purpose, or context of the text should one turn to secondary methods of interpretation. This argument skips an important step in the analytical process by overlooking the textualist interpretation of the Treaty. A textualist interpretation, as examined in Part III,¹³⁴ supports a broad application of the non-appropriation doctrine.

B. *Jurisdictional Control*

Scholars also advance an argument that the Treaty bars states from appropriating territorial sovereignty over celestial resources, but allows for a “functional” property right—a jurisdictional control—over objects and persons, and by virtue of that, the celestial land to which it is attached for the time it is attached.¹³⁵ The argument here is grounded in Article VIII of the Outer Space Treaty, which is said to confer the “functional” property right.¹³⁶

The problem with this argument is that it conflates jurisdictional control with true property rights. The treaty *does* allow jurisdictional control over objects (equipment sent into space, for instance), but it does not “prescribe a system in which jurisdictional control can be used to establish real property rights.”¹³⁷ Therefore, this “functional” property right argument fails to establish a framework for valid appropriation of celestial resources under the Outer Space Treaty, and cannot, by extension, protect the SPACE Act of 2015.

¹³³ OPPENHEIM, *supra* note 79, at 1271.

¹³⁴ See discussion *supra* Part III.

¹³⁵ See Wayne N. White, *Real Property Rights in Outer Space*, Proceedings, 40th Colloquium on the Law of Outer Space, 1998, American Institute of Aeronautics and Astronautics, http://www.spacefuture.com/archive/real_property_rights_in_outer_space.shtml; Dalton, *supra* note 31, at 14.

¹³⁶ Article VIII of the Outer Space Treaty states: “A State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body. Ownership of objects launched into outer space, including objects landed or constructed on a celestial body, and of their component parts, is not affected by their presence in outer space or on a celestial body or by their return to the Earth. Such objects or component parts found beyond the limits of the State Party to the Treaty on whose registry they are carried shall be returned to that State Party, which shall, upon request, furnish identifying data prior to their return.” Outer Space Treaty, *supra* note 11.

¹³⁷ Andrew R. Brehm, Note & Comment, *Private Property in Outer Space: Establishing a Foundation for Future Exploration*, 33 WIS. INT'L L.J. 353, 360 (2015).

C. *Practical Concerns: Government Force*

Another argument some scholars advocate for is that the United States is asserting its intentions with the passage of the SPACE Act of 2015 without any regard to the Outer Space Treaty through hegemony.¹³⁸ If the international community allows countries to pass domestic laws like the United States SPACE Act of 2015, it is allowing those countries to completely disregard the Outer Space Treaty and instead engage in hegemony. This is essentially a “so what” approach where a country uses its military power and international authority to exercise dominance over an outer space resource to the exclusion of all other countries, and without regard to the Outer Space Treaty.¹³⁹ As Alfred McCoy points out, such international displays of hegemonic power are not a new practice of the United States,¹⁴⁰ and it is likely that the United States intends the passage of the SPACE Act of 2015 to be one of these displays.¹⁴¹ The biggest problem with this perspective is that it does not really resolve the dissonance between the Treaty and the Act at all, but simply ignores it. It also seems unlikely that the international community will accept this kind of dominion over outer space resources by one or a few countries without forceful opposition by other states.

Moving forward, it makes most sense for the current international regime against appropriation of outer space resources to control for reasons that go beyond international norms of treaty law. First, as previously discussed, there is a risk of hegemony over outer space resources if the United States protects its citizens’ appropriation. Further, the risk of hegemony and its potential for abuse goes against the purpose of the original Outer Space Treaty itself. It is apparent that concerns about ensuring international cooperation and agreement over outer space in its entirety was important to the drafters. In addition, the drafters were very specific in their desire for outer space to be the province of all humankind for scientific use and other peaceful purposes.¹⁴² Allowing the United States to continue its apparent path of appropriation through hegemony goes directly against the purpose of the Outer Space Treaty. It, by its very definition, gives only countries—like the United States—first dibs, and therefore the rights to

¹³⁸ See Alison Morris, Note, *Intergalactic Property Law: A New Regime for a New Age*, 19 VAND. J. ENT. & TECH. L. 1085, 1088, 1102 (2017).

¹³⁹ See *Id.* at 1102–05.

¹⁴⁰ See Alfred W. McCoy, *You Must Follow International Law (Unless You’re America)*, THE NATION (Feb. 24, 2015), <https://www.thenation.com/article/you-must-follow-international-law-unless-youre-america/>.

¹⁴¹ Morris, *supra* note 139, at 1102.

¹⁴² See Outer Space Treaty, *supra* note 11.

claim ownership over outer space resources simply because they have the means to get there.

In a theoretical world where the Outer Space Treaty does not continue to control, consequences of a space race to claim as many celestial resources as possible is likely to ensue. Without the Outer Space Treaty, countries are essentially free to use outer space in any way they wish without giving any regard to other countries or the celestial resources themselves. For instance, a country could mount a nuclear weapon on the moon or dump its nuclear waste in outer space without facing any real repercussions for doing so. It is necessary to have some kind of instrument to govern the use of outer space. If the Outer Space Treaty does not continue to control, then another treaty or instrument is necessary to ensure the safety and ecological impact of using outer space.

Clearly, private development in outer space has the potential to be very desirable, as companies like SpaceX and Moon Express are currently demonstrating.¹⁴³ The resources available in outer space are essentially limitless, and their development has extremely profitable potential.¹⁴⁴ While the current international regime under the Outer Space Treaty does not allow for such private development through appropriation, either a different treaty or an international agency could replace the Outer Space Treaty to attain those aspirations. A different treaty could achieve everything that was important to the drafters of the Outer Space Treaty and simply alter the language prohibiting appropriation, but only if such appropriation is peaceful in nature.

The establishment of an international agency to regulate appropriation and use of celestial resources is another strong option.¹⁴⁵ A compromise using an agency like this is the result of “intergovernmental agreements, clear legal structure, joint funding, coordinated technology, and a limited self-interested body independent of the United Nations.”¹⁴⁶ The International Space Station is an example of an international agency like this that has seen great success as a shared entity between multiple states.¹⁴⁷

Concerns about what may happen if the Treaty continues to control and the United States disregards it, or if the Treaty should not control at all in the future, really come down to whether it is best to allow private appropriation of celestial

¹⁴³ See Baidawi & Chang, *supra* note 3; FED. AVIATION ADMIN., *supra* note 6.

¹⁴⁴ *Id.*

¹⁴⁵ Morris, *supra* note 139, at 1106–07.

¹⁴⁶ *Id.* at 1106.

¹⁴⁷ See Morris, *supra* note 139, at 1107.

resources. If it is, the current international regime governing celestial appropriation in Article II of the Outer Space Treaty should face a complete overturn or replacement by a new treaty or international agency. Regardless, appropriation of any kind in outer space should not be mandated by national hegemony, but instead by a clear international regime agreed to by space-faring states that respects equality and ecological fairness.

CONCLUSION

The Outer Space Treaty is the principal treaty that regulates international endeavors in outer space, and it specifically prohibits appropriation of outer space resources and bodies. This conclusion finds support not only through the three most widely-accepted methods of treaty interpretation, but also through canons of construction and practical concerns.

A textualist interpretation that supports a broad application of Article II is most proper. And even through analysis using secondary methods of interpretation (intentionalist or teleological interpretations), the textualist result still prevails. A broad interpretation of the Treaty remains most true to the spirit of the text, and is most consistent with its *travaux* and the state of technology and global events at the time of its drafting.

The world today is very different than it was fifty years ago when the Outer Space Treaty emerged. American companies like SpaceX and Moon Express have shown the desirability that private development of outer space may have, and demonstrate that such development might be highly valuable in the future.¹⁴⁸ Through the SPACE Act of 2015, the United States recognizes this and is attempting to make it easier for these companies to do the work they aim to do without significant interference.¹⁴⁹ If it is desirable to allow appropriation of outer space resources, the current international governing regime under the Outer Space Treaty simply will not work. It clearly bars all forms of appropriation; therefore, the creation of a new regime is necessary to support those goals.

It is unlikely that such private development can occur without appropriating celestial resources. If there is no change in international law to allow it—either by a treaty or by the creation of an international agency—it is possible that some countries will adopt a “so what” attitude and pass domestic laws, similar to the SPACE Act of 2015, that support their own celestial endeavors through

¹⁴⁸ See Baidawi & Chang, *supra* note 3; FED. AVIATION ADMIN., *supra* note 6.

¹⁴⁹ H.R. 2262, 114th Cong. (2015).

hegemony, without any regard to other countries or the safety or ecological stability of outer space. And if the Outer Space Treaty faces rejection without replacement by a different governing instrument, there may be a great risk of a race among countries to claim as many resources as they can in outer space. Therefore, even if private development is most desirable and the international community agrees to either alter or replace the non-appropriation effect of the Outer Space Treaty, there must be *some* governing instrument or body to regulate the use of outer space at the risk of things getting completely out of hand.

There exists a direct counter-argument that Article II of the Outer Space Treaty does not apply to private actors at all, only to state actors.¹⁵⁰ This argument rests primarily on the idea that a treaty is a kind of contract between states that benefits their citizens but does not directly bind their citizens to international obligations.¹⁵¹ However, the purpose behind the drafting of the Treaty in the first place most logically stands for the conclusion that ensuring safety and ecological standards in outer space has always been important.¹⁵² Allowing a loophole for private actors to essentially do whatever they want with celestial resources and planetary bodies goes directly against the core purpose of having such a treaty in the first place.

There is also a strong argument that the canon *expressio unius* can cut the other way.¹⁵³ Even though it is unlikely that the drafters of the Outer Space Treaty contemplated private development in outer space, their failure to mention private actors expresses a deliberate choice.¹⁵⁴ *Expressio unius*, if applied positively, says the treaty does not apply to private actors at all. However, if this true, private actors technically have free reign to do essentially whatever they want in outer space without any real international limits on that freedom. Because the drafters of the Outer Space Treaty expressed concern with limiting the power of states to appropriate and use outer space for self-interested gain,¹⁵⁵ it is a stretch to say that the drafters would agree to allow private entities to do the same. It is more sound that the canon should apply to say that if the drafters

¹⁵⁰ See Jean d'Aspremont, Andr. . . Nollkaemper, Ilias Plakokefalos & Cedric Ryngaert, *Sharing Responsibility Between Non-State Actors and States in International Law: Introduction*, 62 NETH. INT'L L. REV. 49, 54 (2015).

¹⁵¹ See *id.*

¹⁵² See Outer Space Treaty, *supra* note 11.

¹⁵³ See Wasser & Jobes, *supra* note 25, at 41; Brittingham, *supra* note 21, at 37.

¹⁵⁴ See Wasser & Jobes, *supra* note 25, at 41; Brittingham, *supra* note 21, at 37.

¹⁵⁵ See Outer Space Treaty, *supra* note 11.

intend any entity, private or state, to be excepted from the Treaty's bar on appropriation, it would be directly expressed in the text of the treaty.

By its passage of the SPACE Act of 2015, the United States is implicitly adopting a hegemonic approach to future appropriation of celestial resources. The Act explicitly allows United States citizens to recover and own resources extracted from celestial bodies,¹⁵⁶ thus creating a property right. Passage of the act is a signal that the United States, a sovereign, is creating and enforcing that property right.

Because this creation of the property right deals with outer space and celestial resources, it directly implicates the Outer Space Treaty, which in Article II broadly rejects appropriation of any kind in outer space.¹⁵⁷ The United States' creation of a property right that an international treaty directly governs constitutes an act of sovereignty that is impermissible under the Outer Space Treaty. Through its current language, the SPACE Act of 2015 creates an illegal property right as against Article II of the Outer Space Treaty and is thus invalid without further amendment or replacement of the Treaty itself.

The dreams and work of private aerospace organizations like SpaceX and Moon Express may be for nothing. While their milestones are commendable and their dreams desirable, they simply cannot achieve what they have set out to without valid assurance—both nationally and internationally—that once they reach outer space, they can reap what they sow. Article II of the Outer Space Treaty should be interpreted broadly as to cover both private and state entities. The resulting effect of Article II is a bar on all appropriation of celestial resources, thus impeding private development in outer space and invalidating the SPACE Act of 2015.

For private aerospace companies to achieve their goals, a shift in the current international regulatory regime is necessary. Either the Outer Space Treaty must undergo amendment to specifically address private appropriation, or another treaty or international agency must replace it to oversee celestial development and ensure adherence to important considerations of safety and ecological fairness.

On Tuesday, February 6, 2018, SpaceX successfully launched its Falcon Heavy rocket into the Earth's orbit, carrying aboard Elon Musk's own red

¹⁵⁶ H.R. 2262, 114th Cong. (2015).

¹⁵⁷ See Outer Space Treaty, *supra* note 11.

convertible.¹⁵⁸ The Falcon Heavy rocket is only one of SpaceX's many technological developments toward its goal of achieving celestial travel between Earth and Mars.¹⁵⁹ Companies like SpaceX are clearly not slowing down. The question remains whether the international rule of law can keep up.

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¹⁵⁸ Kenneth Chang, *Falcon Heavy, in a Roar of Thunder, Carries SpaceX's Ambition Into Orbit*, N.Y. TIMES, Feb. 7, 2018, at A1.

¹⁵⁹ *Id.*

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