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ADR That is Out of This World: A Regime for the Resolution of Outer- Space Disputes

GEORGE KHOUKAZ*

I. INTRODUCTION

Gone are the days when we perceived outer-space exploration as a science-fiction movie. In 2004, President George W. Bush announced ambitious goals in the pursuit of space exploration.¹ The goals included returning to the moon by 2020, using the moon as a launch point for future exploratory missions, in addition to sending humans (and a number of different explorative equipment) to Mars.² To put it in simple terms, Bush's plan aimed at "bogg[ing] the imagination" and "test[ing] our limits to dream."³ Space exploration is obviously not a new endeavor; however, Bush's speech revived a movement of increased space explorations. It is now part of an expansive foreign policy strategy that involves having American power on a "broad geographical canvas from the Middle-East to outer space."⁴ The United States' interest in enlarging and increasing its presence in outer space is an extension of its current geographically extensive military presence around the globe.⁵ These outer-space exploratory goals are compared to the expansionist aspirations of ocean-born European empires of the 17th and 18th centuries;⁶ and therefore project a future where nations will compete over space-control to gain a geostrategic advantage on Earth.

A. *A Brief Historical Background*

The military-inspired space race is not a new phenomenon; it is the hallmark of the Cold-War era. After the Second World War, the United States and the Soviet Union emerged as the sole superpowers and each became increasingly more suspicious of each other's activities.⁷ The Soviets refused the "Open Skies" proposal, which would have allowed each nation to fly reconnaissance aircrafts over the

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1. Office of the Press Sec'y, *President Bush Announces New Vision for Space Exploration Program*, THE WHITE HOUSE (Jan. 14, 2004), <https://history.nasa.gov/Bush%20SEP.htm>.

2. *Id.*

3. *Id.*

4. *New Age of Exploration*, THE WASHINGTON TIMES (Mar. 4, 2004), <http://www.washington-times.com/news/2004/mar/4/20040304-082405-1445r/>.

5. *Id.*

6. *Id.*

7. Rima Chaddha, *Space Race Time Line*, PUB. BROAD. SERV. NOVA (Nov. 6, 2007), <http://www.pbs.org/wgbh/nova/astrospies/time-nf.html>.

other.⁸ As a result, President Eisenhower announced the United States' plan to launch a satellite into space in 1955.⁹ The Soviets reciprocated by announcing they would work on achieving the same goal.¹⁰ The space race was triggered and a general public fear started to build. Whichever power reached space first would claim it for itself while excluding the other, leading to a military confrontation.¹¹

This Comment is influenced not only by the military's exploration of outer space, but also by a much more recent and interesting development: the increased role of private entities in space exploration and space-related activities. In June 2004, "SpaceShipOne became the first private-venture craft to leave the earth's atmosphere and enter space."¹² Less than a decade later, in October 2012, another private company launched the first commercial flight to the International Space Station (ISS).¹³ Since then, SpaceX has launched at least six other missions into the ISS and has recently started the process of using cost-effective, reusable rockets for private space missions.¹⁴

As of 2013, the "global space economy" was valued at \$314.17 billion.¹⁵ Interestingly, the private sector accounted for the 76% lion-share of all space-related expenses, while government expenditures were limited to the remaining 24% of the global space economy.¹⁶ Unlike State-sponsored missions, privately-funded space activities have a much broader scope, resulting in significantly more complicated legal consequences. For example, a number of companies are developing the required technology to mine asteroids in outer space for their precious metals such as gold.¹⁷ Other companies are looking at outer space from a different perspective: they are working to send interested wealthy people to outer space as tourists.¹⁸ Virgin Galactic, for instance, claims to have more than 500 to-be space-farers presently signed up for its space tourism ventures, including celebrities like Tom Hanks and Angelina Jolie.¹⁹

8. Caroline Arbaugh, *Gravitating Toward Sensible Resolutions: The PCA Optional Rules for the Arbitration of Disputes Relating to Outer Space Activity*, 42 GA. J. INT'L & COMP. L. 825, 827 (2014).

9. *Id.*

10. *Id.*

11. Glenn Harlan Reynolds, *Space Law in the 21st Century: Some Thoughts in Response to the Bush Administration's Space Initiative*, 69 J. AIR. L. & COM. 413, 414 (2004).

12. Ka Fei Wong, *Collaboration in the Exploration of Outer Space: Using ADR to Resolve Conflicts in Space*, 7 CARDOZO J. OF CONFLICT RESOL. 445, 446 (2006).

13. *First Official Commercial Cargo Flight Heading to International Space Station*, CNN (October 8, 2012, 2:11 PM), http://www.cnn.com/2012/10/07/us/spacex-launch/index.html?hpt=hp_t1.

14. Stephen Clark, *SES 10 Telecom Satellite in Florida for Launch on Reused SpaceX Rocket*, SPACEFLIGHT NOW (January 17, 2017), <https://spaceflightnow.com/2017/01/17/ses-10-telecom-satellite-in-florida-for-launch-on-reused-spacex-rocket/>.

15. Marcia S. Smith, *Space Foundation: Space Economy Grew by 4 Percent in 2013*, SPACE POLICY ONLINE (May 19, 2014, 9:36 PM), <http://www.spacepolicyonline.com/news/space-foundation-space-economy-grew-by-4-percent-in-2013>.

16. *Id.*

17. Charles Arthur, *Google Pair Back Plan to Lasso Asteroids and Mine them for Precious Metals*, THE GUARDIAN (Apr. 24, 2012, 2:21 PM), <http://www.guardian.co.uk/science/2012/apr/24/mining-asteroids-on-moon-precious-metals?INTCMP=SRCH>.

18. Mike Wall, *Next Giant Leap for Space Tourism: A Trip Around the Moon*, SPACE.COM (Apr. 28, 2011), <http://www.space.com/11502-space-tourism-moon-mission-space-adventures.html>.

19. Patrick Manning, *World's first spaceport nearly ready in New Mexico*, ASSOCIATED PRESS (Sept. 24, 2012), <http://www.foxnews.com/science/2012/09/24/world-first-spaceport-nearly-ready-in-new-mexico/>.

B. Purpose and Outline

The purpose of this Comment is to project into the future by addressing the resolution of disputes caused by private entities in outer-space. This author is well-aware that such a projection seems improbable today and sounds like a science fiction story. However, it should be noted that almost sixty years ago, reaching the moon was a matter of imagination, while today it is a reality. The point is that technology is evolving so quickly that outer-space disputes will become reality sooner or later. Assuming such a dispute takes place in outer-space, we will need to think about its legal implications. We will face difficulties relating to the choice of law: What law should apply? Which legal system has jurisdiction to address the dispute? If a judgment was somehow entered, how will the plaintiff enforce it in the defendant's home country? The answers to these questions are unpredictable at this point because there is no internationally-agreed upon structure which addresses these matters. This Comment will therefore formulate a proposal which calls for international efforts to develop a legal structure similar to the one in place for international commercial disputes.

Section II will primarily address the choice of law problem. The Comment will first highlight different methods currently used in non-sovereign locations such as in Antarctica and the high seas and address whether the proposed structure should rely on these methods or not. This Section will later address the different modern alternatives that have been developed and assess their viability. Section III will delve into the different organizations and conventions that have been put in place since the mid-20th century to tackle space-exploration disputes. This Section will underline the successes and failures of the different conventions, which will help develop a more efficient proposal by relying on past experiences. Finally, Section IV will stress the importance of developing a structure similar to the one for international commercial disputes but with a focus on outer-space disputes. This Section will emphasize the benefits of such a proposal, while explaining the benefits of an ADR-oriented structure vis-à-vis a litigation one. It will also heavily rely on the legal benefits that the New York Convention²⁰ and the UNCITRAL's Model Law²¹

20. The Convention on the Recognition and Enforcement of Foreign Arbitral Awards, also known as the "New York Arbitration Convention" or the "New York Convention," "is one of the key instruments in international arbitration. N.Y. ARB. CONVENTION, <http://www.newyorkconvention.org/> (last visited on Sept. 10, 2017). The New York Convention applies to the recognition and enforcement of foreign arbitral awards and the referral by a court to arbitration." *Id.* It "seeks to provide common legislative standards for the recognition of arbitration agreements and court recognition and enforcement of foreign and non-domestic arbitral awards." United Nations Commission on Int'l Trade L., Convention on the Recognition and Enforcement of Foreign Arbitral Awards, UNITED NATIONS, 1 (1958), <http://www.uncitral.org/pdf/english/texts/arbitration/NY-conv/New-York-Convention-E.pdf>. "The Convention's principal aim is that foreign and non-domestic arbitral awards will not be discriminated against and it obliges Parties to ensure such awards are recognized and generally capable of enforcement in their jurisdiction in the same way as domestic awards." *Id.* "An ancillary aim of the Convention is to require courts of Parties to give full effect to arbitration agreements by requiring courts to deny the parties access to court in contravention of their agreement to refer the matter to an arbitral tribunal." *Id.*

21. The (UNCITRAL's) Model Law is designed to assist States in reforming and modernizing their laws on arbitral procedure so as to take into account the particular features and needs of international commercial arbitration. It covers all stages of the arbitral process from the arbitration agreement, the composition and jurisdiction of the arbitral tribunal and the extent of court intervention through to the recognition and enforcement of the arbitral award. It reflects worldwide consensus on key aspects of international arbitration practice having been accepted by States of all regions and the different legal or economic systems of the world. *See generally* United Nations Commission on Int'l Trade L., *UNCITRAL*

provided to international commercial disputes, and incorporate these benefits into the proposal.

II. CHOICE OF LAW: A COMPLICATED MATTER

A. Lack of a Uniform Choice of Law System: Examples from Non-Sovereign areas

Imagine this:

An American biologist is conducting an experiment aboard an orbiting multinational space station (MSS) built by the United States, Canada, Japan, and the European Space Agency. The biologist is passing through the Canadian module, where a French astrophysicist is repairing an instrument panel. The astrophysicist carelessly pushes aside a wrench, which floats away and injures the biologist. Which state's choice of law rules—and institutions—determine which state's substantive laws will apply to the issues of the astrophysicist's liability and the American's ability to recover damages²²

This fact pattern is the nightmare of any first-year Civil Procedure law student. Thankfully, law students do not have to provide an answer at this moment, but the legal profession will have to do so at some point in the near future. The issue raised by the scenario above relates to the choice of law: which substantive law should govern in a dispute involving individuals from different countries and where the dispute takes place in a non-sovereign, "jurisdiction-less," location? Since outer-space is deemed part of the "common heritage of humankind,"²³ no state may assert control or exclusive dominion over any part of outer-space.²⁴ Subsequently, when a dispute arises in outer-space, such as in the example above, the decision as to which substantive law applies is hard, if not impossible, to figure out. It has been suggested that when addressing the choice of law issue, the decision-maker (i.e., the court or the arbitrator) should take into consideration a number of factors such as (1) the registry state of the MSS module at issue; (2) the nationality of the plaintiff; and (3) the nationality of the defendant.²⁵ However, it is likely that the courts applying this test might knowingly or unconsciously favor their own laws, which would result in an unpredictable system. Therefore, the inherent problem in this example is the lack of a uniform choice of law which would govern disputes (or torts in this case) aboard an MSS in outer-space.²⁶

Model Law on International Commercial Arbitration, UNITED NATIONS (1985), <http://www.newyork-convention.org/> (amended in 2006).

22. Helen Shin, "Oh, I Have Slipped the Surly Bonds of Earth": *Multinational Space Stations and Choice of Law*, 78 CAL. L. REV. 1375, 1376 (1990).

23. 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, art. I, 18 U.S.T. 2410, 2412-13, 610 U.N.T.S. 205, 207-08.

24. See, e.g., *id.* art. II, 18 U.S.T. at 2413, 610 U.N.T.S. at 208 (outer space "is not subject to national appropriation by claim of sovereignty").

25. Shin, *supra* note 22, at 1378.

26. *Id.* at 1377.

As explained above, the choice of law problem tends to be even more confusing in “jurisdiction-less,” non-sovereign territories (i.e., outer-space) because of the lack of applicable procedural and substantive law. The following two subsections will highlight how the international community addressed the choice of law problem in two non-sovereign places on Earth, and subsequently think about whether these examples serve as a helpful model for outer-space disputes.

i. Antarctica

Antarctica is an interesting example to rely on because several states claim sovereignty over different parts of this territory.²⁷ However, the Antarctic Treaty of 1959 froze these disputes,²⁸ resulting in an absence of a sovereign entity imposing its laws on the territories of the Antarctic²⁹—a similar situation to outer-space. The lack of a sovereign legal system, however, does not mean that each country is free to do what it pleases. The Antarctic Treaty imposed standards of conduct in addition to some methods of dispute resolution for activities carried on the territory.³⁰ In other words, the Antarctic Treaty binds signatory countries to a standard of conduct, and provides a framework for punishing breaching states.

However, the focus of this Comment is on the activities of individuals and private entities—rather than state actors—in non-sovereign territories (such as outer-space or Antarctica in this case). The Antarctic Treaty fails to regulate the wrongdoings of private parties from non-signatory countries.³¹ It solely provides jurisdiction by a signatory state over its nationals who are performing scientific or exploratory missions.³² If a French scientist commits a tort in Antarctica, he would only be subject to the jurisdiction of the French courts. A scientist from Mexico—a non-signatory country—for example, would not necessarily be subject to the jurisdiction of the Mexican courts nor to any other particular court’s system and a question arises as to how to assert jurisdiction over her. The Antarctic Treaty fails to provide a predictable and reliable legal solution to the wrongdoings of nationals of non-signatory states—which are numerous—and, therefore, could not serve as a model to be applied in outer-space disputes.

27. These states include Argentina, Australia, Chile, France, New Zealand, Norway, and the United Kingdom. JEFFERY D. MYHRE, *THE ANTARCTIC TREATY SYSTEM: POLITICS, LAW, AND DIPLOMACY* 7 (1986).

28. “Art. IV, sec. 1 of the Antarctic Treaty provides that nothing in the treaty shall be interpreted as a renunciation by any signatory of previously asserted claims to territorial sovereignty in Antarctica, or as affecting a signatory’s recognition or non-recognition of any other state’s claim to such sovereignty.” Shin, *supra* note 22, at 1379, n. 21; *See* Antarctic Treaty, Dec. 1, 1959, 12 U.S.T. 794, 796, 402 U.N.T.S. 71, 74.

29. Shin, *supra* note 22, at 1379.

30. Antarctic Treaty, *supra* note 28, arts. VI, XI, 12 U.S.T. at 797, 402 U.N.T.S. at 76.

31. Antarctic Treaty, *supra* note 28, art. VIII.

32. *Id.*

ii. The High Seas

Unlike land, the majority of the oceans and seas are not claimed (and could not be because of international agreements) by a state.³³ The aggregate of all unclaimed water areas (mainly oceans) constitutes the high seas, which no state is allowed to claim sovereignty over.³⁴ Despite the lack of an exclusive sovereign over the high seas, international law and treaties provide a legal framework for activities undertaken on the high seas.³⁵ However, unlike the Antarctic Treaty, the various treaties and agreements are equally enforceable to all states and their nationals.³⁶ For example, it is custom that the state under which the ship sails—also known as the flag state—has jurisdiction over that ship in the high seas.³⁷ Concurrently, a flag state will maintain primary jurisdiction over a defendant for misconduct occurring on the ship while on the high seas, despite the generally accepted notion of a state maintaining jurisdiction over its nationals who are within the jurisdiction of another state.³⁸ Therefore, despite the lack of an explicit choice of law structure which dictates the applicable substantive law, international agreements and customs provide a uniform rule from which a choice of law decision could be made.³⁹

An important distinction, however, could be drawn between the example of ships sailing in the high seas and space shuttles. As explained above, ships sail under the flag of a state and therefore can easily be associated with a set of national substantive and procedural laws. Since space activities require significant effort and financial investments, it is customary for private companies to team up with other companies (or even foreign State agencies). When a space exploration mission is undertaken by an association of different private companies it becomes much harder for a court to figure out the applicable state law. Subsequently, the choice of law method applied in the case of high seas is unlikely to be effective in outer-space disputes.

B. Traditional Choice of Law Approaches on Earth

Given that the above examples of non-sovereign areas were deemed non-helpful and not fully applicable for outer-space choice of law matters, we turn our attention to some of the traditional choice of law methods used on Earth. The following subsections will address the concept of *Lex Loci Delicti* and the subsequent developments in the legal field.

33. A coastal state can claim extensive (though not exclusive) jurisdictional rights in a zone up to 200 miles from an established baseline. See R. CHURCHILL & A. LOWE, *THE LAW OF THE SEA* 133 (rev. ed. 1988).

34. *Id.* at 164–65.

35. See United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1883 U.N.T.S. 397; see also The Convention on the High Seas, Apr. 29, 1958, 13 U.S.T. 2312, 450 U.N.T.S. 82.

36. Shin, *supra* note 22, at 1381.

37. R. CHURCHILL & A. LOWE, *supra* note 33, at 168–69.

38. *Id.* at 169.

39. Shin, *supra* note 22, at 1381–82.

i. The Traditional Approach: Lex Loci Delicti

Under the theory of *Lex Loci Delicti*, courts are likely to apply the substantive laws of the location where the wrongdoing takes place.⁴⁰ Some courts will look at the location “where the last event necessary to make an actor liable for an alleged tort takes place.”⁴¹ The benefits of this approach is that it provides uniformity and predictability: As long as the act is committed while on a sovereign territory, the courts will easily be able to determine the applicable law of the jurisdiction.⁴² Therefore, because of the straight-forward applicability of the jurisdiction’s laws, the plaintiff will have no opportunity to “shop-around” for a more favorable law.⁴³ Generally, most of the states with current abilities to send exploratory missions to outer-space—with the exception of the United States—rely on the *Lex Loci Delicti* theory.⁴⁴

Despite its benefits and long-use, *Lex Loci Delicti* is not necessarily the best approach for outer-space. We should first keep in mind that most United States state courts are abandoning this approach in favor of other alternatives.⁴⁵ One could question whether this approach will get the needed international support when the United States—a major player in outer-space activities—does not rely on it. Another obstacle to the adoption of the theory is determining the location (and therefore the applicable substantive laws) for outer-space disputes. Unlike on Earth, there are no sovereign territories beyond the Earth’s atmosphere. Therefore, the whole purpose of the *Lex Loci Delicti* theory will be undermined by the lack of sovereign jurisdictions with applicable substantive laws. One author has suggested, in reliance on maritime law, that “the registration of the space station with a state makes the station an actual orbiting fragment of the registry state, so that any tort is actually committed ‘in’ the registry state.”⁴⁶ However, following the failure of such an argument in maritime law disputes, and the complexities explained above of private space ventures the author acknowledges the shortcomings of the proposal.⁴⁷

The choice of law question remains unanswered at this point and must be taken into consideration for any future proposal addressing disputes in outer-space. Section II tackled the choice of law issue from a theoretical perspective by highlighting and explaining different methods used around the world in diverse circumstances. Since the mid-20th century, international actors put in place several applicable conventions and different organizations with the aim of tackling outer-space activities in its different forms. These efforts went beyond the jurisdictional question that Section II above addressed: They should be understood as an aggregate of diplomatic efforts by the powerful nations to regulate space activities. Section III below expands on these efforts, and the resulting conventions and international organizations, as well as their contribution to the field from a practical legal perspective, in addition to their short-comings.

40. ERNST RABEL, *THE CONFLICT OF LAWS: A COMPARATIVE STUDY* 235–37 (2d ed. 1960).

41. RESTATEMENT (FIRST) OF CONFLICT OF LAWS § 377 (AM. LAW. INST. 1934).

42. Shin, *supra* note 22, at 1391.

43. *Id.*

44. *Id.*

45. See ROGER C. CRAMTON ET. AL., *CONFLICT OF LAWS: CASES-COMMENTS-QUESTIONS* 226–27 (4th ed. 1987) (as of publication date, only 15 out of 50 states apply the traditional choice of law rules).

46. Shin, *supra* note 22, at 1393.

47. *Id.* at 1393–94.

III. DECADES OF INTERNATIONAL DIPLOMATIC EFFORTS: SCATTERED BENEFITS AND SHORTCOMINGS

A. Outer-Space Treaty

In 1967, the United Nations adopted the first international treaty relating to outer-space, the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies—commonly known as the outer-space treaty (“OST”).⁴⁸ This treaty became known as the “constitution of outer-space” because of its broad scope and content.⁴⁹ Despite it being a novelty at the time, OST was forged during an era of increased tensions and therefore reflects international aspirations to de-escalate the potential confrontation.⁵⁰ In other words, OST is a reflection of the cold-war era and mirrors the geopolitical interests of the two superpowers.⁵¹ Subsequently, OST underlined the peaceful aspect of any future explorative mission and urged states to abide by that.⁵² Furthermore, the treaty maintained that the outer-space shall not be subject to the control of any single state,⁵³ thus that every state has a “non-exclusive right to the peaceful use, study, and exploration of outer space.”⁵⁴ The treaty also calls for “cooperation and mutual assistance” between the different states (mainly the United States and the Soviet Union at the time) for any outer-space activity.⁵⁵

From a relevant legal perspective, the treaty addresses individual state’s liability in case of harm. States, in their official capacities, are held ultimately responsible for any damage caused by their activities and the activities of their nationals.⁵⁶ In addition, the treaty holds the state liable for damages caused by a space object which the state has either launched or assisted in its launching.⁵⁷ Subsequently, the treaty puts the burden on the state for regulating and overseeing space ventures.⁵⁸ The treaty, despite it being the “constitution” of space activities, failed to mention private entities and their space ventures. Understandably, the treaty was drafted during a period in which it would be hard to anticipate private space ventures. The focus of the document was geared toward preventing a destructive confrontation rather than regulating the minute details of private space ventures.

48. 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 [hereinafter Outer Space Treaty].

49. Brian Abrams, *First Contact: Establishing Jurisdiction Over Activities in Outer Space*, 42 GA. J. INT’L & COMP. L. 797, 801–02 (2014).

50. Brian Beck, *The Next, Small, Step for Mankind: Fixing the Inadequacies of the International Space Law Treaty Regime to Accommodate the Modern Space Flight Industry*, 19 ALB. L. J. SCI. & TECH. 1, 12 (2009).

51. Abrams, *supra* note 49, at 802.

52. Outer Space Treaty, *supra* note 48, art. I.

53. *Id.*

54. Arbaugh, *supra* note 8, at 833 (citing GERARDINE MEISHAN GOH, DISPUTE SETTLEMENT IN INTERNATIONAL SPACE LAW: A MULTI-DOOR COURTHOUSE FOR OUTER SPACE 140 (2007)).

55. Outer Space Treaty, *supra* note 48, arts. IX–XII.

56. *Id.* art. VI.

57. *Id.* art. VII.

58. *Id.* art. VI.

B. The Liability Convention

In 1972, the *Claims Commission of the Convention on International Liability for Damage Caused by Space Objects*—also known as the Liability Convention—was entered into force.⁵⁹ It was enacted to clarify and supplement the outer-space treaty.⁶⁰ While the treaty imposed liability on states for their outer-space activities, the liability convention set the standard for the liability.⁶¹ Interestingly, the Liability Convention went into more details than the OST, such as distinguishing between harm caused in outer-space and the one caused by space objects on the surface of the earth or in the air.⁶² Article II of the liability convention sets out the following: “A launching State shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight.”⁶³ Article II imposes a strict liability standard to any harm caused on the surface of the earth or in the air by space objects launched by a state. Such a standard is different than the “negligence” one stated by article III for harm caused in outer-space.⁶⁴ In either case, the Liability Convention imposes liability solely on the states, and not on individual actors or private companies.⁶⁵ So once again, as with the OST, the Liability Convention fails to cover wrongdoings committed by the future main actors of outer-space activities.

On a positive note, however, the Liability Convention moves one step ahead by laying out a dispute resolution process, in case of a space object-related dispute (either in outer space, in the air, or on the surface of the earth). It sets out a two-tier process for settling disputes between states.⁶⁶ The process encourages diplomatic efforts to solve the dispute; therefore the use of bilateral (or multilateral, in case more parties are involved) diplomatic channels to settle the dispute peacefully.⁶⁷ Only when diplomacy fails after one year of good faith efforts, is a state allowed to bring a claim under the Liability Convention.⁶⁸ This second option involves the setting of a Claims Commission—an *ad hoc* type of a commission—to solve the matter.⁶⁹ The commission is similar to an arbitration tribunal: It consists of three members, one chosen by each side and a third whom both parties agree on.⁷⁰ The commission will make its decision after evaluating the merits, and has the authority to award a monetary compensation.⁷¹ The commission’s award is binding only if the parties agree to that, in writing, beforehand.⁷²

59. Arbaugh, *supra* note 8, at 833–34.

60. *Id.*

61. Abrams, *supra* note 49, at 805.

62. *Id.*

63. Convention on International Liability for Damage Caused by Space Objects, art. II, Mar. 29, 1972, 24 U.S.T. 2389, T.I.A.S. No. 7762, 10 I.L.M. 965 [hereinafter Liability Convention].

64. *See generally id.* (“In the event of damage being caused elsewhere than on the surface of the earth to a space object of one launching State or to persons or property on board such a space object by a space object of another launching State, the latter shall be liable only if the damage is due to its fault or the fault of persons for whom it is responsible.”)

65. Abrams, *supra* note 49, at 805; *see also* Liability Convention, *supra* note 63, art. II & III.

66. Abrams, *supra* note 49, at 806.

67. Liability Convention, *supra* note 63, art. IX.

68. *Id.* art. XIV.

69. *Id.*

70. *Id.* art. XV.

71. *Id.* art. XVIII.

72. *Id.* art. XIX.

It is important to note that the Liability Convention does not impose exclusive means to seek redress: Parties are free to seek a remedy through other means, but are prevented from seeking the same remedy through different means at the same time—such as bringing a claim in the national courts of the state while having a pending claim with the commission.⁷³ Despite the author's appreciation of the efforts of the Liability Convention to lay out a dispute resolution process, one could question its viability from a practical standpoint and could question whether a state would be willing to bind itself to a decision of a commission over which it has no control. After all, the Liability Convention has never been called on, so far, and we cannot predict its efficiency at this point.⁷⁴

C. *The International Court of Justice*

One recurrent suggestion for addressing outer-space disputes has been to involve the International Court of Justice (“ICJ”) in the ADR process. Particularly, the suggestion is for the establishment of a chamber within the ICJ for outer-space disputes, similar to the chamber created back in 1993 for environmental matters.⁷⁵ Even though the idea of using the ICJ for particularly narrow matters is not new,⁷⁶ the idea got some support among space lawyers.⁷⁷ This idea sounds interesting because it gives the parties the chance to solve their dispute in front of a specialized chamber, while keeping the door open to transfer the case to the full court, if needed.⁷⁸ The environmental chamber of the ICJ has, so far, proven to be unpopular.⁷⁹ The chamber has not heard a case because no state filed a claim there.⁸⁰ A number of reasons exist as to why the environmental chamber has been rather unsuccessful in carrying out its job. A relevant reason, for instance, is the lack of a uniform, internationally agreed-upon environmental law under which the parties could bring their claims.⁸¹ For example, in a case involving both Hungary and Slovakia, the former relied on the principles of international environmental law while the latter focused on the law of treaties.⁸² Similar to environmental matters, there is a lack of uniformity of space law at the international level. In this sense, even if a space chamber was initiated, we could expect some cumbersome procedural conflicts; let alone the parties' willingness to bring their disputes there because of a

73. Liability Convention, *supra* note 63, art. XI.

74. Michael Listner, *A New Paradigm for Arbitrating Disputes in Outer Space*, THE SPACE REVIEW (Jan. 9, 2012), <http://www.thespacereview.com/article/2002/1>.

75. The ICJ established a special seven-member Chamber of the Court for Environmental Matters in 1993. See *Chambers and Committees*, INTERNATIONAL COURT OF JUSTICE, <http://www.icj-cij.org/en/chambers-and-committees>.

76. Sylvia-Maureen Williams, *Dispute Settlement and Space Activities: A New Framework Required?*, in PROCEEDINGS OF THE 39TH COLLOQUIUM ON THE LAW OF OUTER SPACE 61, 64 (1996).

77. Michael Byers et. al., Report of the Sixty-Eighth Conference, 1998 The Int'l L. Ass'n 247, <http://heinonline.org/HOL/Page?handle=hein.ilarc/ilarc1998&div=1&id=&page=&collection=ilarc>.

78. Revised Rules of Court, 1945 I.C.J. Acts & Docs

79. Lotta Viikari, *Towards More Effective Settlement of Disputes in the Space Sector*, 1 LAPLAND L. REV. 226, 241 (2011).

80. *Id.*

81. *Id.*

82. See generally Gabcikovo-Nagymaros Project (Hungary v. Slovakia), Judgment, 1997 I.C.J. Rep 7, (Sept. 25).

lack of currently agreed-upon international agreements that would allow parties to effectively solve their dispute.⁸³

The viability of a space chamber as part of the ICJ is, therefore, subject to future experiences despite it being an unlikely first choice. Away from courts and litigation, some scholars have suggested arbitration as a method to solve outer-space disputes. Section IV below will go into further detail about the need to create an internationally agreed upon structure to resolve any future space-related disputes. Furthermore, the Comment will address whether litigation or alternative dispute resolution methods (mainly arbitration) would better serve the needs of space disputes. Ultimately, we will elaborate on the proposal of this Comment on the need to rely on past experiences in different legal fields to come up with an adequate way to address space-related disputes.

IV. TOWARD A UNIFORM ARBITRAL INSTITUTION

As explained in the introduction, the goal of this Comment is to develop a proposal for the creation of a firm structure for addressing outer-space disputes. A number of questions arise: Why do we need an internationally agreed-upon dispute resolution method? What are the benefits of developing such a structure? Should it involve litigation, or should we think about alternative dispute resolution methods; and if so, which one? The proposed structure in this Comment is one that heavily relies on a binding arbitration process, very similar in form to the one used for international commercial disputes. Section IV will address the questions raised above and elaborate on the proposed structure.

A. The Need and Benefits of an Arbitral Institution

A significant existing arbitral institution is the Permanent Court of Arbitration (PCA). Established in 1899, the PCA was the very first permanent inter-governmental institution to provide a number of ADR services.⁸⁴ Despite it being initially established for political reasons, including the objective of limiting the increased armament in Europe,⁸⁵ the PCA quickly evolved into an international institution, strategically located in the Hague, Netherlands,⁸⁶ “perfectly situated at the juncture between public and private international law to meet the rapidly evolving dispute resolution needs of the international community.”⁸⁷ With more than 120 member states,⁸⁸ the PCA is not, despite its name, a court in the traditional sense but rather a permanent framework for resolving disputes.⁸⁹

In 2009, the PCA realized the existing gaps in the current system and felt the need to address the development of an effective alternative dispute system for

83. Viikari, *supra* note 79, at 241.

84. *History*, PERMANENT COURT OF ARBITRATION, <https://pca-cpa.org/en/about/introduction/history/> (last visited Sept. 11, 2017).

85. *Id.*

86. *About*, PERMANENT COURT OF ARBITRATION, <https://pca-cpa.org/en/about/> (last visited Sept. 11, 2017).

87. *Id.*

88. *Id.*

89. *Id.*

space-related disputes.⁹⁰ The Administrative Council of the PCA has called for the creation of an Advisory Group of legal experts⁹¹ who were tasked with considering the “desirability of, or need for, arbitration rules specifically targeted at the resolution of space-related disputes.”⁹² After an extensive study, the Advisory Group reached its conclusion, making three relevant points.⁹³ It found that (1) there is a need for an international forum to address outer-space disputes, and the forum should be equally applicable to both state and non-state actors;⁹⁴ (2) the scope of activity of this forum should be broad enough to address all space-related disputes rather than those covered by the narrow treaties in place;⁹⁵ and (3) despite the existence of other dispute resolution alternatives for private parties, a space-focused mechanism is worthwhile.⁹⁶ The Advisory Group concluded that establishing an international arbitral forum, specifically geared toward outer-space disputes, would be the most advantageous way to proceed forward.⁹⁷

Developing a new ADR-oriented forum to address outer-space disputes provides a number of benefits. Space activities require cooperation between the different international players.⁹⁸ If a superior dispute resolution system—different from the confrontational aspect of litigation—is created, it will result in a better, more cooperative, and less hostile environment.⁹⁹ Such an environment could allow for better relief subsequent to a dispute—such as help in cleaning disasters—which will trigger a series of positive reactions (due to the parties understanding that the benefits of entering into the venture overcomes the costs of solving a potential dispute) between both private and public actors, reflecting the initial aspirations of a peaceful, cooperative space exploration program.¹⁰⁰

Another major benefit relates to the choice of law problem addressed above. ADR procedures could allow parties to negotiate the applicable substantive and procedural law, or in case they fail to reach an agreement, the panel could instead make the choice of law decision.¹⁰¹ Granted, the panel’s role in deciding the applicable law is very similar to a national court’s role in making that decision, however, the panel would be relying on internationally-agreed upon set of rules rather than the national laws of individual countries, resulting in much more predictability of

90. Fausto Pocar, *An Introduction to the PCA’s Optional Rules for Arbitration of Disputes Relating to Outer Space Activities*, 38 J. SPACE L. 171, 172 (2012).

91. *Id.*

92. *Id.* at 173.

93. Arbaugh, *supra* note 8, at 837.

94. *Id.*

95. *Id.*

96. *Id.* at 837–838.

97. Pocar, *supra* note 90, at 177.

98. See generally Phillip D. Bostwick, *Going Private with the Judicial System: Making Creative Use of ADR Procedures to Resolve Commercial Space Disputes*, 23 J. SPACE L. 19 (1995) (discussing how creative uses of mediation and arbitration may prove beneficial to both sides of a dispute in private commercial businesses in the space industry).

99. Wong, *supra* note 12, at 465.

100. See generally Outer Space Treaty, *supra* note 48, art. I (“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.”).

101. See, e.g., Shin, *supra* note 22, at 1412 (arguing for the benefits of arbitration procedures, which are more flexible than judicial proceedings).

outcome.¹⁰² A more predictable and friendly environment will encourage and attract increasing investments by private parties, which will lead to more research and scientific advancements in outer-space activities.¹⁰³

Unlike litigation or the current treaties or conventions addressed above, a potential ADR structure could apply to all major outer-space actors, such as states, private entities, and intergovernmental agencies.¹⁰⁴ Furthermore, an “isolated,” well-structured, and predictable ADR process tends to be a more attractive option to states, vis-à-vis submitting themselves to a binding multilateral treaty which requires all disputes to be solved by the ICJ or some other court system.¹⁰⁵ An arbitral structure would also allow for a speedy and final decision with a narrow possibility of appeals.¹⁰⁶ Given that timing plays an important role in space activities—such as time window for landing or atmospheric re-entry—a speedy and final decision is well-received and beneficial in these circumstances.¹⁰⁷ Arbitrating parties will get to pick expert decision-makers (the arbitrators) who can better understand space matters, in contrast to a local judge who, despite her legal expertise, might lack the technical and scientific knowledge about space activities.¹⁰⁸ Additionally, any ADR process—including arbitration—protects the confidentiality of information exchanged, unlike open court sessions.¹⁰⁹ In the current circumstances, the relevant information might involve matters of national security or scientific breakthrough which should obviously be protected, and arbitration provides the best venue for doing so.¹¹⁰

B. An UNICTRAL-Like Arbitral Structure for Outer-Space Disputes

As mentioned in the introduction, this author believes in the efficacy of the well-known arbitral system put in place to address transnational commercial disputes and consequently believes on relying on past experiences in the commercial sphere when formulating an ADR structure for outer-space activities. In order to better understand the following discussion, a brief overview of the current arbitral legal regime follows. The *Convention on the Recognition and Enforcement of Foreign Arbitral Awards* (also known as the “New York Convention” or the “Convention”), signed in 1958, is the foundational international legal agreement for the enforcement of foreign arbitral awards.¹¹¹ The Convention is considered as one of the

102. See generally Marc S. Firestone, *Problems in the Resolution of Disputes Concerning Damage Caused in Outer Space*, 59 TUL. L. REV. 747 (1984) (discussing the need to develop a rational and uniform law for outer space by international organizations).

103. Wong, *supra* note 12, at 463.

104. Arbaugh, *supra* note 8, at 842.

105. FABIO TRONCHETTI, *FUNDAMENTALS OF SPACE LAW AND POLICY* 55 (Joseph N. Pelton ed., 2013).

106. *Id.*

107. Arbaugh, *supra* note 8, at 843.

108. *Id.* at 844.

109. *Id.*

110. Pocar, *supra* note 90, at 179.

111. See generally N.Y. ARB. CONVENTION, *supra* note 20.

most successful multilateral agreements ever signed,¹¹² with more than 150 signatory countries.¹¹³ Briefly stated, the Convention requires signatory states to enforce an arbitral award made in another signatory country,¹¹⁴ so long as none of the exceptions applies.¹¹⁵ The grounds for refusing enforcement are mainly, but not entirely, procedural in nature, and aim to guarantee a fair arbitral process.¹¹⁶

Complementary to the New York Convention, two other relevant legal documents deserve to be addressed. The UN Commission on International Trade Law (UNCITRAL) adopted the first final version of the *Arbitration Rules* in 1976.¹¹⁷ They consist of a comprehensive set of procedural rules which parties can rely on or even adopt for the conduct of an arbitral procedure arising out of commercial disputes.¹¹⁸ Since its adoption, the UNCITRAL Arbitration Rules have been widely used by both institutional and *ad hoc* arbitration procedures; and have been revised in 2010 so that it reflects the needs and expectations of our times.¹¹⁹ Later on, in 1985, the UNCITRAL adopted what became known as the proposed *Model Law on International Commercial Arbitration* (The Model Law).¹²⁰ The Model Law aims to harmonize the national arbitration laws of individual states in order to increase uniformity across states.¹²¹ The Model Law covers all stages of an arbitral procedure, all the way from the initiation of an arbitration and the composition of the arbitral tribunal, to the recognition and enforcement of an arbitral award.¹²² The Model Law has also been a success, reflecting worldwide consensus on key aspects of international arbitral procedures, as adopted in different regions around the globe.¹²³

This author recommends that any future space-oriented ADR structure heavily rely on previous experiences in the commercial sphere, while incorporating the needs of the outer-space community. In fact, an interesting proposal would be to develop a hybrid system, which relies on both the Liability Convention and the UNCITRAL Rules both addressed above. The international enforceability of arbitral awards—by the signatory countries of the New York Convention—provides an excellent guarantee that arbitration awards will be respected. However, the major distinction between the commercial sphere and the outer-space one is, in this author's view, the contractual aspect of the relation between the disputants. When there is a commercial transaction, the partners will enter into a contract before (or while) performing their commercial duties. In this sense, commercial partners will

112. Joseph E. Neuhaus, *Current Issues in the Enforcement of International Arbitration Awards*, 36 U. MIAMI INTER-AM. L. REV. 23, 24 (2004).

113. Contracting States, N.Y. ARB. CONVENTION, <http://www.newyorkconvention.org/countries> (last visited Sept. 11, 2017).

114. United Nations, The New York Convention, art. III. (1958), <http://www.newyorkconvention.org/11165/web/files/original/1/5/15432.pdf>

115. *Id.*, art. V, § 1-2.

116. Neuhaus, *supra* note 112, at 25.

117. *UNCITRAL Arbitration Rules*, UNITED NATIONS COMMISSION ON INTERNATIONAL TRADE LAW, http://www.uncitral.org/uncitral/en/uncitral_texts/arbitration/2010Arbitration_rules.html (last visited Sept. 11, 2017).

118. *Id.*

119. *Id.*

120. *See generally* United Nations Commission on Int'l Trade L., *supra* note 21.

121. Saturnino E. Lucio, *The UNCITRAL Model Law on International Commercial Arbitration*, 17 U. MIAMI INTER-AM L. REV. 313, 313 (1986).

122. *See generally* United Nations Commission on Int'l Trade L., *supra* note 21.

123. *Id.*

have an opportunity to agree to a dispute resolution procedure before, and in anticipation, of any possible future dispute. Subsequently, the act of agreeing to a binding arbitration procedure under the New York Convention happens at a pre-dispute stage. The sequence of events in the outer-space scenario is drastically different in most cases: Because of the different types of disputes that may arise in the outer-space case (i.e., torts claims or property damages) parties are hardly able to agree to submit themselves to arbitration before any dispute arises. It is virtually impossible for a private company to enter into an arbitration agreement with every single potential future plaintiff, simply because it is hard, or even impossible, to anticipate who might be harmed by the companies' actions.

Therefore, based on this author's personal reasoning, the first step would be to formulate an international agreement (probably in the form of a UN-sponsored Convention) where any entity harmed by a foreign party (both States and private actors), in the course of carrying an outer-space activity, would resolve its dispute through an arbitration process. The award of the arbitral tribunal will later be enforced in most countries, pursuant to the New York Convention.¹²⁴ Currently, there is no internationally-agreed upon framework which forces claimants to submit themselves to arbitration;¹²⁵ rather, they are allowed to pursue whatever course they wish, causing some unpredictability and a lack of uniformity. Once this first step is met, the remaining steps to undertake will be a matter of procedure and brainstorm in terms of tailoring an effective dispute resolution procedure.

C. A Hybrid, Space-Oriented, New ADR Structure

The proposal, which is a lenient and flexible one involves a hybrid system bringing aspects from both the Liability Convention and the Model Law. In fact, some authors have suggested a tiered process which involves diplomacy, mediation, and arbitration.¹²⁶ Since outer-space disputes may involve State agencies, a voluntary diplomatic effort to solve the dispute might be suggested as a first step.¹²⁷ However, a complication arises when a private entity and a state agency are involved in the dispute: Formal diplomatic channels are non-existent in this case. In such a scenario, the parties could still agree to mediate the dispute in good faith. If, within a certain period of time, diplomatic efforts (or mediation) fail, then any party could move to request an arbitral tribunal to solve the dispute. Once a request for arbitration has been made, the subsequent arbitration procedural matters could mirror the UNCITRAL's *Arbitral Rules* discussed above.¹²⁸ For example, the procedural matters would involve deciding the number of arbitrators; the location of the arbitration proceeding; the applicable law; and many other details.

A final, significant point to address relates to the tricky choice of law problem addressed above in Section II. It has been suggested that the parties should be free to agree on the applicable substantive law during the arbitration proceeding.¹²⁹

124. See generally N.Y. ARB. CONVENTION, *supra* note 20.

125. As discussed above in Section III, the Liability Convention is binding upon the parties only if they agree to submit themselves to it, after a dispute arises. See Liability Convention, *supra* note 62, art. XIX.

126. Wong, *supra* note 12, at 469.

127. Wong suggests that parties can agree to either negotiate or mediate the dispute, which would both be categorized as falling under "diplomatic relations." See *id.*

128. See generally, UNCITRAL *Arbitration Rules*, *supra* note 117.

129. Wong, *supra* note 12, at 470.

Such a proposal makes sense in the transnational commercial sphere where parties would contract about the applicable substantive law before a dispute arises. It is unlikely parties would reach an agreement post-dispute, as is the case in the outer-space scenario. The alternative to this problem is either for the arbitral tribunal to decide the substantive law based on a clear set of factors, or for the international community to develop a new set of substantive laws relating to potential disputes in outer-space. In either case, current laws need to be modified and tailored in such a way as to fit outer-space disputes.

V. CONCLUSION

This Comment has hopefully served to highlight the need to put more efforts into outer-space-related disputes, and the viable methods to resolve these disputes in a predictable, well structured, manner. Section I briefly addressed the historical development of space exploration; it also compared the military aspect versus the civilian one for these activities, while emphasizing our focus on the privately oriented, civilian, type. Section II expanded on a very essential legal question that still needs to be answered by the legal community before proceeding forward in any space-related ADR structure. Section II also provided some comparison with other non-sovereign territories and international waters, in order to better highlight and explain the issue at hand. Section III elaborated on the different conventions and treaties currently in place. The goal of section III was to inform the reader about the efforts put so far in addressing outer-space activities, while explaining their benefits and drawbacks. By clearly showing the lack of any effective international agreement for the resolution of outer-space disputes, Section III led the way into the need to develop a new ADR-oriented space structure. Section IV aimed to bring together different relevant and effective legal concepts, from different fields of law, in order to make a final proposal. It is very clear at this point that gigantic efforts still need to be made in order to come up with an effective end-result. The road to this end-result is a lengthy and arduous one, however, the earlier the international community begins its work, the better it is for our societies. Science is moving forward so quickly that, if we do not start thinking about these topics, technological developments will outpace the evolution of the law.