

STAR LAWS: CRIMINAL JURISDICTION IN OUTER SPACE

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ABSTRACT

In August 2019, reports emerged of NASA investigating an allegation that an astronaut committed a crime in space. This gives rise to the question: what criminal law is to guide individuals in outer space? The answer has broad consequences because human activity in space is increasing, including with respect to developments in exploration, commercialization, weaponization and tourism, which means there will be new types of extraterrestrial interactions. Space is also relevant for many aspects of human life. Remote sensing technologies can be applied to global health initiatives, agricultural development, environment monitoring, disaster management, education, transportation, communication and humanitarian aid projects. This Article considers the jurisdiction of criminal law in space and challenges readers to consider the effects of nationality, delineation, space tourism and private operators. To

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do so, we identify three categories of potential crimes to which different jurisdictional rules may apply: crimes committed on the International Space Station, crimes committed on commercial space vessels and crimes committed in space other than on a space vessel or the International Space Station. Ultimately, we conclude that existing principles of extraterritorial criminal jurisdiction are not ideal for the unique challenges of space and that development of a specialized jurisdictional regime is necessary.

I. INTRODUCTION

In August 2019, reports emerged NASA was investigating an allegation that an astronaut committed a crime aboard the International Space Station (ISS). Allegedly, the astronaut accessed her estranged spouse's bank account.¹ This leads us to ask: what body of criminal law applies in outer space? In this particular instance, the answer is relatively straightforward because both the alleged perpetrator and alleged victim are United States (US) nationals. Additionally, the alleged conduct took place on the ISS, which is governed by an agreement with specific provisions for criminal jurisdiction. Therefore, US law applies. However, if the victim and perpetrator were of different nationalities, or were dual nationals, or had the conduct taken place elsewhere in space (other than the ISS), the answer might be more complicated. Human activity in space is increasing, and so the question of criminal jurisdiction must be answered.

Between fifty and seventy States are engaged in space activities. The United Nations Committee on the Peaceful Uses of Outer Space has grown from twenty-four member States in 1959 to ninety-five member States in 2020. The Organization for Economic Cooperation and Development (OECD) reports that "the space sector is currently experiencing an innovation-driven paradigm shift."² The OECD further states, "as technology has evolved and states

¹ Brandon Specktor, *The World's First Space Crime May Have Occurred on the International Space Station Last Year*, LIVESCIENCE (Aug. 27, 2019) ("... NASA astronaut Anne McClain was accused by her estranged spouse, Summer Worden, of signing into Worden's personal bank account from a NASA-affiliated computer aboard the ISS. This alleged space invasion of privacy is being investigated by NASA's Office of the Inspector General.").

² ORG. FOR ECON. COOPERATION AND DEV., SPACE AND INNOVATION (9th ed. 2016).

have increasingly recognized the potential of outer space, the range of activities planned for outer space has proliferated.”³

This increased use of space may strain existing legal frameworks, particularly as these frameworks relate to the principles of jurisdiction. Space is relevant to many aspects of human life. For instance, remote sensing technologies can be usefully applied to global health initiatives,⁴ agricultural development,⁵ environmental monitoring,⁶ disaster management,⁷ education,⁸ transportation,⁹ communication¹⁰ and humanitarian aid projects.¹¹ Other research developments in space can also have applications on Earth. “Scratch resistant lenses, temper foam, [and] freeze drying technology” are examples of space technologies adapted for use on Earth.¹² There is also some speculation that outer space “will almost certainly include outer space colonies established, operated, and

³ Steven Freeland, *Up, Up and ... Back: The Emergence of Space Tourism and Its Impact on the International Law of Outer Space*, 6 CHI. J. INT'L L. 1, 5 (2005).

⁴ *Benefits of Space: Global Health*, U.N. OFF. OUTER SPACE AFF., <https://www.unoosa.org/oosa/en/benefits-of-space/global-health.html> (last visited Mar. 5, 2020).

⁵ *Benefits of Space: Agriculture*, U.N. OFF. OUTER SPACE AFF., <http://www.unoosa.org/oosa/en/benefits-of-space/agriculture.html> (last visited Mar. 5, 2020).

⁶ *Benefits of Space: Environment*, U.N. OFF. OUTER SPACE AFF., <http://www.unoosa.org/oosa/en/benefits-of-space/enviroment.html> (last visited Mar. 5, 2020).

⁷ *Benefits of Space: Disaster Management*, U.N. OFF. OUTER SPACE AFF., <http://www.unoosa.org/oosa/en/benefits-of-space/disasters.html> (last visited Mar. 5, 2020).

⁸ *Benefits of Space: Education*, U.N. OFF. OUTER SPACE AFF., <http://www.unoosa.org/oosa/en/benefits-of-space/education.html> (last visited Mar. 5, 2020).

⁹ *Benefits of Space: Transportation*, U.N. OFF. OUTER SPACE AFF., <http://www.unoosa.org/oosa/en/benefits-of-space/transportation.html> (last visited Mar. 5, 2020).

¹⁰ *Benefits of Space: Communication*, U.N. OFF. OUTER SPACE AFF., <http://www.unoosa.org/oosa/en/benefits-of-space/communication.html> (last visited Mar. 5, 2020).

¹¹ *Benefits of Space: Humanitarian Assistance*, U.N. OFF. OUTER SPACE AFF., <http://www.unoosa.org/oosa/en/benefits-of-space/humanitarian-assistance.html> (last visited Mar. 5, 2020).

¹² *Benefits of Space: Research and Development*, U.N. OFF. OUTER SPACE AFF., <http://www.unoosa.org/oosa/en/benefits-of-space/research.html> (last visited Mar. 5, 2020).

populated” by humans.¹³ Human activity in outer space may also bring with it the darker side of human nature, such as its potential for criminal conduct. For example, “space is already a military arena,”¹⁴ despite “efforts to make outer space a demilitarized zone, military use of space has been substantial since the beginning of space exploration.”¹⁵ The confluence of space militarization, space tourism,¹⁶ space exploration, private commercial interests¹⁷ and space mining¹⁸ may create new types of legal interactions and relations “that the treaty regimes have not anticipated.”¹⁹ Further, space is hard. It is a difficult and challenging environment; it is so unlike Earth that traditional notions of jurisdiction may not be ideal in the longer term.

Much like the High Seas, the legal starting point is that space is generally regarded as *res communis*—it belongs to everyone. It is not any one State’s territory. On Earth it is widely recognized that States can assert jurisdiction outside of their territory on a number of bases: the nationality principle, the universality principle, the protective principle and, more controversially, the effects doctrine.²⁰ This is accepted at customary international law²¹ and as a

¹³ Taylor Hardenstein, *In Space, No One Can Hear You Contest Jurisdiction: Establishing Criminal Jurisdiction on the Outer Space Colonies of Tomorrow*, 81 J. AIR L. & COM. 251, 282 (2016).

¹⁴ Edward Finch, *Law and Security in Outer Space: Implications for Private Enterprise*, 11 J. SPACE. L. 107, 110 (1983). See also Michel Bourbonnière & Ricky J. Lee, *Jus ad bellum and ius in bello Considerations on the Targeting of Satellites: The Targeting of Post-Modern Military Space Assets*, 44 ISRAELI BOOK OF HUMAN RIGHTS 167 (2014); Michel Bourbonnière & Ricky J. Lee, *Legality of the Deployment of Conventional Weapons in Earth Orbit: Balancing Space Law and the Law of Armed Conflict*, 18 EUR. J. INT. LAW 873 (2008); Jayan Panthamakkada Acuthan, *China’s Outer Space Programme: Diplomacy of Competition or Co-operation?* 63 CHINA PERSP. 1, 6 (2006); Glenn Harlan Reynolds, *International Space Law in Transformation: Some Observations* 6 CHI. J. INT’L L. 69, 71 (2005).;

¹⁵ Reynolds, *supra* note 14, at 71; see also Finch, *supra* note 14, at 110.

¹⁶ See, e.g., P.J. Blount, *Jurisdiction in Outer Space: Challenges of Private Individuals in Space*, 33 J. SPACE. L. 300, 302 (2007).

¹⁷ See e.g., Finch, *supra* note 14, at 107; Freeland, *supra* note 3, at 3.

¹⁸ See Elizabeth Pearson, *Space Mining: The New Goldrush*, BBC SCI. FOCUS MAG. (Dec. 11, 2018), <https://www.sciencefocus.com/space/space-mining-the-new-goldrush/>; Clive Cookson, *Space Mining Takes Giant Leap from Sci-fi to Reality*, FIN. TIMES (Oct. 19, 2017), <https://www.ft.com/content/78e8cc84-7076-11e7-93ff-99f383b09ff9>.

¹⁹ Blount, *supra* note 16, at 300.

²⁰ See e.g., Danielle Ireland-Piper, *Prosecutions of Extraterritorial Criminal Conduct and the Abuse of Rights Doctrine*, 9 UTRECHT L. R. 68, 68 (2013).

²¹ *Id.*

matter of domestic constitutional law in several States.²² However, this may not be the case for space. Legal jurisdiction on Earth is inherently linked with notions of State sovereignty, but this principle, too, is not entirely applicable in outer space, and may pose challenges for the law of jurisdiction. It is also a key tenet of space law that “space . . . is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means” that could apply on Earth.²³ Therefore, it may be that not all “the classical rules of international law on sovereignty, territory and delimitation” can apply in space.²⁴

For these reasons, this Article considers two questions: (1) what criminal law applies in space and (2) what is the law of extraterritoriality in space? We first briefly explain the principles of extraterritorial jurisdiction in international law and introduce the current foundational framework of space law. We then consider the law of criminal jurisdiction in space and challenges posed, including challenges around nationality, delineation, space tourism and private operators. In so doing, it appears there are three categories of potential crimes to which different jurisdictional rules may apply: (1) crimes committed on the ISS; (2) crimes committed on commercial space vessels; and (3) crimes committed in space in places other than on a space vessel or the ISS. As a preliminary matter, we use the terms “space” and “outer space” interchangeably, not as a matter of any scientific accuracy, but simply by way of description.

²² See e.g., *Republic of Italy v Union of India*, (2013) 4 SCC 721, 745 (India); *GVK Indus. Ltd. v The Income Tax Officer*, (2011) 3 SCR 366, 367 (India); *XYZ v The Commonwealth* (2006) 227 CLR 532, 535-36 (Austl.); *EEOC v Arabian American Oil Co.*, 499 U.S. 244, 248 (1991).

²³ *Treaty on Principles Governing the Activities in the Exploration and Use of Outer Space, Including the Moon and other Celestial Bodies* art. II, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 [hereinafter *Outer Space Treaty*].

²⁴ Ricky J. Lee, *Article II of the Outer Space Treaty: Prohibition of State Sovereignty, Private Property Rights, or Both*, 11 AUSTL. J. INT'L L. 128, 128 (2004).

II. BACKGROUND

A. *Introducing the Laws of Outer Space*

There are currently five key treaties governing space, known colloquially as: the Outer Space Treaty;²⁵ the Rescue Agreement;²⁶ the Liability Convention;²⁷ the Registration Convention;²⁸ and the Moon Agreement.²⁹ As of January 2019, the Outer Space Treaty had 109 ratifications and twenty-three signatures, the Rescue Agreement had ninety-eight ratifications and twenty-three signatures (plus two declarations accepting rights and obligations), the Liability Convention had ninety-six ratifications and nineteen signatures (plus three declarations accepting rights and obligations), the Registration Convention had sixty-nine ratifications and three signatures (plus three declarations accepting rights and obligations) and the Moon Agreement had eighteen ratifications and four signatures.³⁰ We now briefly summarize these five key treaties.

In essence, the Outer Space Treaty is an exhortation to good behavior: the exploration and use of outer space is to be free, in the interests of all countries³¹ and not subject to any claims of sovereignty.³² The Moon and other celestial bodies are to be used only for “peaceful purposes.”³³ States are prohibited from placing weapons of mass destruction in orbit or in outer space and the militarization of celestial bodies is forbidden.³⁴ States are responsible for national

²⁵ Outer Space Treaty, *supra* note 23.

²⁶ Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, Apr. 22, 1968, 672 U.N.T.S. 119 [hereinafter Rescue Agreement].

²⁷ Convention on International Liability for Damage Caused by Space Objects arts. II-III, Mar. 29, 1972, 24 U.S.T. 2389, 961 U.N.T.S. 187 [hereinafter Liability Convention].

²⁸ Convention on Registration of Objects Launched into Outer Space art. I, Jan. 14, 1975, 28 U.S.T. 695, 1023 U.N.T.S. 15 [hereinafter the Registration Convention].

²⁹ Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, Dec. 18, 1979, 1363 U.N.T.S. 3 [hereinafter Moon Agreement].

³⁰ Comm. on the Peaceful Uses of Outer Space, Status of International Agreements Relating to Activities in Outer Space as at 1 January 2019, U.N. Doc. A/AC.105/C.2/2019/CRP.3 (2019).

³¹ Outer Space Treaty, *supra* note 23, art. I.

³² *Id.* at art. II.

³³ *Id.* at art. IV.

³⁴ *Id.*

space activities and are liable for damage caused by their space objects.³⁵

The Rescue Agreement requires States to take all possible steps to rescue and assist astronauts in distress,³⁶ promptly return them to their launching State³⁷ and provide assistance to launching States in recovering space objects that return to Earth outside their territory.³⁸

Under the Liability Convention, which also provides for procedures for the settlement of claims for damages, a launching State is liable to pay compensation for damage caused by its space objects³⁹ and liable for damage due to its faults in space.⁴⁰

The Registration Convention requires States, and some international intergovernmental organizations, to establish national registries and provide information on their space objects to the Secretary-General of the United Nations.⁴¹ According to the United Nations Office for Outer Space Affairs, eighty-nine percent of “all satellites, probes, landers, crewed spacecraft and space station flight elements launched into Earth orbit or beyond” have been registered.⁴² However, the launch of large constellations of smaller satellites and the trend towards miniaturization may make future registrations challenging.⁴³ Registration also occurs voluntarily in accordance with General Assembly Resolution 1721B⁴⁴ and is still actively being used by States not party to the Registration Convention.

In large part, the Moon Agreement simply reaffirms and elaborates on many of the provisions of the Outer Space Treaty relating to the Moon and other celestial bodies. For instance, it claims that

³⁵ *Id.* at art. VII.

³⁶ Rescue Agreement, *supra* note 26, art. 2.

³⁷ *Id.* at art. 4.

³⁸ *Id.* at art. 5.

³⁹ Liability Convention, *supra* note 27, art. II.

⁴⁰ *Id.* at art. III.

⁴¹ *Id.* at art. II.

⁴² *United Nations Register of Objects Launched into Outer Space*, U.N. OFF. OUTER SPACE AFF., <http://www.unoosa.org/oosa/en/spaceobjectregister/index.html> (last visited Mar. 13, 2019).

⁴³ See Steven Freeland, *Newspace, Small Satellites, and Law: Finding a Balance Between Innovation, a Changing Space Paradigm, and Regulatory Control*, in *NEWSPACE COMMERCIALIZATION AND THE LAW* 107-123 (M.T. Ahmad & J. Su eds., 2017).

⁴⁴ G.A. Res. 1721 (XVI) B, *International Cooperation in the Peaceful Uses of Outer Space* (Dec. 20, 1968).

the Moon and celestial bodies can only be used “exclusively for peaceful purposes”⁴⁵ and that the Moon and its natural resources are the common heritage of humankind.⁴⁶ It also calls on parties to establish an international regime to govern the exploitation of resources when such exploitation is about to become feasible.⁴⁷

The International Space Station Intergovernmental Agreement (IGA) is also important in the context of criminal law jurisdiction.⁴⁸ The IGA is an international agreement signed on January 29, 1998 by governments involved in the ISS project. Although not a general treaty, the IGA is a rare “positive source of criminal law”⁴⁹ in outer space, and so will be considered in further detail below.

In addition to the five space treaties, there are also five key declarations and principles relating to space: the Declaration of Legal Principles;⁵⁰ the Broadcasting Principles;⁵¹ the Remote Sensing Principles;⁵² the Nuclear Power Source Principles;⁵³ and the Benefits Declaration.⁵⁴ We will not go into these in detail, but we will mention them for completeness.

B. *Introducing Extraterritorial Jurisdiction*

Jurisdiction is a claim of authority and a “technical means of establishing public authority.”⁵⁵ It follows that considering jurisdictional practice is a means of gaining insight into the nature of public authority. The Australian Oxford Dictionary, for example, defines “jurisdiction” as the administration of justice, a legal or other authority and the extent of such authority.⁵⁶ Jurisdiction, in a strict

⁴⁵ Moon Agreement, *supra* note 29, art. 3.

⁴⁶ *Id.* at art. 11(1).

⁴⁷ *Id.* at art. 11(5)-(6).

⁴⁸ Agreement Among the Government of Canada, Governments of Member States of the European Space Agency, the Government of Japan, the Government of the Russian Federation, and the Government of the United States of America Concerning Cooperation on the Civil International Space Station, Jan. 29, 1998, 1998 U.S.T. LEXIS 303, T.I.A.S. No. 12927 [hereinafter IGA].

⁴⁹ Blount, *supra* note 16, at 312.

⁵⁰ G.A. Res. 1962 (XVIII), at 15 (Dec. 13, 1963).

⁵¹ G.A. Res. 37/92, at 98-99 (Dec. 10, 1982).

⁵² G.A. Res. 41/65, at 1-4 (Dec. 3, 1986).

⁵³ G.A. Res. 47/68, at 1-6 (Dec. 14, 1992).

⁵⁴ G.A. Res. 51/112, at 1-3 (Dec. 13, 1996).

⁵⁵ Shaunnagh Dorsett & Shaun McVeigh, *Jurisprudences of Jurisdiction: Matters of Public Authority*, 23 GRIFFITH L. R. 569, 585 (2014).

⁵⁶ AUSTRALIAN CONCISE OXFORD DICTIONARY 768 (5th ed. 2009).

legal sense, can be prescriptive, enforcing or adjudicative. Prescriptive jurisdiction might refer to a statute prescribing legal authority over a particular conduct by labeling it as an offense. Enforcement jurisdiction might refer to the legal authority to arrest, detain or punish. Adjudicative jurisdiction describes the legal authority of courts to adjudicate on a given matter. This means all arms of government—the legislature, the executive and the judiciary—are involved in the development and practice of jurisdictional norms.

Historically, geographical conceptions of territory were the defining pillar of international law, including international law on legal jurisdiction. In the 1600s, the Treaty of Westphalia conceptualized a State's power as ending at its territorial borders.⁵⁷ In this way, regardless of economic or military disparities, "each State possessed exclusive jurisdiction within its own territory."⁵⁸ Assertions of extraterritorial jurisdiction tended to occur as an exception, rather than the norm. However, by the mid-1900s the "heyday" of territorial jurisdiction had begun its demise.⁵⁹ As economies became increasingly interconnected, there was increased interest in regulating cross-border activities, such as transnational crime and the activities of multinational corporations.⁶⁰ In some cases, the interest in extraterritoriality became associated with attempts to enforce human rights.⁶¹ In other cases, assertions of extraterritorial jurisdiction more closely resembled unilateral projection of foreign policy objectives.⁶²

In 1927, the Permanent Court of International Justice (PCIJ) delivered judgment in the *Lotus* case.⁶³ This decision was a legal turning point, although it remains the subject of academic criticism. The PCIJ considered whether Turkey, in instituting criminal proceedings against a French national over a collision on the high seas between a Turkish ship and a French ship, which resulted in the death of Turkish nationals, acted in conflict with international

⁵⁷ Leo Gross, *The Peace of Westphalia, 1648-1948*, 42 AM. J. INT'L L. 20, 28–29 (1948).

⁵⁸ Austen Parrish, *The Effects Test: Extraterritoriality's Fifth Business*, 61 VAND. L. REV. 1455, 1464 (2008).

⁵⁹ *Id.* at 1467.

⁶⁰ *Id.* at 1469.

⁶¹ *Id.* at 1470.

⁶² *Id.*

⁶³ The S.S. *Lotus* Case (Fr. v. Turk.), Judgment, 1927 P.C.I.J. (ser. A) No. 10 (Sept. 7).

law.⁶⁴ The French government submitted that the Turkish courts, in order to have jurisdiction, must be able to identify a specific title to jurisdiction given to Turkey in international law.⁶⁵ Conversely, the Turkish government took the view that it inherently had jurisdiction, provided such jurisdiction did not come into conflict with a principle of international law.⁶⁶ The PCIJ, while observing that “jurisdiction is certainly territorial,”⁶⁷ found that:

It does not, however, follow that international law prohibits a State from exercising jurisdiction in its own territory, in respect of any case which relates to acts which have taken place abroad, and in which it cannot rely on some permissive rule of international law. Such a view would only be tenable if international law contained a general prohibition⁶⁸

The Court concluded,

Far from laying down a general prohibition to the effect that States may not extend the application of their laws and the jurisdiction of their courts to persons, property and acts outside their territory, it leaves them in this respect a *wide measure of discretion which is only limited to certain cases by prohibitive rules*; as regards other cases, every State remains free to adopt the principles which it regards as best and most suitable.⁶⁹

In this way, the PCIJ established a presumption in favor of a State’s extraterritorial jurisdiction, in the absence of a prohibitive rule. Some commentators attribute the development of the “effects test” to the decision in the *Lotus* case having undermined “territoriality as a limiting constraint on legislative jurisdiction.”⁷⁰ Cedric Ryngaert has said that the judgment is “nowadays often considered as obsolete”⁷¹ and F.A. Mann argues the decision “cannot claim to

⁶⁴ *Id.* at 5.

⁶⁵ *Id.* at 18.

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ *Id.* at 19.

⁶⁹ *S.S. Lotus*, 1927 P.C.I.J. at 19 (emphasis added).

⁷⁰ David Gerber, *Beyond Balancing: International Law Restraints on the Reach of National Laws*, 10 YALE J. INT’L L. 185, 196-97 (1984).

⁷¹ CEDRIC RYNGAERT, JURISDICTION IN INTERNATIONAL LAW 34 (2d ed. 2015).

be good law.”⁷² Customary international law based on actual State practice would point towards extraterritorial jurisdiction being prohibited unless specifically permitted, rather than the permissive approach in *Lotus*.⁷³ Ian Brownlie described the sufficiency of a base of jurisdiction as being “relative to the rights of other States and not as a question of basic competence.”⁷⁴ Similarly, James Crawford has said that the “sufficiency of grounds for jurisdiction is normally considered relative to the rights of other States.”⁷⁵

In any event, following the decision in *Lotus*, domestic courts began to grapple with the consequences of assertions of extraterritorial jurisdiction by their State. By the end of the twentieth and beginning of the twenty-first centuries, a number of treaties called on States to assert extraterritorial jurisdiction.⁷⁶ For example, the 1989 Convention on the Rights of the Child (CRC) and the Optional Protocol on the Sale of Children, Child Prostitution and Child Pornography together require parties to criminalize child prostitution whether or not the acts occur domestically or extraterritorially.⁷⁷ The major international treaties on anti-corruption all either require or permit a degree of extraterritorial jurisdiction.⁷⁸ Similarly, international treaties relating to terrorism and torture also permit some assertions of extraterritorial jurisdiction. For example, the International Convention for the Suppression of Terrorist Bombings calls upon parties to assert jurisdiction on the basis of both passive

⁷² Frederick Alexander Mann, *The Doctrine of Jurisdiction in International Law*, in KARL M. MEESEN, EXTRATERRITORIAL JURISDICTION IN THEORY AND PRACTICE 64, 66 (1996).

⁷³ CEDRIC RYNGAERT, JURISDICTION IN INTERNATIONAL LAW 26 (2008).

⁷⁴ IAN BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 299 (7th ed. 2008).

⁷⁵ JAMES CRAWFORD, BROWNLIE'S PRINCIPLES OF PUBLIC INTERNATIONAL LAW 457 (8th ed. 2012).

⁷⁶ DANIELLE IRELAND-PIPER, ACCOUNTABILITY IN EXTRATERRITORIALITY: A COMPARATIVE AND INTERNATIONAL LAW PERSPECTIVE 8–14 (2017).

⁷⁷ See Optional Protocol to the Convention on the Rights of the Child on the Sale of Children, Child Prostitution and Child Pornography arts. 1, 5, May 5, 2000, 2171 U.N.T.S. 227.

⁷⁸ See, e.g., United Nations Convention Against Corruption, Dec. 9, 2003, S. TREATY DOC. NO. 109-06, 43 I.L.M. 37; Additional Protocol to the Criminal Law Convention on Corruption, May 15, 2003, Eur. T.S. No. 191; OECD Convention on Combating the Bribery of Foreign Public Officials in International Business Transactions, Dec. 17, 1997, S. TREATY DOC. NO. 105-43; Inter-American Convention Against Corruption, Mar. 29, 1996, S. TREATY DOC. NO. 105-39, 35 I.L.M. 724.

and active nationality⁷⁹ and the International Convention for the Suppression of the Financing of Terrorism calls upon parties to assert active nationality jurisdiction.⁸⁰ The Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment also permits States to exercise active nationality jurisdiction and passive nationality, where a State deems it to be “appropriate.”⁸¹

Many States now have domestic legislation with extraterritorial reach. By way of example, States as diverse as Australia,⁸² India,⁸³ Singapore,⁸⁴ Indonesia,⁸⁵ Zimbabwe,⁸⁶ Iraq,⁸⁷ Russia,⁸⁸ France,⁸⁹ the United Kingdom,⁹⁰ Mexico,⁹¹ Canada,⁹² the US,⁹³ Japan,⁹⁴ Israel,⁹⁵ Thailand,⁹⁶ China⁹⁷ and Vietnam⁹⁸ have at least some legislative provisions with extraterritorial effect. Geographical conceptions of territory are “becoming a less salient feature of the international legal landscape.”⁹⁹ States are acting on treaty

⁷⁹ International Convention for the Suppression of Terrorist Bombings art. 6, Dec. 15, 1997, 2149 U.N.T.S. 256.

⁸⁰ International Convention for the Suppression of the Financing of Terrorism art. 7(1), Dec. 9, 1999, 2178 U.N.T.S. 197.

⁸¹ Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment art. 5, Dec. 10, 1984, 1465 U.N.T.S. 85.

⁸² See, e.g., *Criminal Code Act 1995* (Cth) s 15 (Austl.).

⁸³ See, e.g., Indian Penal Code, No. 45 of 180, PEN. CODE (1860) (India).

⁸⁴ See, e.g., Penal Code (2008 rev. ed.) s 3 (Sing.).

⁸⁵ See, e.g., Penal Code of Indonesia (1982) art. 4 (Indon.). Note that significant changes to Penal Code of Indonesia are expected in late 2019.

⁸⁶ See, e.g., Criminal Law (Codification and Reform) Act (2004) s 5 (Zim.).

⁸⁷ See, e.g., Criminal Code 1969 ss 2-4 (Iraq).

⁸⁸ See, e.g., UGOLOVNIYI KODEKS ROSSIISKOI FEDERATSII [Criminal Code] art. 12 (Russ.).

⁸⁹ See, e.g., CODE PENAL [C. PEN.] [PENAL CODE] art. 113(6)-(12) (Fr.).

⁹⁰ See, e.g., Bribery Act 2010, c. 23, s. 12 (Eng.).

⁹¹ See, e.g., Código Penal Federal [CPF], art. 4, Diario Oficial de la Federación [DOF] 14-08-1931 (Mex.).

⁹² See, e.g., Canada Criminal Code, R.S.C. 1985, c C-46, s 7(4.1) (Can.).

⁹³ See, e.g., 18 U.S.C. § 3261 (2018).

⁹⁴ See, e.g., KEIHŌ [PEN. C.] 1907 art. 3-5 (Japan).

⁹⁵ See, e.g., Penal Law, 5737-1977, §§ 13-17 (1977-78) (Isr.).

⁹⁶ See, e.g., Criminal Code (1956) ss 7-8 (Thai).

⁹⁷ See, e.g., [Criminal Law of the People's Republic of China] (promulgated by Order No. 5 of the Chairman of the Standing Comm. Nat'l People's Cong., July 6, 1979, effective Jan. 1, 1980), art. 7 & 8, 1980 STANDING COMM. NAT'L PEOPLE'S CONG. GAZ. (China).

⁹⁸ See, e.g., Penal Code art 6 (Viet.).

⁹⁹ Michael Byers, *Abuse of Rights: An Old Principle, A New Age*, 47 MCGILL L.J. 389, 424 (2002).

obligations, reacting to world events or seeking to achieve political objectives.¹⁰⁰

As noted at the outset, customary law recognizes a number of bases on which a nation State can assert extraterritorial jurisdiction. Under customary international law, States are entitled to exercise jurisdiction on three main bases: territoriality, nationality and universality.¹⁰¹

In short, the territoriality principle may be invoked where conduct either takes place within a State's borders, known as subjective territoriality, or the effects of the conduct are felt within the State's borders, known as objective territoriality.¹⁰² An example of objective territorial jurisdiction can be seen in a hypothetical murder on the border between two States, State *A* and State *B*. A gun is fired across the border from State *A* into State *B*, where it causes injury and death. Although, the trigger was pulled in State *A*, the injury from the bullet occurred in State *B*. In that scenario, State *B* may exercise objective territorial jurisdiction.¹⁰³ In theory, this scenario could take place between space colonies or space vessels.

The nationality principle can provide a State with grounds for jurisdiction where a victim (passive nationality) or a perpetrator (active nationality) is a national of that State. An example of passive nationality jurisdiction would be a State *A* legislating to make it an offence to recklessly or intentionally harm, commit manslaughter or seriously injure a State *A* citizen or resident anywhere in the world.¹⁰⁴ A common example of an assertion of active nationality jurisdiction can be seen in child sex offence legislation around the world, as mentioned at the outset. State *A* may legislate to criminalize sexual activities between its nationals and children, regardless of the jurisdiction in which the offence takes place.¹⁰⁵

The universality principle is reserved for conduct recognized as criminal under international law, such as piracy, genocide and crimes against humanity. Unlike other grounds of extraterritorial jurisdiction, which demand some connection with the regulating

¹⁰⁰ See Danielle Ireland-Piper, *Extraterritorial Criminal Jurisdiction: Does the Long Arm of the Law Undermine the Rule of Law?* 13 MELB. J. INT'L L. 122 (2012).

¹⁰¹ *Id.* at 130.

¹⁰² *Id.*

¹⁰³ IRELAND-PIPER, *supra* note 76, at 23.

¹⁰⁴ *Id.* at 25.

¹⁰⁵ *Id.*

State (such as the nationality of the perpetrator or the victim), this principle provides every State with a basis to prosecute certain international crimes. An example can be seen in the French prosecution between 2013 and 2014, of Pascal Simbikangwa, a Rwandan national, for the crimes of complicity in genocide and complicity in crimes against humanity.¹⁰⁶ The offences, for which a French court found Mr. Simbikangwa guilty, took place in Rwanda in 1994.¹⁰⁷ Rather than refer cases to the International Criminal Tribunal of Rwanda, France prosecuted the crimes under French legislation with extraterritorial reach.¹⁰⁸

The scope of universal jurisdiction is conceived of in two different ways: conditional and absolute. A conditional conception of universal jurisdiction requires the presence of the accused in the prosecuting State.¹⁰⁹ An absolute conception, in contrast, may not require the presence of the accused.¹¹⁰ This is sometimes described as universal jurisdiction in absentia and is controversial and not considered to be widely accepted.¹¹¹ The potential risks in space that could potentially involve universal jurisdiction could be military activities involving grave breaches of international humanitarian law and armed conflict, or acts of space piracy, if, in the future, private operators gain access to space travel.

International law also recognizes a “protective principle,” wherein a State can assert jurisdiction over foreign conduct that threatens its national security. The protective principle has been used to prosecute extraterritorial offences relating to counterfeiting

¹⁰⁶ Tracy French et al., *Criminal Courts and Tribunals*, 20 HUMAN RIGHTS BRIEF 69, 71 (2013).

¹⁰⁷ See, e.g., Kim Willshar, *Rwanda Former Spy Chief Pascal Simbikangwa Jailed Over Genocide*, THE GUARDIAN (Mar. 15, 2014), <http://www.theguardian.com/world/2014/mar/14/rwanda-former-spy-chief-pascal-simbikangwa-jailed-genocide>; *Rwanda Ex-spy chief Pascal Simbikangwa Jailed in France*, BBC NEWS, Mar. 14, 2014), <http://www.bbc.com/news/world-africa-26587816>; French et al., *supra* note 106, at 71.

¹⁰⁸ See IRELAND-PIPER, *supra* note 76, at 31-32.

¹⁰⁹ Helena Gluzman, *On Universal Jurisdiction – Birth, Life and a Near-Death Experience*, BOCCONI SCH. OF L. STUDENT-EDITED PAPERS (Paper No. 2009-08/EN), 2009, at 4. See also the discussion of “subsidiary universality” in Neil Boister, *Transnational Criminal Law?* 14 Eur. J. of Int'l. L. 953, 964 (2003).

¹¹⁰ See Gluzman, *supra* note 109, at 4.

¹¹¹ For a more comprehensive discussion of universal jurisdiction in absentia, see Mohamed M. El Zeidy, *Universal Jurisdiction in Absentia: Is It a Legal Valid Option for Repressing Heinous Crimes?* 37 INT'L. LAW. 835 (2003).

currency, desecration of flags, economic crimes, forgery of official documents such as passports and visas and political offences (such as treason).¹¹² Foreseeably, this ground of jurisdiction could occur if false passports or permissions were used by persons travelling in (or to) outer space. There is also some support for an “effects principle,” which gives jurisdiction over extraterritorial conduct, the effects of which are felt by a State. Examples of claims of effects jurisdiction can be seen in anti-trust and competition laws, including by the US,¹¹³ Argentina, Mexico, China and in the European Community.¹¹⁴ Effects doctrine jurisdiction is complicated and fraught with the risk of over-reach, and the same would likely be true of space given the interconnectedness of space activities and the known—and as yet unknown—consequences or “effects” of space activities for activities on Earth.

Extraterritorial criminal jurisdiction can be a useful tool in regulating offences occurring outside national borders, so as to avoid impunity and to realize global values.¹¹⁵ However, there are also a number of concerns about unilateral exercises of extraterritorial jurisdiction, including the view that it can be undemocratic, undermine meaningful multilateralism and might lead to piecemeal approaches to shared problems and the fragmentation of international law.¹¹⁶ Some of the challenges in regulating assertions of extraterritorial jurisdiction also stem from the fact there is no clear hierarchy of jurisdiction at international law and this can lead to tensions between States.¹¹⁷ Further, the regulation of extraterritoriality has not kept pace with its increased exercise. Very little

¹¹² See IRELAND-PIPER, *supra* note 76, at 33.

¹¹³ See, e.g., *American Banana Co v. United Fruit Co.*, 213 U.S. 347 (1909); *United States v. Aluminium Company of America*, 148 F.2d 416 (1944). See also Deborah Senz & Hilary Charlesworth, *Building Blocks: Australia's Response to Foreign Extraterritorial Legislation*, 2 MELB. J. INT'L L. 69, 70 (2001).

¹¹⁴ ERIK NEREP, EXTRATERRITORIAL CONTROL OF COMPETITION UNDER INTERNATIONAL LAW 281-282 (1983).

¹¹⁵ CEDRIC RYNGAERT, UNILATERAL JURISDICTION AND GLOBAL VALUES 53-54 (2015).

¹¹⁶ See, e.g., Austen Parrish, *Reclaiming International Law from Extraterritoriality*, 93 MINN. L. REV. 815 (2009); Austen Parrish, *The Effects Test: Extraterritoriality's Fifth Business*, 61 VAND. L. REV. 1455 (2008).

¹¹⁷ See, e.g., Devirup Mitra, *India, Italy Spar Over Marines Issue Again as Ad-hoc Tribunal Reviews Enrica Lexie Case*, THE WIRE (Mar. 30, 2016), <http://thewire.in/2016/03/30/india-italy-spar-over-marines-issue-again-as-ad-hoc-tribunal-reviews-enrica-lexie-case-26752/> (describing the tension in relations between India and Italy as a result of competing assertions of jurisdiction in the Italian Marines Case).

analysis has been undertaken on the adequacy of the ways in which jurisdiction is regulated in relation to the interests of individual persons before domestic courts, rather than the interests of States in relation to each other. In many ways, the system is “dominated by sovereignty . . . law enforcement and the objectification of individuals as criminals.”¹¹⁸ As Ireland-Piper has observed in the context of extraterritorial jurisdiction over criminal conduct on Earth, reliance on extraterritorial jurisdiction may have the following consequences:

- An accused person may be subject to multiple prosecutions for the same conduct, with no foreseeable end point because the principle of double-jeopardy only applies within a State and not as between States;¹¹⁹
- Persons may be unable to know or ascertain each and every law in each and every State that may have grounds for jurisdiction over their conduct, creating legal uncertainty; and
- Given that a country other than the jurisdiction in which an offence occurred may assert jurisdiction and seek to prosecute, plea bargains and a government’s promises of amnesties may be undermined.¹²⁰

Technology, including the internet and other communications technologies, also pose particular challenges for traditional conceptions of the “rules” of extraterritoriality. Dan Svantesson has considered this issue in this specific context of internet jurisdiction. In his view, the complexity of jurisdictional competence could be resolved by reference to a rule that jurisdiction may only be exercised in three circumstances: (1) there is a substantial connection between the matter and the State seeking to exercise jurisdiction; (2) the State seeking to exercise jurisdiction has a legitimate interest in the matter; and (3) the exercise of jurisdiction is reasonable given the proportionality between the State’s legitimate interests and

¹¹⁸ Neil Boister, *Transnational Criminal Law?* 14 EUR. J. INT’L L. 953, 959 (2003).

¹¹⁹ See Human Rights Comm., *A.P. v. Italy*, Com. No. 204/1986, U.N. Doc. CCPR/C/OP/2 (Nov. 2, 1987).

¹²⁰ IRELAND-PIPER, *supra* note 76, at 8, 185.

other competing interests.¹²¹ In some ways, the internet has parallels with outer space because both pose challenges to traditional notions of geographically-bound legal systems. However, the question as to how to resolve competing claims in scenarios where international tensions run high—such as space—remains unresolved so far.

In essence, it is possible that the problems with extraterritorial criminal jurisdiction on Earth may follow assertions of extraterritoriality into space. This points to the need to develop “fresh eyes” on the question of extraterritoriality and a specialist regime for jurisdiction in space. Notwithstanding that, the existing law on jurisdiction in the specific context of space is now considered.

III. JURISDICTION IN OUTER SPACE

A. *The Outer Space Treaty*

As a starting point, and as noted above, Article I of the Outer Space Treaty provides that the “exploration and use of outer space, including the moon and other celestial bodies . . . shall be the province of all [hu]mankind.”¹²² Under Article II, space is not “subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.”¹²³

P.J. Blount has argued that, taken together, Article VI and Article VIII of the Outer Space Treaty imply that States have the authority to assert jurisdiction over individuals in space.¹²⁴ Specifically, Article VI indicates the activities of non-government entities require authorization and supervision by a State.¹²⁵ Article VIII provides that: “[o]wnership of objects launched into outer space . . . is not affected by their presence in outer space . . . or by their return to the Earth” and that 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*

¹²¹ Dan Jerker B. Svantesson, *A New Legal Framework for the Age of Cloud Computing*, THE CONVERSATION (Feb. 3, 2015), <http://theconversation.com/a-new-legal-framework-for-the-age-of-cloud-computing-37055>.

¹²² Outer Space Treaty, *supra* note 23, art. I.

¹²³ *Id.* at art. II.

¹²⁴ Blount, *supra* note 16, at 312.

¹²⁵ Outer Space Treaty, *supra* note 23, art. VI.

thereof.”¹²⁶ Within the meaning of the provision, “thereof” seems to mandate that a State maintain jurisdiction over any personnel on board the spacecraft, regardless of that person’s nationality. This apportionment of control parallels the basic conventions of “flagship” jurisdiction.

As a practical matter, Article VIII’s jurisdictional provision draws a distinction between criminal acts carried out onboard a spacecraft and criminal acts carried out outside any spacecraft or space object.¹²⁷ In the latter case, this drafting decision may leave regulatory gaps amongst the treaties.

Article III of the Outer Space Treaty provides that international law applies to any exploration or use of outer space.¹²⁸ Given that international law recognizes extraterritorial jurisdiction, it follows that the Outer Space Treaty’s jurisdictional mandate exceeds the nationality principle in order to encompass transactions arising in space. However, because “personnel” is undefined, it remains unclear whether the regulation applies to citizens travelling, for example, as space tourists rather than on official State business. As a result, this ambiguity will likely require further elucidation in the future.

B. The IGA

The IGA sets forth express provisions governing jurisdiction over criminal matters in outer space.¹²⁹ The provisions only apply onboard the ISS and bind only the “Partner States.” Article 22(1), titled “Criminal Jurisdiction” provides for nationality-based jurisdiction and directs that “Canada, the European Partner States, Japan, Russia, and the US may exercise criminal jurisdiction over personnel in or on any flight element who are their respective nationals.”¹³⁰ This is an example of active-nationality jurisdiction.

Article 22(2) sets forth a narrow basis for passive nationality jurisdiction and requires that the “Partner State” of which the perpetrator is a national either “concur” in such exercise; or, in the alternative, fails to provide assurances that it will prosecute the

¹²⁶ *Id.* at art. VIII (emphasis added).

¹²⁷ *Id.*

¹²⁸ *Id.* at art. III.

¹²⁹ IGA, *supra* note 48.

¹³⁰ *Id.* at art. 22(1).

perpetrator itself.¹³¹ The latter, passive nationality jurisdiction based on an absence of domestic prosecution parallels “unwilling or unable” jurisdiction. Article 22(2)’s formulation of passive nationality jurisdiction hinges on the specific type of conduct under question. Namely, the provision differentiates between misconduct in orbit that “affects the life or safety of a national of another Partner State or . . . occurs in or on or causes damage to the flight element of another Partner State. . . .”¹³² In order for the second strain of misconduct to fall within the regulatory ambit of Article 22, Partner States must consult with each other regarding “respective prosecutorial interests” before the wronged entity may attempt to exercise criminal jurisdiction over the alleged offender.¹³³ Following the prosecutorial conference, the wronged Partner State may acquire criminal jurisdiction over the perpetrator either by express conferral from the perpetrator’s native Partner State or as a matter of law if the perpetrator’s native Partner State fails to provide assurances that it will launch a domestic prosecution.¹³⁴

In the context of mutual assistance, Article 22(3) of the IGA provides that its terms may be replaced with an applicable extradition treaty if the domestic law of the relevant State requires such an agreement.¹³⁵ Article 22(3) also contemplates the application of domestic law where “extradition shall be subject to the procedural provisions and the other conditions of the law of the requested Partner State.”¹³⁶ Further, each “Partner State” must, subject to its national laws and regulations, aid other Partner States in mitigating any harm cause by the alleged misconduct.¹³⁷ One scholar has argued that Article 22 should be the “foundation on which humanity will base all future outer space jurisdiction.”¹³⁸ For example, should colonization of Mars become a reality, Article 22 may provide a model framework for adjudicating criminal conduct occurring on foreign planets.¹³⁹

¹³¹ *Id.* at art. 22(2).

¹³² *Id.*

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ IGA, *supra* note 48, art. 22(3).

¹³⁶ *Id.* at art. 22(3).

¹³⁷ *Id.* at art. 22(2).

¹³⁸ Hardenstein, *supra* note 13, at 282.

¹³⁹ *Id.*

However, Article 22 is not without its critics; the embedded passive nationality principle is controversial, as many of the contemporary problems with Earthly extraterritorial jurisdiction¹⁴⁰ (such as competing claims to jurisdiction, overlooking of the procedural rights of an accused in favor of the jurisdictional rights of States, and that the principle of double-jeopardy only applies within a State and not as between them)¹⁴¹ also arise in exercises of extraterritorial jurisdiction into space. While most assertions of extraterritorial jurisdiction derive from the premise that terrestrial law maintains interstellar applicability, they often fail to consider the vast temporal, spatial and financial realities of interstellar regulation.

C. *The International Criminal Court*

While there are no technical restrictions on the jurisdiction of the International Criminal Court (ICC) extending into outer space, various practical factors, such as time and distance, may impede enforcement.¹⁴² Hypothetically speaking, the ICC's jurisdiction on foreign planets would mirror its Earthly expanse with respect to crimes of genocide; crimes against humanity; war crimes; and the crime of aggression.¹⁴³ It would also only apply if: the "State on the territory of which the conduct in question occurred or, if the crime was committed on board a vessel or aircraft, the State of registration of that vessel or aircraft" was a State Party; or where, "the State of which the person accused of the crime is a national is a

¹⁴⁰ To explore examples of contemporary issues surrounding extraterritorial jurisdiction on Earth include competing claims to jurisdiction, neglect of the accused's procedural rights in favor of the State's jurisdictional rights and the limited applicability of double-jeopardy, see Human Rights Committee, *supra* note 119. For a more detailed discussion of the problems associated with assertions of extraterritorial jurisdiction, see Danielle Ireland-Piper, *The Enrica Lexie and St. Antony: A Voyage into Jurisdictional Conflict* 14 QUT L. REV. (2014); Danielle Ireland-Piper, *Abuse of Process in Cross Border Cases: Moti v The Queen*, 12 QUT L. & JUST. J. (2012); Ireland-Piper, *supra* note 100; Ireland-Piper, *supra* note 18.

¹⁴¹ See Human Rights Comm., *A.P. v. Italy, Com. No. 204/1986*, U.N. Doc. CCPR/C/OP/2 (Nov. 2, 1987).

¹⁴² See Steven Freeland, *International Criminal Justice in the Asia-Pacific Region: The Role of the International Criminal Court Regime*, 11 J. INT'L CRIM. JUST. 1029 (2013).

¹⁴³ See Rome Statute of the International Criminal Court Preamble, July 17, 1998, 2187 U.N.T.S. 90 [hereinafter Rome Statute].

State Party.”¹⁴⁴ The jurisdictional reach would also encompass Article 1 of the Rome Statute, which provides that its jurisdiction “shall be complementary to national criminal jurisdictions.”¹⁴⁵ If one of the four serious international crimes occurs in outer space and the jurisdictional requirements are met, the ICC exercises presumptive jurisdiction over the resultant proceedings.¹⁴⁶

Despite its expansive authority, the ICC frequently falls under marked criticism. The debates associated with the ICC are well documented¹⁴⁷ and would likely extend to outer space governance in a similar manner.

D. Domestic Courts

Generally speaking, most domestic constitutional courts adopt permissive approaches to State assertions of extraterritorial jurisdiction. While interstellar expansions of individual States’ criminal codes likely pass domestic constitutional muster, such a regime may create excessive complexity and inconsistency for individuals domiciled in outer space. There are systemic issues stemming from a lack of clear jurisdictional hierarchy in international law for domestic and regional courts to reference and clumsy metrics of jurisdiction, such as comity and the act of State doctrine.¹⁴⁸

Contemporary courts lack the necessary legal tools to effectively adjudicate extraterritorial claims, which compels the development of a specialized regime for jurisdictional regulation in space. Such a system could involve specialist tribunals, rather than general courts. Nonetheless, at present, domestic courts endure as the only real practical forum for adjudicating instances of extraterritorial criminal conduct. Nonetheless, such an approach is still capable of developing international law because “the rule of law at the

¹⁴⁴ *Id.* at art. 12.

¹⁴⁵ *Id.* at art. 1.

¹⁴⁶ *Id.* at art. 5. In the alternative, an individual nation State could exercise universal jurisdiction. See generally VALERIE EPPS & LORIE GRAHAM, EXAMPLES & EXPLANATIONS: INTERNATIONAL LAW 140 (2d ed. 2015) (“Universal jurisdiction is an international legal principle that reasons that certain activities are so reprehensible that the usual rules of jurisdiction are waived, and any state apprehending the alleged perpetrator is deemed competent to exercise its jurisdiction.”).

¹⁴⁷ See, e.g., Darryl Robinson, *Inescapable Dyads: Why the International Criminal Court Cannot Win*, 28 LEIDEN J. INT’L L. 323 (2015).

¹⁴⁸ See Danielle Ireland-Piper, *Outdated and Unhelpful: The Problem with the Comity Principle and Act of State Doctrine*, 24 AUSTL. INT’L L.J. 15 (2018).

international and domestic levels is not a normative ideal or a requirement of separate legal orders, but is intimately connected and mutually reinforcing.”¹⁴⁹ It may be that “national institutions can protect the rule of law against weaknesses of international law itself . . . [and] national courts can provide the missing link by assessing international acts against fundamental rights, whether as international norms or in the form of domestic constitutional rights.”¹⁵⁰

IV. CHALLENGES

A. *Nationality*

As discussed above, the current jurisdictional framework of most space treaties hinges on nationality jurisdiction. While the practice may seem to be sound on its face, the same challenges to nationality jurisdiction on Earth also arise in space.¹⁵¹ International law generally embodies a neutral approach towards grants of nationality, provided that the granting State does not breach certain international obligations.¹⁵² For dual citizens, there is also potential amenability to multiple, potentially conflicting, legislative regimes.¹⁵³

The passive nationality principle grows increasingly problematic. As a ground of criminal jurisdiction, it has been described as the “most contested in contemporary International Law.”¹⁵⁴ While a person generally maintains awareness of their own nationality,

¹⁴⁹ ANDRE NOLLKAEMPER, NATIONAL COURTS AND THE INTERNATIONAL RULE OF LAW 301 (2011).

¹⁵⁰ *Id.* at 305.

¹⁵¹ Common challenges to nationality jurisdiction are the changing nature of citizenship and nationality and the lack of consistent approach to the grant and revocation of citizenship by nation-states. See Ariel Zemach, *Fairness and Moral Judgments in International Criminal Law: The Settlement Provision in the Rome Statute*, 41 COLUM. J. TRANSNAT'L L. 895, 901 (2003).

¹⁵² See, e.g., Convention Relating to the Status of Stateless Persons art. 2, Sept. 28, 1954, 360 U.N.T.S. 117.

¹⁵³ Kim Rubenstein, *Citizenship in an Age of Globalisation: The Cosmopolitan Citizen?* 25 LAW IN CONTEXT 88, 90-91 (2007) (“Domestic laws about who is and who is not a citizen vary significantly, and laws relating to citizenship in each of the different States are also different. As a result, many people hold more than one nationality by fulfilling the formal requirements for citizenship in more than one domestic legal framework.”).

¹⁵⁴ ALEJANDRO CHEHTMAN, THE PHILOSOPHICAL FOUNDATIONS OF EXTRATERRITORIAL PUNISHMENT 67 (2010).

they may not be aware of the nationality of the persons with whom they interact.¹⁵⁵ In essence, while the nationality principle bears some applicability to the regulation of criminal law in outer space, it is encumbered by many of the same constraints hindering effectiveness here on Earth. As a result, there may be a necessity for specialized rules of nationality and for individuals entering space.

B. Delineation

The concept of outer space generally encompasses “the space upwards from the airspace . . . surrounding the Earth.”¹⁵⁶ However, the precise point at which airspace becomes outer space remains hotly debated.¹⁵⁷ The Outer Space Treaty lacks a definition of outer space’s lower limits. In many ways, identification of an exact border between the two is more of a political and legal question than a scientific one.¹⁵⁸ The lack of scientific precision derives from the fact that the atmosphere does not change dramatically at any certain or consistent height that would render it possible to discern the line separating it from outer space.¹⁵⁹ Though it might seem a question of semantics, the definition of a clear boundary is important for a variety of reasons. For example, this dividing line would dictate which high-flying humans get to be designated as astronauts.¹⁶⁰ The measurement also implicates matters of national security: “flying a satellite 55 miles above . . . [a State] is just fine if space begins at 50 miles up, but [defining] the edge at 60 miles, . . . [might cause it to be considered] an act of military aggression.”¹⁶¹ In short, it is essential to discern the spatial confines governing which laws apply where.¹⁶²

¹⁵⁵ IRELAND-PIPER, *supra* note 76, at 24-29.

¹⁵⁶ LOTTA VIIKARI, THE ENVIRONMENTAL ELEMENT IN SPACE LAW 1 (2008). *See also* Anél Ferreira-Snyman & Bin Cheng, *The Legal Status of Outer Space And Relevant Issues: Delimitation Of Outer Space And Definition Of Peaceful Use*, 11 J. SPACE L. 89 (1981).

¹⁵⁷ *See* Bhavya Lal & Emily Nightingale, *Where is Space? And Why Does That Matter?* 2014 SPACE TRAFFIC MGMT. CONF. 4-10 (2014).

¹⁵⁸ *See, e.g.*, Snyman & Cheng, *supra* note 156; VIIKARI, *supra* note 156, at 1.

¹⁵⁹ VIIKARI, *supra* note 156, at 1.

¹⁶⁰ Nadia Drake, *Where, Exactly, is the Edge of Space? It Depends on Who You Ask*, NAT’L GEOGRAPHIC (Dec. 20, 2018), <https://www.nationalgeographic.com/science/2018/12/where-is-the-edge-of-space-and-what-is-the-karman-line/>.

¹⁶¹ *Id.*

¹⁶² *See* Freeland, *supra* note 3, at 8.

There are at least two possible approaches to determining when airspace becomes outer space. One approach is to simply agree on a particular height or distance at which outer space commences.¹⁶³ Suggested distances include eighty kilometers above mean sea level due to the composition of the atmosphere at the point¹⁶⁴ or, for example, 100 kilometers as set out in Australian legislation, which links its definition of space objects in relation to that measure, although is not intended as a delineation measure.¹⁶⁵

Other sources suggest universal adoption of the “Kármán line,” a boundary named after Hungarian physicist Theodore von Kármán, who advocated the adoption of a boundary around eighty kilometers above sea level.¹⁶⁶ As of 2018, though, the “Kármán line” is set at roughly 100 kilometers above sea level.¹⁶⁷ Another approach is to delineate outer space from airspace by reference to the nature of activities possible in each. However, Lotta Viikari identifies a problem with the latter approach through the example of the US Space Shuttle.¹⁶⁸ The Space Shuttle launches like a rocket, but can also use aerodynamic lift (as an airplane would) when returning to Earth.¹⁶⁹ Therefore, in theory, the Space Shuttle could be governed by both space law and air law and questions of State sovereignty, and jurisdiction, in airspace might become a complicating factor. The illusive nature of atmospheric zoning is complicated by the fact that “Earth’s atmosphere doesn’t simply vanish; rather, it gradually becomes thinner and thinner over about 600 miles.”¹⁷⁰ In fact, “the International Space Station—which orbits at an average height of 240 miles—would not be in space if we defined ‘space’ as the absence of an atmosphere.”¹⁷¹

¹⁶³ Vernon Nase, *Delimitation and the Suborbital Passenger: Time to End Prevarication*, 77 J. AIR L. & COM. 747, 767 (2012) (noting that a definitive zone determination requires that “states enact or amend domestic legislation on space to implement their international obligations under Article VI of the Outer Space Treaty and to declare the agreed limitation point between airspace and outer space.”).

¹⁶⁴ VIİKARI, *supra* note 156, at 2.

¹⁶⁵ *Space (Launches and Returns) Act 2018* (Cth) s 8 (Austl.).

¹⁶⁶ Drake, *supra* note 160.

¹⁶⁷ *Id.*

¹⁶⁸ VIİKARI, *supra* note 156, at 1.

¹⁶⁹ *Id.*

¹⁷⁰ Drake, *supra* note 160.

¹⁷¹ *Id.*

In any event, a lack of universal definition persists. The Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space observed in 2002 that it had heard diverse views on the definition and delimitation of outer space since 1967 and still struggled to resolve substantive legal issues related to the definition and delimitation of outer space years later.¹⁷²

Responses, in 2012, by France and Australia to the question of whether “their Government considered it necessary to define outer space and/or to delimit airspace and outer space,”¹⁷³ are emblematic of the debate. The Australian government stated that it:

recognizes that it is advantageous to domestic entities conducting space activities to have certainty as to the legal framework which applies to their activities. In this respect, the delimitation of activities that must comply with the requirements of the Space Activities Act and activities that need not comply is necessary for the efficient regulation of domestic Australian space activities. In achieving this goal, the existence of an accepted point of delimitation is more important than the physical location of that point.¹⁷⁴

In contrast,

France does not consider it appropriate, as the situation with regard to space activities currently stands, to define and delimit outer space. It maintains a functionalist approach to space activities: any object whose purpose is to reach outer space, whether or not that purpose is achieved, is a space object. Thus, the international liability regime established by treaties under the aegis of the United Nations may be applied even when a launched object fails to reach outer space but nevertheless causes damage.¹⁷⁵

The point is that there is currently no agreement as to the precise delineation between outer space and airspace. This is an obstacle in clarifying the nature of jurisdiction because of competing legal

¹⁷² Comm. On the Peaceful Uses of Outer Space, Rep. of the Legal Subcomm. on Its Fifty-First Sess., U.N. Doc. A/AC.105/769 (Jan. 18, 2002).

¹⁷³ Comm. on the Peaceful Uses of Outer Space, Rep. of the Legal Subcomm. on Its Fifty-Second Sess., U.N. Doc. A/AC.105/889/Add.10 (Feb. 21, 2012).

¹⁷⁴ *Id.*

¹⁷⁵ *Id.*

regimes—earth-bound versus space-bound—and the different national interests at play in both.

C. Space Tourism

In 2001, American national Dennis Tito became the first “space tourist.”¹⁷⁶ At the time of this writing, seven private citizens have paid to go to space, with the most recent in 2009.¹⁷⁷ On December 13, 2018, Virgin Galactic conducted their first trip to “near-space” with Virgin’s spaceplane VSS Unity, reaching an altitude of 82.7 kilometers (51.4 miles).¹⁷⁸ On its website, Virgin Galactic describes its mission to be, among other things, “Democratizing Space,” suggesting it will, “for the first time, offer everyone the opportunity to become private astronauts and experience the wonder of space for themselves. Our spaceships will also offer the research community a unique platform for space-based science.”¹⁷⁹ Additionally, Virgin’s mission indicates there will be “a regular schedule of spaceflights for private individuals and researchers from our operational hub at New Mexico’s Spaceport America, the world’s first purpose built commercial spaceport.”¹⁸⁰

The notion of “democratizing” access to space is attractive, although in reality, the sheer wealth required to engage in such an activity will preclude all but a few. Nonetheless, it is “almost inevitable that commercial space tourism will emerge as a realistic and foreseeable use of outer space within the near future.”¹⁸¹ Steven Freeland has noted that:

[a] poll conducted in May 2002 indicated that 19 percent of affluent American adults would be willing to pay one hundred thousand dollars for a fifteen minute suborbital flight, while 7 percent would be prepared to pay twenty million dollars for a two-week flight to an orbital space station, with that figure

¹⁷⁶ Jonathan O’Callaghan, *2019 Is the Year that Space Tourism Finally Becomes a Reality. No, Really*, WIRED (Jan. 24, 2019), <https://www.wired.co.uk/article/spacex-blue-origin-space-tourism>.

¹⁷⁷ *Id.*

¹⁷⁸ *Id.*

¹⁷⁹ *Mission*, VIRGIN GALACTIC, <https://www.virgingalactic.com/mission/> (last visited May 21, 2020).

¹⁸⁰ *Id.*

¹⁸¹ Freeland, *supra* note 3, at 3.

rising to 16 percent if the price were reduced to a “mere” five million dollars.¹⁸²

In Blount’s view,

Tourists could be an especially volatile development, since they are not military-esque state actors that have been sent to space as the “envoys of mankind”, nor would they even feel constrained by the rules and regulations of a private company with operations in space as an employee of that company might. Their interactions would most closely resemble interactions of the average citizen on earth where crime and other conflicts regularly occur.¹⁸³

In a jurisdictional sense, Blount is right. In this regard, his proposal for a “space visa which will serve as a way to create an internationally uniform jurisdictional regime”¹⁸⁴ has merit. Blount suggests that the State issuing a space visa to an individual would do so on the condition that the individual subjugated his/her self to the jurisdiction of that State.¹⁸⁵ This proposal may be useful for individual, *ad hoc* crimes. What, however, if transnational organized crimes, such as migrant smuggling, weapons trafficking, or environmental crimes, made their way into space? That may involve organizations comprised of multiple individuals travelling under various space visas. And what of visa fraud? In the event of a fraudulent space visa, whom would have jurisdiction? It could also create a tiered hierarchy of criminal liability, particularly between nationals of countries with space capacity and those without. Space visas would likely be a useful administrative tool, but could not be the complete and final word on jurisdiction.

D. Private operators

It is not clear whether the prohibition on appropriation of outer space found in the Outer Space Treaty only applies to States or whether it would also bind private, non-State operators. For example, as Ricky Lee has pointed out, Article II of the Outer Space

¹⁸² *Id.* at 2 (quoting Eddie Fitzmaurice, *Beam Me Up, Richard*, THE SUN-HERALD (Sydney), Oct. 24, 2004, at 52).

¹⁸³ Blount, *supra* note 16, at 303.

¹⁸⁴ *Id.* at 301.

¹⁸⁵ *Id.*

Treaty doesn't expressly apply to private entities—indeed, the Chinese version expressly provides that “States” cannot appropriate, with the possible implication that only States (and not corporations) are bound.¹⁸⁶ However, there is reference to non-governmental entities in Article II(3) of the Moon Agreement and Article VI of the Outer Space Treaty. As a matter of interpretation, does the specific mention of non-governmental entities in the Moon Agreement imply that they are exempt from the Outer Space Treaty? As a matter of common sense, it would seem inconsistent with the “common heritage of humankind” intentions behind the legal frameworks on outer space. However, private operators may act independently of the State and could be made up of multiple persons with multiple nationalities. Thus, they are not as easily regulated by the nationality principle of jurisdiction. Corporate entities can also have nationality, but the rules for ascertaining that nationality are complex, often leading to harmful types of forum shopping or competing claims to jurisdiction.

Potentially, the objective territoriality principle, the protective principle and the effects doctrine could provide criminal jurisdiction. However, the relevant criminal conduct of a non-governmental entity would have to exhibit the requisite effects on a particular State, as required by each ground. The universality principle of extraterritorial jurisdiction may also be helpful, but only in limited circumstances. Universality is only applicable to certain universally recognized crimes, such as piracy. Given the comparison made between the High Seas and outer space, in the sense that both are considered common heritage of humankind and not the sovereign territory of a particular State, the application of the universality principle is not entirely unreasonable for some crimes analogous to piracy. Such crimes may include hijacking of a space vessel or theft from such a vessel, but universality would not be applicable for other criminal activity. These shortcomings do raise concerns as to the hierarchy of jurisdictional claims in outer space.

The issue of private operators also raises questions as to attribution for the purposes of determining “State Responsibility.” The question as to whether private parties, such as subcontractors, can be considered functionaries of the State is taken up in Article 5

¹⁸⁶ Lee, *supra* note 24, at 131.

of the International Law Commission's Articles on the Responsibility of States for Internationally Wrongful Acts (ARSIWA).¹⁸⁷ It provides:

The conduct of a person or entity which is not an organ of the State under article 4 but which is empowered by the law of that state to exercise elements of the governmental authority shall be considered an act of the State under international law, provided the person or entity is acting in that capacity in the particular instance.¹⁸⁸

While these principles only apply to conduct which is "internationally wrongful,"¹⁸⁹ the principles nonetheless provide domestic courts with a useful architecture by which to explore questions of attribution for extraterritorial action of non-governmental entities.

E. Human Rights and Space

Human activity in space also raises questions as to the role of human rights law in space and the consequences of space activities on the realization of human rights. For the purpose of international human rights law, the Universal Declaration of Human Rights (UDHR),¹⁹⁰ recognizes two types of human rights: (1) civil and political rights; and (2) economic, social and cultural rights.¹⁹¹ In order to codify these into legal obligations, two separate international covenants were adopted "which, taken together, constitute the bedrock of the international normative regime for human rights."¹⁹² These two conventions are the International Covenant on Civil and Political Rights (ICCPR)¹⁹³ and the International Covenant on Economic, Social and Cultural Rights (ICESCR).¹⁹⁴ Many other multi-lateral and regional treaties have also been negotiated setting out

¹⁸⁷ Int'l L. Comm'n, Rep. on the Work of Its Fifty-Third Session, U.N. Doc. A/56/10, at art. 5 (2001).

¹⁸⁸ *Id.* at art. 5.

¹⁸⁹ *Id.* at art. 1.

¹⁹⁰ G.A. Res. 217 (III) A, Universal Declaration of Human Rights (Dec. 10, 1948).

¹⁹¹ PHILLIP ALSTON & RYAN GOODMAN, INTERNATIONAL HUMAN RIGHTS 278 (2013).

¹⁹² *Id.* at 277.

¹⁹³ International Covenant on Civil and Political Rights, Dec. 16, 1966, 999 U.N.T.S. 171.

¹⁹⁴ International Covenant on Economic, Social and Cultural Rights, Dec. 16, 1966, 993 U.N.T.S. 3.

human rights obligations. In short, international human rights law recognizes the individual person as a subject of international rights. For breaches of the ICCPR, individuals can bring legal proceedings before the Human Rights Committee.¹⁹⁵ An individual complaints mechanism is provided for in an optional protocol to the ICESCR that came into force in 2013.¹⁹⁶

The usefulness of international human rights law in the regulation of extraterritorial jurisdiction lies in the recognition of the rights of individuals, contrary to the relative rights and interests of States in relationship to one another which normally preoccupies extraterritoriality analyses. Further, “human rights law applies to extraterritorial State actions, thereby potentially offering a normative framework by which conformity to human rights standards can be judged.”¹⁹⁷ In an advisory opinion titled *Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory (Wall Opinion)*,¹⁹⁸ the International Court of Justice held that States parties to the ICCPR should be bound to comply with its provisions, even when exercising jurisdiction outside national territory.¹⁹⁹ Further, Article 14 of the ICCPR provides for a number of “fair trial” rights²⁰⁰ and Article 9 of the ICCPR is relevant to an

¹⁹⁵ *Human Rights Committee*, OFF. OF THE HIGH COMM’R OF HUMAN RIGHTS, <https://www.ohchr.org/EN/HRBodies/CCPR/Pages/CCPRIntro.aspx> (last visited Mar. 3, 2020).

¹⁹⁶ *Committee on Economic, Social and Cultural Rights*, OFF. OF THE HIGH COMM’R OF HUMAN RIGHTS, <https://www.ohchr.org/EN/HRBodies/CESCR/Pages/CESCRIntro.aspx> (last visited Mar. 3, 2020).

¹⁹⁷ Ralph Wilde, *Legal “Black Hole”? Extraterritorial State Action and International Treaty Law on Civil and Political Rights*, 26 MICH. J. OF INT’L. L. 739, 740 (2005).

¹⁹⁸ *Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory*, Advisory Opinion, 2004 I.C.J. Rep. 136 (July 9).

¹⁹⁹ *Id.* ¶ 109. Note, however, that in that case, Israel was found to be bound by its obligations under the ICCPR on the basis that it was exercising a type of territorial jurisdiction over Occupied Palestine; *see also*. In *Bankovic v. Belgium*, an application by six citizens of the Federal Republic of Yugoslavia complained that the bombing of a radio and television building by NATO during the Kosovo crisis in April 1999 in which a number of people were killed violated the right to life in Article 2 and the freedom of expression in Article 10, of the European Convention on Human Rights. The Court declared the application inadmissible on the basis that there was no jurisdictional link between the victims of the act and the respondent States. *Bankovic v. Belgium*, 2001-XII Eur. Ct. H.R. 890.

²⁰⁰ International Covenant on Civil and Political Rights art. 14, Dec. 16, 1966, 999 U.N.T.S. 171.

exercise of extraterritoriality because it prohibits arbitrary arrest or detention.²⁰¹

An example of such rights can be seen in the decision of the Human Rights Committee in *Domukovsky v. Georgia*, where the Committee suggests that an impermissible exercise of extraterritorial jurisdiction can lead to a finding of an Article 9 violation.²⁰² That case was brought by a number of complainants, of which Mr. Domukovsky was one. Mr. Domukovsky, a Russian national, was one of nineteen persons brought to trial before the Supreme Court of Georgia on charges of participating in terrorist acts.²⁰³ Domukovsky argued that the government of Azerbaijan, where he had sought refuge, refused Georgia's request to extradite him and that in April 1993, he was kidnapped from Azerbaijan and illegally arrested.²⁰⁴ For this reason, Domukovsky argued, among other things, that his arrest was a violation of Article 9 of the ICCPR.²⁰⁵ In response, Georgia submitted that Domukovsky was arrested following an agreement with the Azerbaijan authorities on cooperation in criminal matters.²⁰⁶ The Human Rights Committee, however, found the arrest was unlawful in violation of Article 9, paragraph 1, of the Covenant.²⁰⁷

Further, as noted at the outset, the use of space does have consequences on many activities, including the delivery of humanitarian aid and access to information. Therefore, the use of space also has indirect consequences for the realization of human rights. In any event, however, a comprehensive analysis of the relationship between space law and international human rights law is beyond the scope of this Article. The main point to be made at this juncture is that if the legal authority of the State can—as it currently does—stretch extraterritorially into space, it follows that human rights obligations do too. The United Nations Human Rights Committee,

²⁰¹ International Covenant on Civil and Political Rights art. 9, Dec. 16, 1966, 999 U.N.T.S. 171. Article 9 requires that “[n]o one shall be deprived of his liberty except on such grounds and in accordance with such procedure as are established by law.”

²⁰² Human Rights Comm., Views of Its Sixty-Second Session, ¶ 18.2, U.N. Docs. CCPR/C/62/D/623/1995, CCPR/C/62/D/624/1995, CCPR/C/62/D/626/1995, CCPR/C/62/D/627/1995 (May 29, 1998).

²⁰³ *Id.* ¶ 2.1.

²⁰⁴ *Id.* ¶ 2.2.

²⁰⁵ *Id.* ¶ 11.1.

²⁰⁶ *Id.* ¶ 10.3.

²⁰⁷ *Id.* ¶ 18.2.

which hears complaints of violations of the International Covenant on Civil and Political Rights, might have jurisdiction to hear complaints relating to assertions of extraterritorial jurisdiction in space.

V. CONCLUSION

From the above, we can surmise that there is currently a distinction between criminal acts carried out onboard a spacecraft and criminal acts committed outside a spacecraft. For the purposes of treaty law, it is a regulatory gap filled by the principles of jurisdiction which are currently understood to be customary international law. In the case of criminal acts onboard spacecraft, however, Article VIII of the Outer Space Treaty would operate to extend the jurisdiction of the State of registry. There may also be a distinction between conduct taking place in relation to outer space and activities in outer space. Such distinction relates to the delineation debate and would likely be resolved by international agreement on the point of demarcation of airspace and outer space, or by the adoption of a purpose test. A purpose test would, in determining if a vessel's purpose is related to outer space, minimize the effect of a finding that the relevant space craft was still in airspace.

The potential increase in space tourism is also instructive for it reveals a need for a code of conduct or principles of jurisdiction to apply to civilian space tourists. Such rules are also needed in relation to the issue of private and commercial operators in outer space.

Ultimately, however, our above consideration of the rules of extraterritorial criminal jurisdiction in outer space has raised as many questions as answers. Arguably, existing principles of international law "are merely proxy principles for underlying core principles"²⁰⁸ and outdated notions at the periphery of the core principles should not constrain contemporary legal thinking.²⁰⁹ This is particularly true in the context of new frontiers, such as outer space. In short, the complexity of existing rules of extraterritorial jurisdiction and the limitations of those rules in space point to the need for new principles of jurisdiction for settlement of extraterrestrial disputes and criminal conduct. We look forward to the debate.

²⁰⁸ Svantesson, *supra* note 121.

²⁰⁹ *Id.*