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FROM *RES COMMUNIS* TO *RES NULLIUS*: THE NECESSITY TO DECOLONISE OUTER SPACE.

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Master of International Law
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INTRODUCTION

Outer space was confined to human imagination for a long time. During the Cold War, when it became possible for humans to fly above Earth's atmosphere, the weaponisation of outer space became an international concern. International law of outer space (ILOS) emerged during this period.[1] This body of law was based on two standards: outer space as a cosmic commons and a *locus* for the development of humankind. These two standards promised to promote equality among nations with respect to access to outer space. However, neocolonialism resulted in the use of the commons and development languages to maintain spacefaring nations' privileged position in the space race.

Chapter I presents the framework of the *corpus iuris spatialis,* the primary law governing space activities, and its historical construction. Chapter II argues that the cosmic commons have a communal language. Principles like *res communis*, the province of humankind,[2] and the common heritage of humankind (CHM) form the basis of ILOS. The broadness of these principles was the instrument that domestic legislation used to treat outer space as *res nullius.* For methodological reasons, only the Outer Space Treaty (OST) and the Moon Agreement are the focus of research for this paper because they are the main treaties that refer to outer space as *res communis*.

Third, Chapter III assesses the language of development. This chapter shows how the international treaties give the basic notion of what development in outer space is. Further, this chapter examines the current access to outer space and the discourses concerning access that

[1] Ivan A Vlasic, 'The Relevance of International Law to Emerging Trends in the Law of Outer Space' in Cyril E Black and Richard A Falk, *The Future of the International Legal Order, Volume 2: Wealth and Resources* (Princeton University Press 2015) 266.

[2] For methodological reasons, the term 'mankind' will be replaced for 'humankind' to encompass a gender-neutral language.

certain corporations have adopted to demonstrate how they depart from the communal language and from the language of development in outer space.

Chapter IV proposes that the regulation of Article 11 of the Moon Agreement is the best instrument for non-spacefaring nations to challenge the neocolonial exploitation of the cosmic commons. This chapter sets out how such regulation should be implemented (*de lege ferenda*) and why the Committee on the Peaceful Uses of Outer Space (COPUOS) is appropriate to take responsibility for the task. Conclusively, a comparison of the regulations of the Antarctic and the Deep Seabed regimes reveals that outer space governance must be cognizant of both the successes and failures resulting in the regulation of the global commons.

Finally, the methodology adopted in this research is qualitative, doctrinal, descriptive in the first three chapters and normative in the last one. The research follows the postcolonial method.[3]

[3] Koskenniemi, Marti, 'Methodology of International Law', *Max Planck Encyclopedias of International Law* (2007) <https://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e1440> accessed 25 April 2022.

1. INTERNATIONAL LAW OF OUTER SPACE AND ITS HISTORICAL CONSTRUCTION

ILOS is a developing branch of public international law created during the Cold War.[4] At present, it is not (yet) composed of a significant number of norms. This chapter will set out the main norms of the *corpus iuris spatialis* and its historical development.

A. The framework of the corpus iuris spatialis

Corpus iuris spatialis refers to the body of public international law that includes norms about outer space.[5] The construction of the *corpus iuris spatialis* occurred in a period of intense legislation by the United Nations (UN) from 1967 onwards. Five main treaties constitute this branch of international law:[6] the Outer Space Treaty 1967 (OST); the Rescue Agreement 1968; the Liability Convention 1972; the Registration Convention 1974; and the Moon Agreement 1979.

The origin of these five binding norms was prompted by the Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space (Declaration).[7] The United Nations General Assembly (UNGA) voted unanimously in favour

[4] Vlasic (n 1) 265.

[5] In his separate opinion in the *Pulp Mills Case,* Judge Cançado Trindade notices that outer space is a new international legal system *ICJ, Pulp Mills on the River Uruguay (Argentina v Uruguay), Judgment, Dissenting Opinion of Judge Cançado Trindade, ICJ Reports 2010, p 14 para 38*.

[6] This nomenclature and selection is the one used by the United Nations Office for Outer Space Affairs: <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties.html> accessed 6 December 2021, and present in the doctrines of many scholars: Bin Cheng, 'The International Legal Status of Outer Space, Space Objects, and Spacemen', *Studies in International Space Law* (Oxford University Press 1997). and Manfred Lachs, 'The International Law of Outer Space (Volume 113)', *Collected Courses of the Hague Academy of International Law* (Brill 1964) <https://referenceworks.brillonline.com:443/entries/the-hague-academy-collected-courses/the-international-law-of-outer-space-volume-113-A9789028615021_01>.

[7] United Nations, Resolution 1962 (XVIII). Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space. 1963.

of adopting the Declaration on the 13th of December 1963. In the Declaration's preamble, the exploration and use of outer space are recognised as the common interest of all mankind. Despite the unanimous adoption by the UNGA, some States made statements to the effect that a mere declaration was not sufficient.[8] Therefore, a legally binding treaty was necessary.[9] Thus, in 1967 the OST was executed, [10] which is the second most ratified treaty in international outer space law with 111 ratifications and 23 signatures,[11] after the Agreement of the International Telecommunications Satellite Organization.[12]

The OST constitutes the *Magna Carta* of international outer space law[13] and employs a cosmopolitan language.[14] Expressions such as 'benefit of all peoples' and 'interests of all countries', as well as the non-appropriation clause, are examples of the attempt to insert more diverse values into the OST.[15]

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[8] Before the adoption of the Declaration, many delegations, such as the delegations of Czechoslovakia and India, viewed the necessity of a treaty or a convention. In: United Nations, 'Summary Records - LSC - First Session. A/AC.105/C.2/SR.02.' (United Nations 1962) A/AC.105/C.2/SR.02 <https://www.unoosa.org/pdf/transcripts/legal/AC105_C2_SR002E.pdf> accessed 6 December 2021. and United Nations, 'Summary Records - LSC - First Session. A/AC.105/C.2/SR.04' (United Nations 1962) A/AC.105/C.2/SR.04 <https://www.unoosa.org/pdf/transcripts/legal/AC105_C2_SR004E.pdf> accessed 6 December 2021.

[9] Cheng writes that the Declaration was a mere guidance to states. See: Cheng (n 6). However, Scharf argues that, despite the controversy of the binding effect of the Declaration, it is customary international law and the declaration was a clear Grotian moment. In: Michael P Scharf, *Customary International Law in Times of Fundamental Change: Recognizing Grotian Moments* (Cambridge University Press 2013) <http://ebooks.cambridge.org/ref/id/CBO9781139649407> accessed 25 November 2021.

[10] United Nations, Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (adopted 19 December 1966). UNGA Resolution 2222 (XXI) (Outer Space Treaty) 1966.

[11] It was unanimously approved in the UN and in the Senate of the United States. See: Stephen Buono, 'Merely a "Scrap of Paper"? The Outer Space Treaty in Historical Perspective' (2020) 31 Diplomacy & Statecraft 350.

[12] United Nations, 'Status of International Agreements Relating to Activities in Outer Space as at 1 January 2021. A/AC.105/C.2/2021/CRP.10' (United Nations 2021) A/AC.105/C.2/2021/CRP.10 <https://www.unoosa.org/res/oosadoc/data/documents/2021/aac_105c_22021crp/aac_105c_22021crp_10_0_html/AC105_C2_2021_CRP10E.pdf> accessed 6 December 2021.

[13] Jinyuan Su, 'Legality of Unilateral Exploitation of Space Resources under International Law' (2017) 66 International and Comparative Law Quarterly 991, 993.

[14] Buono (n 11).

[15] United Nations Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (adopted 19 December 1966). UNGA Resolution 2222 (XXI) (Outer Space Treaty) (n 10).

The Rescue Agreement was introduced to broaden Articles V and VIII of the OST. The Rescue Agreement focuses on obligations and measures in respect of the rescue and assistance of astronauts in distress and their return to the launching State. The Liability Convention regulates the liability of the launching State for damages caused by its space objects on the surface of the Earth and for damages due to its faults in outer space.[16] This convention was soon followed by the Registration Convention, which standardises States' responsibilities for their space objects. The Registration Convention places the Secretary-General of the UN as the registrar of such space objects.

The last treaty of the *corpus iuris spatialis* is the Moon Agreement.[17] The *raison d'être* of the Moon Agreement is the classification of the Moon and celestial bodies as the common heritage of humankind (Article 11 of the Moon Agreement). Similar to the OST, the Moon Agreement has other tenets, including non-appropriation, non-militarisation,[18] cooperation, and development.

The two treaties that will be the object of this research are the OST and the Moon Agreement. The *rationale* for this is that they are the core treaties of the *corpus iuris spatialis* and the basis for studying the languages of the cosmic commons and development.

[16] Pablo Mendes de Leon and Hanneke van Traa, 'Space Law' in André Nollkaemper and Ilias Plakokefalos (eds), *The Practice of Shared Responsibility in International Law* (Cambridge University Press 2017) 453 <https://www.cambridge.org/core/books/practice-of-shared-responsibility-in-international-law/space-law/CFCF7E09760114CA0884EBF7276116F0>.

[17] United Nations, Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (adopted 5 December 1979). UNGA Resolution 34/68 (Moon Agreement).

[18] However, Scharf argues that military spy satellites are not prohibited in outer space. Scharf (n 9).

B. The Cold War influence

The formation of international organisations and norms regarding outer space commenced amid the Cold War. This epoch of intense productivity and construction of a space law regime began with an initial wave of optimism. International law was the forum for the 'ostensible vibrancy of law's institutions', and 'norms masked an intense anxiety about the survival of humanity'.[19] The allocation of socio-political discussions in the UN was not random.[20] The USA focused on the Soviet rivalry, and other already developed nations used the intense fragmentation of international law on this issue to strategically advance their agendas strategically and weaken the proto-Third World.[21] Consequently, ILOS reflected the narratives and imperial claims of that epoch.[22]

Others argue that the ideological battle present in the Cold War is not embedded within the legislation of ILOS.[23] This claim is based on telegrams that former USA President, John F. Kennedy, exchanged with former Soviet Chairman, Nikita Khrushchev, during the early 1960s. Shreve points out that both political leaders were friendly and shared continuous 'warm exchanges regarding space flight and exploration' and that 'space was not governed by ideologies'.[24] As an example, Shreve illustrates the launch of the American communications satellite in 1964, Echo II, and the signature of the 'First Memorandum of Understanding' between the USA and USSR in the summer of 1963.

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[19] Gerry Simpson, 'International Law in Diplomatic History', *The Cambridge Companion to International Law* (3rd edn, Cambridge University Press 2013).

[20] Koskenniemi debates that international law's system has a tension between concreteness and normativity. In: Martti Koskenniemi, 'International Law in the World of Ideas', *The Cambridge Companion to International Law.* (3rd edn, Cambridge University Press 2013).

[21] Sundhya Pahuja, *Decolonising International Law: Development, Economic Growth, and the Politics of Universality* (1st edn, Cambridge University Press 2013) 38.

[22] Simpson (n 19).

[23] ibid.

[24] Bradley G Shreve, 'The US, the USSR, and Space Exploration, 1957-1963' (2003) XX International Journal on World Peace 67.

However, there are some troubles with Shreve's suggestion. The euphemistic language used between Kennedy and Khrushchev did not preclude the prospect that the Cold War disturbed the space race. Both countries were also the embodiment of the ideological battle between capitalism and communism. Furthermore, Shreve himself cites Kennedy's speech entitled 'The Space Challenge', in which Kennedy stated that his nation would be first in space matters.[25] Additionally, the construction of ILOS was fuelled by linguistic and policy disagreements between the USA and the Soviet Union. The divergences are evidenced in *travaux préparatoires* and reports of the Committee of Outer Space which show that from the beginning the disarmament question was one of the tugs-of-war between those countries.[26] The UN expressly mentioned that it desired 'to avoid the extension of present national rivalries into this new field' in the establishment of the Committee of Outer Space.[27] This is why in 1958 the UN created the Ad Hoc Committee on the Peaceful Uses of Outer Space.[28] This occurred right after the Soviet Union and the USA launched their first satellites in 1957[29] and 1958, respectively.[30] The Committee's name reveals that the primary apprehension in the UN agenda was the potential utilisation of outer space for military purposes. In 1959, the *Ad Hoc* Committee was transformed into the Permanent Committee on Peaceful Uses of Outer Space (COPUOS).[31]

[25] ibid. Before the adoption of the Outer Space Treaty, the USA faced pressure from within to become the leadership in outer space law. See: Matthew J Corrigan, 'Outer Space Lawyers: Eagles or Turtles?' (1965) 51 American Bar Association Journal 6.

[26] United Nations, Resolution 1722 (XVI). Question of disarmament. 1961.

[27] United Nations, Resolution 1472 (XIV). International co-operation in the peaceful uses of outer space. 1958 [Res. 1472].

[28] United Nations, Resolution 1348 (XIII). Question of the peaceful use of outer space. 1958.

[29] Scharf (n 9) 124.

[30] A chronology of this is depicted in: Walter A McDougall, *The Heavens and the Earth: A Political History of the Space Age* (Johns Hopkins paperbacks ed, Johns Hopkins University Press 1997).

[31] United Nations Resolution 1472 (XIV). International co-operation in the peaceful uses of outer space. (n 27).

Events that took place at the beginning of the 1960s, such as the first photograph of the far side of the Moon,[32] the first manned spaceflight, and the first woman to orbit the Earth,[33] put a pressure on the UN to regulate outer space access. When pressured, the UN General Assembly 'noted with regret' that the COPUOS was not responding sufficiently to these advancements.[34]

The USSR and the USA's political disputes were reflected in the discussions of the COPUOS. Conflicting proposals and difficult negotiations contributed to the delay of the work.[35] For example, a recording from an early session of the Legal Sub-Committee in 1962 captured the USA member accusing the Soviet member of bringing the nuclear question to the negotiations.[36] Despite the delay, in 1963, the COPUOS presented the Declaration, which was adopted as a resolution by the UNGA.[37] The main concern at that moment was the weaponisation of outer space, which, for political reasons, was not regulated in the Declaration and only became a prohibition in the OST in Article IV.[38] Blount formulates that the OST's forum was the only place that nations could manage the 'bipolar great power rivalry in the Cold War and establish restraint in space'.[39]

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[32] NASA, 'First Photo of the Lunar Farside' (*Moon: NASA Science*) <https://moon.nasa.gov/resources/26/first-photo-of-the-lunar-farside> accessed 3 December 2021.

[33] United Nations Office of Outer Space Affairs, 'A History of Space' (*History of Space*) <https://www.unoosa.org/oosa/en/timeline/index.html> accessed 3 December 2021.

[34] United Nations, Resolution 1721 (XVI). International Co-operation in the Peaceful Uses of Outer Space. 1961.

[35] Lachs (n 6).

[36] United Nations, 'Summary Records - LSC - First Session. A/AC.105/C.2/SR.04' (n 8).

[37] United Nations Resolution 1962 (XVIII). Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space. (n 7).

[38] United Nations, 'Summary Record of the 1493rd Meeting (Closing Meeting): 1st Committee, Held at Headquarters, New York, Saturday, 17 December 1966, General Assembly, 21st Session' (United Nations General Assembly 1966) <https://digitallibrary.un.org/record/800394?ln=en> accessed 6 December 2021.

[39] PJ Blount, 'Peaceful Purposes for the Benefit of All Mankind: The Ethical Foundations of Space Security', *War and Peace in Outer Space* (Oxford University Press 2020) 119.

Twelve years passed between the adoption of the OST and the Moon Agreement. The Moon Agreement was signed after the American Apollo mission set foot on the Moon in 1969. In 1979, the international community was preoccupied with equitable access to outer space, especially because new states were vocal about their interests in the UN.[40] The Moon Agreement was innovative in many ways. It regulated environmental aspects of the Moon (Article 7), classified the Moon and celestial bodies as CHM (Article 11), and contained protracted provisions for the establishment of an international regime when the exploitation of outer space resources became feasible (Article 11(5)).

At this time, the battle between the USA and USSR was replaced by a struggle between the New International Economic Order (NIEO) and developing countries. The USA attacked the CHM because it damaged some of the country's economic interests.[41] Even though the USA was active in the drafting of the Moon Agreement, this country fought against its implementation and ratification afterwards when it became visible that the CHM embedded redistributive norms for the Global South.[42]

[40] Tanja L Masson-Zwaan and Mahulena Hofmann, *Introduction to Space Law* (Fourth edition, Kluwer Law International 2019) 33.

[41] D Goedhuis, 'Conflicts in the Interpretation of the Leading Principles of the Moon Treaty of 5 December 1979' (1981) 28 Netherlands International Law Review 14, 14.

[42] Clewley adds that another reason for the USA disapproval is that the Moon Agreement would collide with national space programs, such as NASA. Phoebe T Clewley, 'The Rise of the Private Space Industry Is Threatening the Current Legal Framework Governing Outer Space' (2021) 21 The Journal of High Technology Law 354, 363.

2. THE LANGUAGE OF THE COMMONS

Outer space is addressed by a specific legal language because it is a commons[43]. Logically, one should not classify outer space as a global commons like Antarctica and the High Seas, because these two are located on Earth. In Brownlie's words, outer space begins at '(t)he lowest limit above the earth sufficient to permit free orbit of spacecraft'.[44] Thus, cosmic commons is a preferable term of reference to distinguish outer space from the other global commons.[45] The language of the common has nuances, and the cosmic commons have similarities and differences with other areas beyond national jurisdiction. Therefore, one must examine the legal nature of outer space, the distinction between certain concepts, and compare domestic and regional legislation with international guidelines. As shown below, such examination proves that the design of the *corpus iuris spatialis* regime favours spacefaring nations.

A. Outer space as a cosmic commons

The classification of outer space is closely related to other areas beyond national jurisdiction, such as the High Seas and Antarctica,[46] regions in which there is no appropriation

[43] Commons is a concept applied to areas beyond national jurisdiction. James Crawford, *Brownlie's Principles of Public International Law* (Ninth edition, Oxford University Press 2019) 332.

[44] ibid.

[45] The term 'cosmic commons' is borrowed from Steer. Cassandra Steer, 'Global Commons, Cosmic Commons: Implications of Military and Security Uses of Outer Space' (2017) 18 Georgetown Journal of International Affairs 9.

[46] At the International Court of Justice (ICJ), outer space has been analysed with the global commons in certain cases regarding nuclear weapons. In his separate opinion in *Barcelona Traction* Case, Judge Ammoun categorizes outer space and those areas as 'community of humankind'. In: *ICJ, Barcelona Traction, Light and Power Company, Limited, Preliminary Objections, Judgement, Separate Opinion Judge Ammoun, ICJ Reports 1964, p 6, para 19*; See also: *ICJ, Request for an Examination of the Situation in Accordance with Paragraph 63 of the Court's Judgment of 20 December 1974 in the Nuclear Tests (New Zealand v France) Case, Dissenting opinion by Judge Koroma, I CJ Reports 1995, p 288, 94*; *ICJ,Legality of the Use by a State of Nuclear Weapons in Armed Conflict,Advisory Opinion, Dissenting Opinion of Judge Weeramantry, I CJ Reports 1996, p 66, 266*.

in the traditional sense.[47] Additionally, these ubiquitous areas are faced with challenges such as climate change,[48] access, and scarcity because their territories and resources can be accessed by all; and damage to these areas affects other regions on Earth.[49]

The origin of the commons in international law traces back to the Grotian argument against the Portuguese attempt to claim (*occupatio*) the ocean. In *Mare liberum*,[50] Grotius classified the seas as *res communis omnium* (common good or possession) or *res extra commercium* (a thing that no one can appropriate),[51] as opposed to something that belongs to nobody (*terra nullius*).[52] Thereupon, the construction of *res communis* was focused on guaranteeing the principle of freedom of navigation in the seas and trade among nations.

Based on the Grotius approach, outer space would be denominated as a common area or *res communis*. In 1956, Jenks, one of the earliest scholars in this field, followed the Grotian tradition and stated that outer space presented a closer analogy to the High Seas. He grouped the High Seas and outer space as *res extra commercium*, disagreeing with the possibility of them being *res nullius*.[53]

Lachs challenged this traditional approach.[54] He had a different opinion about classifying space as a commons or *res communis.* He maintained that outer space and celestial bodies are

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[47] Crawford (n 43) 332.

[48] Jutta Brunnée, 'Common Areas, Common Heritage, and Common Concern' in Daniel Bodansky, Jutta Brunnée and Ellen Hey (eds), Jutta Brunnée, *The Oxford Handbook of International Environmental Law* (Oxford University Press 2008) 558.

[49] John Vogler, 'Global Commons Revisited: Global Commons Revisited' (2012) 3 Global Policy 61, 61.

[50] Hugo Grotius and Robert Feenstra, *Mare liberum, 1609-2009* (Brill 2009) 55 <http://site.ebrary.com/id/10439246> accessed 5 January 2022.

[51] William E Butler, 'The Freedom of the Seas' in Randall Lesaffer and Janne E Nijman (eds), *The Cambridge Companion to Hugo Grotius* (1st edn, Cambridge University Press 2021) 479.

[52] Fitzmaurice denotes that Grotius does not use the term *res nullius* but only *nullius.* In: Andrew Fitzmaurice, 'Property, Trade and Empire' in Randall Lesaffer and Janne E Nijman (eds), *The Cambridge Companion to Hugo Grotius* (1st edn, Cambridge University Press 2021) 286.

[53] C Wilfred Jenks, 'International Law and Activities in Space' (1956) 5 International and Comparative Law Quarterly 99, 104.

[54] Manfred Lachs is one of the founding scholars of space law. From Poland, he was a judge of the ICJ and part of the Committee of Outer Space Affairs of the United Nations. See also: Britannica, 'Manfred Lachs. Polish Educator and Jurist', *Encyclopedia Britannica* (The Editors of Encyclopaedia)

not *res* in the meaning of the law, and that they could not be a common interest of humanity or *res extra commercium*. According to him, celestial bodies and outer space are provinces of State's activities subject to a particular legal regime.[55] In 1964, in his course at The Hague Academy of International Law, Lachs presented the hypothesis that future problems would arise from using and exploring celestial bodies as *res communis*, and he proposed the safeguard of outer space from policies of monopolisation.[56] Even though he disagreed with outer space as *res communis*, he used a communal language to protect outer space against state appropriation.[57]

Lachs' opinion remains a minority in the field, and most scholars adopt the approach of outer space as a *res communis*[58] and as a global commons.[59] Cheng registered that until the OST, outer space was *territorium extra commercium,* and celestial bodies were *territorium*

<https://www.britannica.com/biography/Manfred-Lachs> accessed 5 December 2021; Stephan Hobe and International Institute of Space Law (eds), *Pioneers of Space Law* (Martinus Nijhoff Publishers 2013) 193.

[55] Manfred Lachs, 'The Legal Regime of Outer Space and Celestial Bodies', *The Law of Outer Space: An Experience in Contemporary Law-Making. Reissued on the Occasion of the 50th Anniversary of the International Institute of Space Law* (Brill 2010).

[56] Lachs (n 6).

[57] ibid 50.

[58] Crawford (n 43) 317; Malcolm N Shaw, *International Law* (9th edn, Cambridge University Press 2021) 403 <https://www.cambridge.org/core/product/identifier/9781108774802/type/book> accessed 5 January 2022; Ram S Jakhu and Joseph N Pelton, 'Introduction to the Study on Global Space Governance' in Ram S Jakhu and Joseph N Pelton (eds), *Global Space Governance: An International Study* (Springer International Publishing 2017) 6 <http://link.springer.com/10.1007/978-3-319-54364-2_1> accessed 5 January 2022; Karin Mickelson, 'Common Heritage of Mankind as a Limit to Exploitation of the Global Commons' (2019) 30 European Journal of International Law 635, 636; Fabio Tronchetti, 'The Outer Space Treaty, the Moon Agreement and the 1996 Declaration on Space Benefits', *The Exploitation of Natural Resources of the Moon and Other Celestial Bodies: A Proposal for a Legal Regime* (Brill 2009) 13 <https://brill.com/view/title/16685> accessed 5 December 2021; Isabel Feichtner, 'Mining for Humanity in the Deep Sea and Outer Space: The Role of Small States and International Law in the Extraterritorial Expansion of Extraction' (2019) 32 Leiden Journal of International Law 255, 265.

[59] Isabel Feichtner and Surabhi Ranganathan, 'International Law and Economic Exploitation in the Global Commons: Introduction' (2019) 30 European Journal of International Law 541; Frans G Von Der Dunk, 'A Tale of Two Oceans: Governance of Terrestrial and Outer Space "Global Commons"' (2012) 2 Asian Journal of Air and Space Law 31, 5; Matt Craven, '"Other Spaces": Constructing the Legal Architecture of a Cold War Commons and the Scientific-Technical Imaginary of Outer Space' (2019) 30 European Journal of International Law 547, 548; Vogler (n 49) 61; Karin Mickelson, 'The Maps of International Law: Perceptions of Nature in the Classification of Territory' (2014) 27 Leiden Journal of International Law 621, 622.

nullius in general international law.[60] Following that, the OST prohibited the appropriation of all outer space, including the Moon and celestial bodies.[61] He considered that these areas most clearly fell into the category of *territorium extra commercium* as opposed to *territorium nullius* or national territory.[62] He agreed that it was only after the Moon Agreement that the Moon and celestial bodies became *territorium commune humanitatis* (CHM).[63]

I. The use and exploration of the Moon and celestial bodies

The OST and the Moon Agreement have enshrined two distinct characterisations: one relating to the classification of the Moon and celestial bodies as resources; and the other concerning the use and exploration of outer space. This methodological distinction is essential as concepts such as *res communis* and province of all humankind have different purposes.

The OST does not classify any celestial body or outer space *per se*. On the contrary, the categorisation is of 'the exploration and use' of outer space. For example, the Preamble and Article I respectively state:

> Preamble: Recognising the common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes, […]

> Article 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.

[60] Cheng (n 6) 390.

[61] ibid 400.

[62] ibid 386.

[63] ibid 405. A noticeable fact is that in 1996 the David Davies Memorial Institute of International Studies, supervised by Prof. R. Jennings, produced two draft treaties for outer space and in both they clearly categorized outer space and celestial bodies as *res communis omnium*. In: The Davis Davies Memorial Institute of International Studies, *Draft Code of Rules on the Exploration and Uses of Outer Space* (Burrup, Mathieson & Co 1966); The Davis Davies Memorial Institute of International Studies, *Draft Treaty on Outer Space, the Moon and Other Celestial Bodies* (Burrup, Mathieson & Co 1966).

The language of the Moon Agreement is more precise than the OST. In the Moon Agreement, the Moon is considered a natural satellite of the Earth and is CHM:

> Preamble: *Recognising* that the Moon, as a natural satellite of the Earth, has an important role to play in the exploration of outer space,
>
> […]
>
> Article 11 (1). The Moon and its natural resources are the common heritage of mankind, which finds its expression in the provisions of this Agreement, […]

The classification and regulation of the Moon are also applicable to celestial bodies according to Article 1(1) of the Moon Agreement:

> Article 1 (1). The provisions of this Agreement relating to the moon shall also apply to other celestial bodies within the solar system, other than the Earth, except in so far as specific legal norms enter into force with respect to any of these celestial bodies.

A minority of scholars consider that celestial bodies do not share the same protection as the Moon under the Moon Agreement, leaving them vulnerable to any type of exploration.[64] For example, Christol differentiates the Moon and other celestial bodies from their resources. He believes that the resources in those places are *res nullius*.[65] The problem is that this option makes a distinction that embodies a notion that 'outer space is a void in which solid celestial bodies float'.[66] In other words, Christol's argument does not consider that the objects *per se* are *res communis*, yet acknowledges that these resources are capable of exploration and use.

Consequently, there is a difference between the celestial bodies as objects and their exploration or use.[67] Additionally, Article 1(1) of the Moon Agreement makes clear that the provisions relating to the Moon also apply to celestial bodies. Another argument in favour of

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[64] Francis Lyall and Paul B Larsen, *Space Law: A Treatise* (Ashgate 2009) 197.

[65] Carl Q Christol, *The Modern International Law of Outer Space.* (Pergamon Press 1984) 318.

[66] Gbenga Oduntan, *Sovereignty and Jurisdiction in the Airspace and Outer Space: Legal Criteria for Spatial Delimitation* (Routledge 2012) 196.

[67] ibid.

this approach is that because the negotiations focused on the regulation of the Moon and its resources, only at the last-minute celestial bodies were introduced into this norm. Cheng writes that:

> The extension of the cosmographical scope of the treaty to other celestial bodies within the solar system excluding the Earth (Article 1(1)) was undertaken only at the last moment. On account of this last-minute decision, the draftsmen of the treaty did not even have time to modify all the provisions in the treaty. Instead, this extension was made simply by introducing a definitional provision (Article 1(1)).[68]

The use and exploration of the Moon and celestial bodies are similar to the regime in the OST. In both treaties, the use and exploration of outer space are the province of mankind. This is evidenced in Article I of the OST (see above) and Article 4 of the Moon Agreement:

> Article 4 (1). The exploration and use of the moon shall be the province of all mankind and shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development. Due regard shall be paid to the interests of present and future generations as well as to the need to promote higher standards of living and conditions of economic and social progress and development in accordance with the Charter of the United Nations.

In sum, outer space is *res communis* or a cosmic commons, and the Moon and celestial bodies are also cosmic commons, particularly *territorium commune humanitatis* (CHM).[69] The exploration and use of outer space, the Moon, and celestial bodies is the province of all humankind.

[68] Cheng (n 6) 405.

[69] Oduntan gives another name: *res omnium extra communis*. In: Oduntan (n 66) 197.

B. Indeterminacies in the languages of the commons

> *'it bears repeating: Outer space is not a 'global commons,' not the 'common heritage of mankind,' not 'res communis', nor is it a public good'.*[70]
> Scott Pace, the Executive Secretary of the United States National Space Council, on 13 December 2017.

When analysing outer space, Brownlie wrote that '(t)he analogy most applicable is that of the High Seas, a *res communis*, but such a category is not a source of precise rule'.[71] The legal classification of outer space, the Moon, and celestial bodies as *res communis* is settled in the international treaties and by scholars. Despite that, one of the tools that neocolonialism uses to maintain the power of spacefaring nations is the indeterminacy in the commons' language. What Brownlie pointed out as the imprecision of the concept of *res communis* is also applicable to province of humankind and CHM.

In the USA Senate, during the hearings to discuss the signature of the OST, Senator Gore mentioned: 'The terms of the treaty are indeed indefinite. I can almost use the word fuzzy'.[72] In the international arena, throughout OST negotiations, India's representative, Mr Rao, tried to conceptualise *res communis* in outer space. Still, he did not receive an answer to his precautionary environmental approach.[73] Months before the final approval of the OST, the UK representative enquired as to the legal content of the province of humankind, to which no answer was given.[74] Ambiguities and uncertainties about the property rights system are vast in

[70] Scott Pace, 'Space Development, Law, and Values' (IISL Galloway Space Law Symposium, Washington, 13 December 2017) <https://spacepolicyonline.com/wp-content/uploads/2017/12/Scott-Pace-to-Galloway-Symp-Dec-13-2017.pdf> accessed 15 February 2022.

[71] Crawford (n 43) 331.

[72] United States, 'Treaty on Outer Space. 90th Congress.' (1967) 30.

[73] United Nations, 'Summary Record of the Fifty-Seventh Meeting of the Legal Sub-Committee on the Peaceful Uses of Outer Space' (United Nations General Assembly 1966) A/AC.105/C.2/SR.57 19.

[74] United Nations, 'Summary Record of the Sixty-Third Meeting of the Legal Sub-Committee on the Peaceful Uses of Outer Space.' (1966) A/AC.105/C.2/SR.63.

the OST.[75] Some note that those ambiguities come from the concept of outer space itself,[76] whereas others suggest that those terms are *per se* vague.[77]

I. Province of all humankind

The concept of 'province of all humankind' has five different possible meanings contained within the word humankind: all states; all states, particularly developing states; all nations; all living human beings; or all living and future human beings.[78]

Whereas some argue that the province of all humankind embraces only sovereign interest and excludes non-governmental and natural persons,[79] others say that there is no subject attributable to that term.[80] Instead, they suggest that just and peaceful interests are encompassed by the scope of the province of humankind, regardless of the persons.[81] From another perspective, Jenks contends that the province of humankind is a mere principle that does not entail specific appropriation by anyone, as it is only a guide for interpretation.[82]

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[75] Hope M Babcock, 'The Public Trust Doctrine, Outer Space, and the Global Commons: Time to Call Home ET' 69 Syracuse Law Review 73, 210.

[76] Olavo de Oliveira Bittencourt Neto, *Defining the Limits of Outer Space for Regulatory Purposes* (1st ed. 2015, Springer International Publishing: Imprint: Springer 2015).

[77] Ezra J Reinstein, 'Owning Outer Space' (1999) 20 Northwestern Journal of International Law & Business 59, 66.

[78] Ricky J Lee, *Law and Regulation of Commercial Mining of Minerals in Outer Space* (Springer 2012) 216. See also: Ernst Fasan, 'The Meaning of the Term Mankind in Space Legal Language' (1974) 2 Journal of Space Law 125.

[79] Peter PC Haanappel, *The Law and Policy of Air Space and Outer Space: A Comparative Approach* (Kluwer Law International 2003) 15.

[80] Henry R Hertzfeld, Brian Weeden and Christopher D Johnson, 'How Simple Terms Mislead Us: The Pitfalls of Thinking about Outer Space as a Commons' 1 10.

[81] Gijsbertha Cornelia Maria Reijnen, 'The Prevention of an Arms Race in Outer Space' in Marietta Benkö and Willem de Graaff, *Space law in the United Nations* (M Nijhoff Publishers 1985) 178. Another defendant of the 'peaceful purposes' interest was Eilene Galloway, one of the few women in the field. In: Eilene Galloway, 'World Security and the Peaceful Uses of Outer Space' in United States, *Legal Problems of Space Exploration. U.S. Senate 87th Congress.* (US Government Printing Office 1961).

[82] C Wilfred Jenks, *Space Law* (Stevens & Sons 1965) 193.

A minority of scholars adopt the position that the province of all humankind falls within the scope of CHM.[83] This argument is flawed because the Moon Agreement positioned the CHM in relation to the Moon, while connected the province of all humankind to its freedom of exploration and use (Article 11(1) and 4(1), respectively). As a consequence, their scope of application is different.

There is minimal agreement among scholars about the precise meaning of the province of all humankind. Province of humankind encompasses pluralities, refers to humankind as a collective, and not just to certain specific citizens of determined nations. Koch argues that province of humankind embodies the 'interests of all', and that the CHM is an expansion of that concept.[84]

Finally, another interpretative approach that challenges the argument of *res nullius* arguments is to apply Article 31 (1) of the Vienna Convention on the Law of Treaties (VCLT).[85] The object and purpose of the OST was the application of its norms for the benefit of all humankind. Thus, it is logical to adopt an interpretation that does not include singulars (one person, one country, just some nations, one corporation etc.). This approach is also applicable to the interpretation of the CHM.[86]

[83] Tronchetti (n 58) 90.

[84] Jonathan Sydney Koch, 'Institutional Framework for the Province of All Mankind: Lessons from the International Seabed Authority for the Governance of Commercial Space Mining' (2018) 16 Astropolitics 1, 5.

[85] Article 31 (1): "1.A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose".

[8686] For an examination of the sources of international law: Samantha Besson and Jean D'Aspremont (eds), *The Oxford Handbook on the Sources of International Law* (First edition, Oxford University Press 2017).

II. Common heritage of humankind[87]

The CHM concept is similarly indeterminate. The meaning of this term is not specified by treaties (Article 11(1) of the Moon Agreement). In Oduntan's view, the problem is not with conceptualising the term, but the legal and practical application of the term to ILOS.[88] Others argue that the concept contains no legal content,[89] and that it belongs to the 'realm of politics, philosophy or morality and not law'.[90] For instance, according to Pahuja, 'the thrust of the principle was the exploitation of resources and the redistribution of the proceeds, not conservation for future generations'.[91] Matte exposes that the deficiencies of the Moon Agreement arise because of the reliance on the indeterminacy of CHM, as it is 'too often offered as a *fata morgana* in a *vacuum juris*'.[92]

These positions of Pahuja and Matte support the argument that the CHM regime was designed to maintain its indeterminacy. Article 11 of the Moon Agreement places the CHM into a hermetic system:

> Article 11 (1). The moon and its natural resources are the common heritage of mankind, which finds its expression in the provisions of this Agreement, in particular in paragraph 5 of this article.
>
> […]
>
> 5. States Parties to this Agreement hereby undertake to establish an international regime, including appropriate procedures, to govern the exploitation of the natural resources of the moon as such exploitation is about to become feasible. This provision shall be implemented in accordance with article 18 of this Agreement.

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[87] For the history of the CHM: Surabhi Ranganathan, 'The Common Heritage of Mankind: Annotations on a Battle', *The Battle for International Law* (Oxford University Press 2019).

[88] Oduntan (n 66) 193.

[89] LFE Goldie, 'A General International Law Doctrine for Seabed Régimes' (1973) 7 The International Lawyer 796, 819.

[90] Stephen Gorove, 'The Concept of "Common Heritage of Mankind": A Political Moral Or Legal Innovation' (1972) 9 San Diego Law Review 390, 402.

[91] Sundhya Pahuja, 'Conserving the World's Resources?' in James Crawford and Martti Koskenniemi (eds), *The Cambridge Companion to International Law* (3rd edn, Cambridge University Press 2013).

[92] Nicolas Mateesco Matte, 'The Common Heritage of Mankind and Outer Space: Toward a New International Order for Survival' (1987) 12 Annals of Air and Space Law 313, 335.

One can observe that Article 11 of the Moon Agreement sets up a self-contained regime, indicating that CHM was to be further regulated to delineate a clear legal scope. Article 11(1), which provides that the CHM principle 'finds its expression in the provisions of this Agreement', refers to Article 11(5). Subsequently, Article 11(5) refers to Article 18. However, Article 18 has never been implemented:

> Article 18. Ten years after the entry into force of this Agreement, the question of the review of the Agreement shall be included in the provisional agenda of the General Assembly of the United Nations in order to consider, in the light of past application of the Agreement, whether it requires revision. […] A review conference shall also consider the question of the implementation of the provisions of article 11, paragraph 5, on the basis of the principle referred to in paragraph 1 of that article and taking into account in particular any relevant technological developments.

The lack of definition is the tragedy of the CHM in ILOS.[93] Article 18 is the reason why some name the Moon Agreement a failed regime.[94] But, despite some indeterminacies, the Moon Agreement provides a minimum set of values. The CHM concept has a *res communis* basis and a *nexus* to the province of all humankind.

[93] Naman Khatwani, 'Common Heritage of Mankind for Outer Space' (2019) 17 Astropolitics 89, 93.

[94] Scott J Shackelford, 'The Tragedy of the Common Heritage of Mankind' (2009) 28 Stanford Environmental Law Journal [i], 149.

III. The power of indeterminacies

The imprecision of the terms that compose the cosmic commons enables the false argument that *res nullius* is applicable to outer space, or that the cosmic commons are 'outside the law, a space of freedom'.[95] Another problem posed by indeterminacy is its potential to mask functional coherences.[96] For example, Hertzfeld *et al.* affirm that words such as *res communis, res nullius*, global commons, *res extra commercium*, common-pool resources, anticommons, public good(s), and free goods were never used in any single treaty of the *corpus iuris spatialis*.[97] According to them, the only word used was 'common heritage' in the Moon Agreement.[98] However, textual interpretation fails to convince because it limits itself to the precise legal terms used, disregards other interpretative methods,[99] and leads to a reading of outer space as *res nullius*.[100]

Consequentially, the fact that those specific terms are not used gives rise to the following argument: In the case of a state that has not ratified the Moon Agreement, the OST is the only provision that limits the use and exploration of the Moon and celestial bodies, a treaty that also does not expressly contain the word *res communis*.[101] The core *rationale* is the openness of

[95] Surabhi Ranganathan, 'Sea Change' in Annabel Brett, Megan Donaldson and Martti Koskenniemi (eds), *History, Politics, Law: Thinking through the International* (Cambridge University Press 2021) 288.

[96] Michel Foucault, *Society Must Be Defended: Lectures at the Collège de France, 1975-76* (François Ewald ed, Penguin 2020) 7.

[97] Hertzfeld, Weeden and Johnson (n 80) 4.

[98] ibid 10.

[99] Odile Ammann, 'The Interpretative Methods of International Law: What Are They, and Why Use Them?' (Brill | Nijhoff 2020) 192 <https://brill.com/view/book/9789004409873/BP000010.xml>.

[100] Monica Vidaurri and others, 'Absolute Prioritization of Planetary Protection, Safety, and Avoiding Imperialism in All Future Science Missions: A Policy Perspective' (2020) 51 Space Policy 101345, 6; Konrad Szocik, Tomasz Wójtowicz and Leszek Baran, 'War or Peace? The Possible Scenarios of Colonising Mars' (2017) 42 Space Policy 31, 36. Antonella Forganni, 'The Potential of Space Tourism for Space Popularisation: An Opportunity for the EU Space Policy?' (2017) 41 Space Policy 48. Also Pahuja (n 91) 384; Rogers, 'The Sea of the Universe: How Maritime Law's Limitation on Liability Gets It Right, and Why Space Law Should Follow by Example' (2019) 26 Indiana Journal of Global Legal Studies 741, 759.

[101] Hanneke van Traa-Engelman, 'The Commercial Exploitation of Outer Space: Issues of Intellectual Property Rights and Liability' (1991) 4 Leiden Journal of International Law 293, 303.

outer space to exploitation and disregard of the scholarship created over the decades of outer space as a cosmic commons.[102] The exploration and use of outer space are not prohibited, but they have to be in harmony with other principles, such as the prohibition of national appropriation (Articles I of the OST and 11(c) of the Moon Agreement). The same arguments about the application of Article 31(1) of the Vienna Convention on the Law of Treaties would apply equally here.[103]

Thus, the impact of indeterminacy is twofold. It creates weaknesses by attempting to protect the cosmic commons, but at the same time it aids non-spacefaring countries in counter-balancing neocolonial attempts to enclose outer space.[104] Sutch and Roberts write that:

> (e)ach time the International Community has encountered a new resource pool becoming available for development, for which questions of sustainable and equitable exploitation emerge alongside security concerns about military use, their debates have circled in on the set of potentially radical notions and values that we find in diverse commons regimes.[105]

Notwithstanding the imprecision in language, there is a core value in the concepts of *res communis*, province of humankind, and CHM. Even though those terms have different connotations, there is a commonality in that they all refer to the idea of common good. To assert that private appropriation or state exploitation are permittable within those concepts is to deny their underlying community value and the regime designed by both the OST and the Moon Agreement. For example, even if one suggests that those concepts are imprecise and do

[102] D Goedhuis, 'Legal Aspects of the Utilization of Outer Space' (1970) 17 Netherlands International Law Review 25, 25.

[103] Jean D'Aspremont, 'International Legal Methods: Working for a Tragic and Cynical Routine.', *Research Methods in International Law* (1st edn, Deplano, Rossana; Tsagourias, Nicholas 2021).

[104] Feichtner and Ranganathan (n 59) 546. The Bogotá Declaration, signed by Global South countries, is an example of this. The Declaration tried to clarify some of the terms of the OST, such as geostationary earth orbit, but face enormous resistance from developed countries. Zachos A Paliouras, 'The Non-Appropriation Principle: The *Grundnorm* of International Space Law' (2014) 27 Leiden Journal of International Law 37.

[105] Peter Sutch and Peri Roberts, 'Outer Space and Neo-Colonial Injustice: Distributive Justice and the Continuous Scramble for Dominium' (2019) 46 International Journal of Social Economics 1291, 1296.

not prohibit appropriation *per se*, this argument is open to be challenged by Article II of the OST and Article 11(2) of the Moon Agreement:

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

> Article 11 (2). The moon is not subject to national appropriation by any claim of sovereignty, by means of use or occupation, or by any other means.

It is essential to emphasise the term 'or by any other means' in both provisions. This expression creates an open clause to protect outer space, the Moon, and celestial bodies against national appropriation. Those provisions all refer to a communal idea. The argument that the terms are imprecise and enable private appropriation by countries or private companies contradicts the clear stance of those norms. Regardless of the existence of international standards, the appropriation is already being implemented in domestic legislation and multilateral agreements.

C. Outer space as res nullius in domestic jurisdictions and multilateral agreements

Spacefaring nations were strategic in not ratifying the Moon Agreement, as this enabled them to implement changes to their domestic legislation instead and treat outer space as *res nullius*. Despite their attempts, a fundamental protection persists in the OST in Article II, which contains a norm that prohibits national appropriation.

If the cosmic commons are something that humankind shares *a priori,*[106] domestic legislation, in principle, must respect the collective logic. However, under the neocolonial paradigm, indeterminacies have more substantial power. Indeterminacies provide argumentative grounds for spacefaring states to depart from the communal principle in the *corpus iuris spatialis*.

The USA was one of the nations that presented a draft of the Moon Agreement in 1972 but never ratified it.[107] Domestically, the USA created laws about outer space access, namely the US Commercial Space Launch Competitiveness Act 2015. This legislation permits USA citizens to possess and own space resources. Its Title IV rules state:

> §51302 (1) ASTEROID RESOURCE. —The term 'asteroid resource' means a space resource found on or within a single asteroid.
>
> (2) SPACE RESOURCE.
>
> (A) IN GENERAL.—The term 'space resource' means an abiotic resource in situ in outer space.
>
> (B) INCLUSIONS.—The term 'space resource' includes water and minerals.
>
> § 51303. Asteroid resource and space resource rights
>
> A United States citizen engaged in commercial recovery of an asteroid resource or a space resource under this chapter shall be entitled to any asteroid resource or space resource obtained, including to possess, own, transport, use, and sell the asteroid resource or space resource obtained in accordance with applicable law, including the international obligations of the United States.[108]

[106] Pahuja (n 91) 400.

[107] Tronchetti (n 58) 98.

[108] United States, U.S. Commercial Space Launch Competitiveness Act.

Creating a space industry without any accountability to international collective interests violates the province of humankind concept. The phrase 'entitled to any asteroid resource or space resource obtained, including to possess, own, transport, use, and sell the asteroid resource or space resource obtained' directly conflicts with Article II of the OST. In Koch's words, it 'remains questionable whether the bootstrapping of a new industry through unilateral action serves the interests of all'.[109]

The second country to legislate the exploration of outer space was Luxembourg. The Luxembourgian law for the exploration of outer space came into effect on 20 July 2017[110]. The first Article sets a bold declaration that '(l)es ressources de l'espace sont susceptibles d'appropriation'.[111] For the appropriation of space resources, the corporation needs to ask for an agreement before the Luxembourgian government (Article 2(1)), and Article 3 poses the commercial finalities of the space resources and does not include scientific research:

> L'agrément est accordé à un exploitant pour une mission d'exploration et d'utilisation des ressources de l'espace à des fins commerciales sur demande écrite adressée aux ministres.[112]

Article 4 determines that only private corporations registered in Luxembourg can obtain an agreement for exploration:

> L'agrément pour une mission ne peut être accordé que si le demandeur est une société anonyme, une société en commandite par actions ou une société à responsabilité limitée de droit luxembourgeois ou une société européenne ayant son siège social au Luxembourg.[113]

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[109] Koch (n 84) 5.

[110] Luxembourg, Loi du 20 juillet 2017 sur l'exploration et l'utilisation des ressources de l'espace. 2017.

[111] Free translation: 'space resources are susceptible of appropriation'.

[112] Luxembourg Loi du 20 juillet 2017 sur l'exploration et l'utilisation des ressources de l'espace. (n 110). Free translation: 'Approval is granted to an operator for a mission of exploration and use of space resources for commercial purposes upon written request addressed to the ministers'.

[113] Free translation: 'Art. 4. Approval for a mission can only be granted if the applicant is a public limited company, a partnership limited by shares or a limited liability company under Luxembourg law or a European company having its registered office in Luxembourg'.

Feichtner reveals that Luxembourg invoked '(f)rench law of the 19th century recognising – as does the international law of the High Seas – the right to appropriate as *res communis* shellfish and fish on the High Seas beyond national jurisdiction'.[114] The Luxembourgian law is paradigmatic because '(s)ince the law entered into force, Planetary Resources Inc. has established a European headquarter in Luxembourg and Deep Space Industries, another Silicon Valley space mining company, also has opened an office in Luxembourg'.[115] Luxembourg, therefore, is a haven for companies to initiate outer space exploration.

On 19 December 2019, the United Arab Emirates promulgated the Federal Law n. (12) of 2019. This marked the first time that a domestic jurisdiction legislated in relation to manned spaceflights. Article 14 contains the rules about permission for space activities, and Article 18(1) makes it possible for corporations, with a permit from the Emirates Space Agency, to explore and obtain space resources:

> Article 14 - Permits for Space Activities
> 1- It is prohibited to own a Space Object, carry out or participate in Space Activities, or establish, use or possess related facilities or utilities without obtaining a Permit from the Agency.
> 2- The general conditions, controls and procedures related to the Permit, including its granting, renewal, amendment, cancellation, suspension, assignment to others, inclusion in or attachment to a Permit previously granted, shall be determined by a decision issued by the Council of Ministers or whomever it delegates.
>
> Article 18(1)- Subject to the provisions of Article (14) of this Law, the conditions and controls relating to Permits for the exploration, exploitation and use of Space Resources, including their acquisition, purchase, sale, trade, transportation, storage and any Space Activities aimed at providing logistical services in this regard shall be determined by a decision issued by the Council of Ministers or whomever it delegates.[116]

[114] Feichtner (n 58) 265.

[115] ibid 267.

[116] United Arab Emirates, Federal Law N. (12) of 2019.

One can observe from Article 14(1) that, with a permit, a private company can own space objects, can establish facilities in celestial bodies, and from Article 18(1) can insert those objects into the market.

Japan was the fourth country to regulate access to outer space resources domestically. On 23 June 2021, it passed a legislation that allows private exploration of outer space upon receipt of a permission from the Japanese government: 'の的確かつ円滑な実 施を図りつつ、民間事業者による宇宙資源の探査及び開発に関する事業活動を促進することを目的 とする'.[117] The free translation of this passage is: '(t)he purpose is to promote business activities related to the exploration and development of space resources by private businesses, while ensuring accurate and smooth implementation'. Therefore, Japanese law follows the same rationale as the other ones above.

At the international level, Australia, Canada, Italy, Japan, Luxembourg, the United Arab Emirates, the United Kingdom, and the USA signed the Artemis Accords on 13 October 2020. This is the first multilateral agreement signed among spacefaring nations about outer space exploration in a forum that is not at the UN. Currently, 18 countries are signatories of the Artemis Accords, with those cited and including Brazil, New Zealand, Poland, Mexico, the Republic of Korea, Ukraine, Israel, Romania, Bahrain, and Singapore.[118]

The preamble contains the provision that the Artemis Accords are for 'the benefit for all humankind to be gained from cooperating in the peaceful use of outer space'. Interestingly, the preamble also states that the Artemis Accords conform to international norms. Despite this, the Artemis Accords omitted the Moon Agreement, which specifically relates to the extraction and exploration of space resources:

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[117] Japan, 宇宙資源の探査及び開発に関する事業活動の促進に関する法律（八三). Free translation: 'Law Concerning Promotion of Business Activities Related to Exploration and Development of Space Resources (83)'.

[118] NASA, 'Singapore Signs Artemis Accords' (*NASA*, 29 March 2022) <https://www.nasa.gov/feature/singapore-signs-artemis-accords> accessed 4 April 2022.

> AFFIRMING the importance of compliance with the *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*, opened for signature on January 27, 1967 ("Outer Space Treaty") as well as the *Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space*, opened for signature on April 22, 1968 ("Rescue and Return Agreement"), the *Convention on International Liability for Damage Caused by Space Objects*, opened for signature on March 29, 1972 ("Liability Convention"), and the *Convention on Registration of Objects Launched into Outer Space,* opened for signature on January 14, 1975 ("Registration Convention"); as well as the benefits of coordination via multilateral forums, such as the United Nations Committee on the Peaceful Uses of Outer Space ("COPUOS"), to further efforts toward a global consensus on critical issues regarding space exploration and use.

This section of the preamble suggests that the Moon Agreement was not referred to in the creation of the Artemis Accords because most of the nations involved did not ratify it. However, Australia and Mexico did, so it is arguable that the Moon Agreement was left out purposefully.[119]

Moreover, Section 10 of the Artemis Accords specifically refers to space resources and a hypothetical compliance with the OST:

> SECTION 10 – SPACE RESOURCES
> 1. The Signatories note that the utilisation of space resources can benefit humankind by providing critical support for safe and sustainable operations.
> 2. The Signatories emphasise that the extraction and utilisation of space resources, including any recovery from the surface or subsurface of the Moon, Mars, comets, or asteroids, should be executed in a manner that complies with the Outer Space Treaty and in support of safe and sustainable space activities. The Signatories affirm that the extraction of space resources does not inherently constitute national appropriation under Article II of the Outer Space Treaty, and that contracts and other legal instruments relating to space resources should be consistent with that Treaty.

Even though Section 10(2) of the Artemis Accords affirms that the extraction is not national appropriation, there is a norm that creates safety zones for those nations to extract

[119] United Nations, 'Status of International Agreements Relating to Activities in Outer Space as at 1 January 2021. A/AC.105/C.2/2021/CRP.10' (n 12).

space resources. Section 11(11) provides that these zones are a territorial delimitation in the celestial body for research, extraction, and utilisation of space resources:

> Section 11 (11). The Signatories commit to use safety zones, which will be expected to change, evolve, or end based on the status of the specific activity, in a manner that encourages scientific discovery and technology demonstration, as well as the safe and efficient extraction and utilisation of space resources in support of sustainable space exploration and other operations. The Signatories commit to respect the principle of free access to all areas of celestial bodies and all other provisions of the Outer Space Treaty in their use of safety zones. The Signatories further commit to adjust their usage of safety zones over time based on mutual experiences and consultations with each other and the international community.

Those norms evidence an 'extraterritorial land-grab in outer space'.[120] They recognise property rights in celestial bodies and allow countries to provide financial incentives to private enterprises.[121] The domestic jurisdiction of outer space creates a 'first come, first served' relation that the OST prohibits.[122] The drafters of the Moon Agreement tried to prevent this rush for conquest. For example, during the Moon Agreement negotiations, the Brazilian representative argued: 'the principle of "first come, first served" is simply unacceptable to us. This is why we regard as very important, indeed essential, the provision of the treaty which confirms that the Moon and other celestial bodies are the common heritage of humankind'.[123]

Nowadays, while certain nations are expressly against the enclosure of outer space,[124] space powers, such as China, Russia and the USA, are rushing to join and produce among

[120] Feichtner (n 58) 257.

[121] ibid 262.

[122] Paul B Larsen, 'Outer Space: How Shall the World's Governments Establish Order Among Competing Interests?' (2019) 29 Washington International Law Journal 1, 55.

[123] United Nations, 'Verbatim Record of the Two Hundred and Third Meeting of the Committee on the Peaceful Uses of Outer Space' (United Nations General Assembly 1979) A/AC.105/PV.203 <https://www.unoosa.org/oosa/oosadoc/data/documents/2016/aac.105/aac.1051113_0.html> accessed 15 February 2022.

[124] United Nations, 'Report of the Legal Subcommittee on Its Fifty-Fifth Session, Held in Vienna from 4 to 15 April 2016' (United Nations General Assembly 2016) A/AC.105/1113 14 <https://www.unoosa.org/oosa/oosadoc/data/documents/2016/aac.105/aac.1051113_0.html> accessed 15 February 2022.

themselves multilateral agreements like the Artemis Accords. Some of them include the EU, Japan, India, South Korea, and the United Arab Emirates.[125] From 2022 onwards, countries like South Korea, Israel, Russia, and India will attempt to launch their lunar spacecrafts.[126] Another example is Artemis I. This is a joint project by four different inter-regional space agencies, namely NASA, European Space Agency (ESA), Canadian Space Agency (CSA), and Japan Aerospace Exploration Agency (JAXA).[127] Lastly, Russia, China, Iran,[128] Pakistan, and Saudi Arabia are creating a formal bond among themselves for space exploration.[129]

Right after the approval of the USA's regulation, Tronchetti analysed some possible paths for ILOS. Even though he focused on the US Commercial Space Launch Competitiveness Act, his findings are analogous to the examples shown above. He argued that:

> Considering its questionable consistency with international space law, any attempt to implement it (in the sense of a US company effectively undertaking asteroid mining activities) could: a) face strong opposition by other States; b) give way to parallel, non-US, asteroid mining initiatives; c) be viewed as a violation by the United States of its obligations under the space treaties; d) cause instability in the international legal regulation of outer space activities; e) and, because of the above reasons, be ultimately delayed or even cancelled.[130]

The domestic jurisdictions and the Artemis Accords show that parallel initiatives have prevailed, causing inconsistency in international regulation.[131] The neocolonial strategy to

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[125] Aliberti *et al* make a methodological study to analysed the capacity of space powers and spacefaring nations. Marco Aliberti, Matteo Cappella and Tomas Hrozensky, 'Measuring Space Power: An Empirical Assessment' in Marco Aliberti, Matteo Cappella and Tomas Hrozensky, *Measuring Space Power* (Springer International Publishing 2019) 54 <http://link.springer.com/10.1007/978-3-030-15754-8_3> accessed 15 February 2022.

[126] Sakshi Tiwari, 'Lunar Race Heats-Up In 2022 – Why Over 7 Countries Are Headed To Moon Including US, Russia, India & China?' (*The Eurasian Times*, 12 January 2022) <https://eurasiantimes.com/lunar-race-2022-why-over-7-to-moon-us-russia-india-china/> accessed 26 April 2022.

[127] The Economist, 'Everyone's Going to the Moon' [2022] *The Economist* 58, 58.

[128] India is the only spacefaring country that has signed, but not yet ratified, the Moon Agreement. < https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/status/index.html> accessed on 12 February 2022.

[129] The Economist (n 127) 60.

[130] Fabio Tronchetti, 'The Space Resource Exploration and Utilization Act: A Move Forward or a Step Back?' (2015) 34 Space Policy 6, 9.

[131] Rossana Deplano, 'The Artemis Accords: Evolution or Revolution in International Space Law?' (2021) 70 International and Comparative Law Quarterly 799, 802.

leave the Moon Agreement in a void and to use the language of the commons is what Koskenniemi calls a politics of re-definition.[132] The re-definition of the international regime uncovers the fact that 'none of the already adopted national space mining laws implements the requirement that the use of outer space shall be carried out for the benefit and in the interest of all countries'.[133] As the commons and their freedoms were crafted so broadly, it is possible for countries like the USA and Luxembourg to simply either capture outer space through national legislation or define their state practice for future customary international law.[134] Vidaurri *et al.'s* study on space missions concluded that '(t)he language used by governments and their respective agencies regarding a state presence in space currently reflects *terra nullius* law'.[135]

The language of the commons is not the only technique relied on to support the neocolonial exploration of outer space. Development is another language that enables spacefaring nations to explore outer space. The norms cited above do contain language relating to development, but other practices clearly and empirically demonstrate the imperial power that development can produce in outer space.

[132] Martti Koskenniemi, 'The Politics of International Law' 11.

[133] Martin Svec, 'Outer Space, an Area Recognised as Res Communis Omnium: Limits of National Space Mining Law (In Press)' [2022] Space Policy <https://linkinghub.elsevier.com/retrieve/pii/S0265964621000655> accessed 15 February 2022.

[134] Detlev Wolter, *Common Security in Outer Space and International Law* (UNIDIR 2006) 98.

[135] Vidaurri and others (n 100) 4.

3. THE LANGUAGE OF DEVELOPMENT

The cosmic commons and development are intrinsically linked. Post-Cold War, development became a subject for the exploration of outer space. The developmental strategy is used to convince populations that all humankind will be the beneficiary of space exploration. However, in reality, only a few corporations and nations will have access to outer space and its resources. Consequently, it is vital to ascertain development in outer space and consider how corporations are construing a different developmental narrative.

A. The concept of development in outer space

The Cambridge Dictionary clarifies that development is 'the process in which someone or something grows or changes and becomes more advanced'.[136] Outer space advancement is understood as technological and economic conquest, an idea that comes from the Cold War construction of the *corpus iuris spatialis*.

Development is adjacent to three values in the OST: economy, science, and cooperation. This assertion comes from the Preamble and Article I of the OST:

> Preamble
>
> Believing that the exploration and use of outer space should be carried on for the benefit of all peoples irrespective of the degree of their economic or scientific development,
>
> […]
>
> Believing that such cooperation will contribute to the development of mutual understanding and to the strengthening of friendly relations between States and peoples,

[136] Cambridge University Press, 'Development' (*Cambridge Dictionary*) <https://dictionary.cambridge.org/dictionary/english/development> accessed 22 March 2022.

> Article 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.

Development in the OST is a mechanism for equality among peoples and between countries. Moreover, Article I of the OST links development with the exploration and use of outer space, identifying it as something that shall be the province of all humankind (the language of the commons). This syllogism also exists in the Moon Agreement. Its preamble and Article 4(1) position development as an instrument for cooperation and equality among countries. Interestingly, the end of Article 4(1) raises social and economic concerns in relation to the exploration and use of space resources. Additionally, it links development to the United Nations Charter:

> Preamble: Determined to promote on the basis of equality the further development of cooperation among States in the exploration and use of the moon and other celestial bodies […]

> Article 4 (1). The exploration and use of the moon shall be the province of all mankind and shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development. Due regard shall be paid to the interests of present and future generations as well as to the need to promote higher standards of living and conditions of economic and social progress and development in accordance with the Charter of the United Nations.

Finally, Article 11(7) and Article 18 of the Moon Agreement position development with the conservation of the natural resources of the Moon and technological innovations:

> Article 11(7). The main purposes of the international regime to be established shall include:
>
> (a) The orderly and safe development of the natural resources of the moon;

> Article 18. […] A review conference shall also consider the question of the implementation of the provisions of article 11, paragraph 5, on the basis of the principle referred to in paragraph 1 of that article and taking into account in particular any relevant technological developments.

The contextual interpretation of these norms (Article 31(1) of the VCLT) confirms that both the OST and the Moon Agreement place development as an instrument for humankind to access new technologies, enhance cooperation, and improve equality on Earth. The Moon Agreement embodied the CHM principle and the redistribution of technological benefits. When one adopts the same method of identifying the core values in the language of development in ILOS, collective interests become evident. Nevertheless, the developmental strategy used by spacefaring nations departs from this notion of community (the language of the commons).

I. The developmental strategies

The postcolonial method demonstrates how spacefaring nations and private entities use development to boost their own interests. There are two ways in which the developmental strategy shapes ILOS to benefit spacefaring nations: Firstly, through the rule of universality. Secondly, by conceptualising development as freedom.[137]

The first developmental strategy is immersed in the arguments set out above for the language of the cosmic commons. Pahuja clarifies that the potential rule of international law is universal. This universality is the underlying notion that permeates values like *res communis*, province of humankind and CHM.[138] As development is linked to the language of the commons, domestic jurisdictions create their understanding of the cosmic commons. The national norms, also entrenched in the developmental discourse, facilitate corporations' access to space resources. What was *res communis* is now *res nullius* for the sake of development. This is a policy long ago desired by some spacefaring nations. For example, in 1963, in the

[137] Pahuja (n 21) 176.

[138] ibid.

House of Commons, Mr Foot argued: 'Does he think that the United States Government have the right to treat the Universe as if it belonged to them—like some Latin-American State?'[139]

The second strategy is what Pahuja nominates as 'modern developmentalism'.[140] Coloniser countries are now named developed. There is a separation of politics and economy in institutions, and there is a transfer in the *locus* of decision-making power.[141] In outer space, developed countries are now spacefaring nations; the *locus* for decision-making is shifted from the UN to domestic jurisdictions, and these jurisdictions use private policy to delegate exploration to private corporations (economy).

The OST and the Moon Agreement designed the use and exploration of outer space and celestial bodies to be based on cooperation and equality among states. The technological benefits from space exploration were to be shared among all countries equally, whether spacefaring or not (Article 18 of the Moon Agreement). Notwithstanding this, development has crafted a platform for sharing the benefits with just a few states and corporations. During the OST negotiations, the Argentinian representative adverted: '(b)ut if the principle of the freedom of outer space is generally accepted today it is also imperative that we recognise that, as yet, only two great States are in a position to make use of such magnificent possibilities'.[142] With the Artemis Accords, the number has grown nominally from two (USA and USSR) to eighteen countries among 193.[143]

Two assessments uncover how the developmental strategies disadvantage non-spacefaring countries. The first one reviews the current access to outer space. The second

[139] HC Deb 16 May 1963, vol 677, col 1539-42.

[140] Pahuja (n 21) 5.

[141] ibid 38.

[142] United Nations, 'Verbatim Record of the Twelve Hundred and Eleventh Meeting of the Committee on the Peaceful Uses of Outer Space.' (United Nations General Assembly 1961) A/C.1/PV.1211.

[143] 193 is the number of members of the United Nations. <https://www.un.org/en/about-us/member-states#gotoP> access on 22 March 2022.

considers how private projects shape the developmental discourse. Both use the language of the commons, yet modern developmentalism is the motivating force that further drove the inequalities within the space race.

B. The current access to outer space

> *'No moon, no planet, shall ever fly a single nation's flag'.*
> Mr Plimpton, Representant of the United States, at the second meeting of the Committee on the Peaceful Uses of Outer Space[144].

Non-spacefaring states lose a critical place in terms of access to space resources because they do not possess the same powers[145] or technological access in comparison to spacefaring nations.[146] In this context, maintaining a developmental narrative to explore or use celestial bodies or the Moon is almost inescapable. The continuance of international law's colonial past is evident and is revealed in the fact that spacefaring nations have easier access to technology and resources to the detriment of the rest. While developing countries tried to apply the CHM principle to the Moon Agreement to bar the possible spatialisation of exploitation, developed ones did not ratify it. They strategically remained in the jurisdiction created by the OST. This treaty is less effective at redistributing technological benefits than the Moon Agreement.[147] Matte was aware of this and its potential to contribute to the exploitation of the cosmos and developing countries. He stated that the understanding that non-spacefaring states could not be exploited was not explicit and that 'there must be some obligation on the space powers to act responsibly towards the international community'.[148] Access to outer space and the fact that developed countries are the ones giving this access to corporations are two facts that evidence the disadvantage of developing countries in this regard.

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[144] United Nations, 'Verbatim Record of the Second Meeting of the Legal Sub-Committee on the Peaceful Uses of Outer Space' (Committee of the Peaceful Uses of Outer Space 1962) verbatim A/AC.105/PV.2* 16.

[145] BS Chimni, 'Anti-Imperialism: Then and Now' in Luis Eslava, Michael Fakhri and Vasuki Nesiah (eds), *Bandung, Global History, and International Law: Critical Pasts and Pending Futures* (Cambridge University Press 2017) 37.

[146] Finley and Oreskes demonstrate that the scientific capacity is another colonial argument used strategically by developed states. In Carmel Finley and Naomi Oreskes, 'Maximum Sustained Yield: A Policy Disguised as Science' (2013) 70 ICES Journal of Marine Science 245.

[147] Oduntan (n 66) 217. and Brunnée (n 48) 559.

[148] Nicolas Mateesco Matte, *Space Activities and Emerging International Law* (McGill University 1984) 322.

For example, the number of rocket bodies currently in orbit shows that the USA controls 37.29% of in orbit debris, followed by China (18.37%) and France (2.45%), while the Global South controls only 5%.[149] According to van Eijk, this 'leaves the governance of critical orbits entirely to a spaceborne few'.[150]

Another example is the origin of organisations that cooperate in the International Space Station (ISS).[151] The map provided by NASA in figure 1 demonstrates that there is not a single developing country involved in the ISS project.

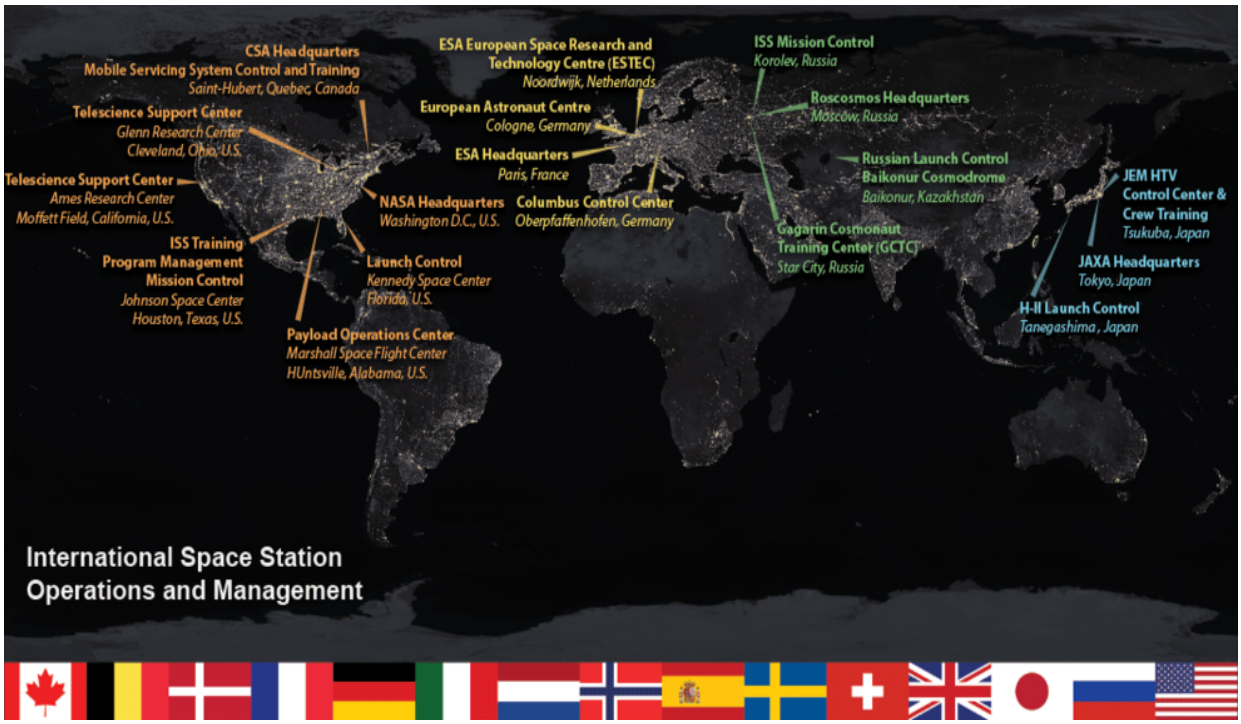

Fig. 1.[152]

However, Fitzmaurice and Henderson challenge van Eijk's argument. They posit that the ISS is an example of a successful model for the participation of many nations and regional

[149] Numbers extracted from Space-Track on 10 December 2021. < https://www.space-track.org/#boxscore> accessed 10 December 2021.

[150] Cristian Van Eijk, 'Unstealing the Sky: Third World Equity in the Orbital Commons' [2022] Air and Space Law 25, 27.

[151] < https://www.nasa.gov/mission_pages/station/cooperation/index.html> accessed 16 February 2022.

[152] Figure taken from NASA. < https://www.nasa.gov/mission_pages/station/cooperation/index.html> accessed 16 February 2022.

organisations.[153] That said, comparing the ISS distribution with the signatories of the Artemis Accords, one can see that there is straightforward maintenance of the *locus* of outer space power.

Another critical piece of research is a report authored by Jonathan McDowell.[154] The report assesses the distribution of satellite launches from 2012 to 2021. In 2021, a total of 1827 satellites were launched into outer space. From this amount, 1244 originated from the USA (68%) and 351 from Europe (19.21%). The rest of the world only accounted for 5.5% of the satellites launched. This data is shown in figure 2 below.

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Russia	22	29	34	27	15	24	23	31	22	20
USA	35	85	110	112	95	282	303	306	974	1244
China	25	18	26	44	40	36	98	73	74	110
Europe	22	34	28	22	22	42	60	49	133	351
Other	28	41	63	31	50	60	84	65	60	102
Total	132	207	261	236	222	444	568	524	1263	1827

Fig. 2.[155]

From the European cohort, the UK launched 291 satellites in 2021. This number is substantially higher than all the satellites launched by Latin America (11), the Middle East (14), and Africa (3) combined.[156]

[153] Joshua Fitzmaurice and Stacey Henderson, 'On the Legality of Mars Colonization' 40 Adelaide Law Review 841, 851. Mai'a Cross bases her theory on the principle of cooperation but calls it 'ultrasociality theory'. Mai'a K Davis Cross, 'Outer Space and the Idea of the Global Commons' (2021) 35 International Relations 384, 385. Klinger also defends cooperation among countries using the Cold War as an example. In Julie Michelle Klinger, 'A Brief History of Outer Space Cooperation Between Latin America and China' (2018) 17 Journal of Latin American Geography 46, 49.

[154] Jonathan McDowell, 'Space Activities in 2021' (2022) Rev 1.6 <https://planet4589.org/space/papers/space21.pdf> accessed 23 March 2022.

[155] ibid.

[156] ibid 10.

The second comparison is the type of satellite launches, whether government or commercial owned. McDowell illustrates that out of 'the 146 orbital launch attempts: 70 were carried out by governments; 27 by commercial companies under contract to their host governments, and 49 by commercial companies for commercial customers, including foreign governments'.[157] Among the 49 orbital launches owned by commercial companies, 22 (44.89%) are owned by SpaceX Falcon 9.[158]

These figures demonstrate that a few select spacefaring countries and corporations have access to space in an unconstrained way.[159] The language of national legislation clashes directly with the language of the commons. Development in outer space is reformed to enhance economic growth.[160] That is why another essential aspect of modern developmentalism is the allocation of power to private companies. In ILOS, these enterprises have an emerging place as stakeholders.

[157] ibid 6.

[158] ibid 7.

[159] Ranganathan, 'Sea Change' (n 95) 293.

[160] Pahuja (n 21) 222.

C. Private projects

Arendt wrote that the Earth 'is the very quintessence of the human condition'. Humans in outer space will cut 'the last tie through which every man belongs among the children of nature'.[161] Some private space projects use the human condition as a compelling motive for space exploitation. They adopt freedom and development as a myth that transforms the Earth into mere objectivity.[162] Can non-spacefaring nations, minorities throughout the world, and the protection of Earth's ecosystem also personify the narratives?[163] Are all persons on Earth contemplated when tickets for Mars colonisation will cost between a hundred thousand to half a million dollars?[164]

The privatisation of outer space exploration is another way in which outer space is treated as *res nullius,* [165] which contradicts its classification as a commons. [166] Transnational corporations mobilise to gain control over land,[167] and *res nullius* serves as the perfect tool. It is a legal instrument that fosters new modes of land appropriation,[168] especially when new predictions demonstrate that the market value of space mining will achieve US$3.9 billion by

[161] Hannah Arendt, *The Human Condition* (2nd ed., The University of Chicago Press 2018).

[162] Max Horkheimer and others, *Dialectic of Enlightenment* (Stanford University Press 2002) 6.

[163] For an intersection of minorities rights and the postcolonial state see Mohammad Shahabuddin, *Minorities and the Making of Postcolonial States in International Law* (1st edn, Cambridge University Press 2021) <https://www.cambridge.org/core/product/identifier/9781108678773/type/book> accessed 13 February 2022.

[164] Elon Musk said on Twitter: 'Very dependent on volume, but I'm confident moving to Mars (return ticket is free) will one day cost less than $500k & maybe even below $100k. Low enough that most people in advanced economies could sell their home on Earth & move to Mars if they want'. Elon Musk, '@elonmusk' (*Twitter*, 11 February 2019) <https://twitter.com/elonmusk/status/1094796246613516289> accessed 16 February 2022.

[165] Vidaurri and others (n 100).

[166] Steer (n 45).

[167] Ntina Tzouvala, 'A False Promise? Regulating Land-Grabbing and the Post-Colonial State' (2019) 32 Leiden Journal of International Law 235, 252.

[168] Umut Özsu, 'Grabbing Land Legally: A Marxist Analysis' (2019) 32 Leiden Journal of International Law 215, 233.

2025.[169] Investment groups have nominated space mining and tourism as the 'next investment frontier'.[170]

The rhetoric of development, especially when infused with references to benefit humankind, places the arguments in a transcendental sphere of belief.[171] It is almost impossible to resist inter-stellar projects because they are 'outside the sphere of politics or human decision'.[172] Development here 'operates as just such a faith, most particularly as a belief in the way to bring salvation to mankind'.[173]

The OST and the Moon Agreement envisaged outer space exploration to be state-governed. Despite this, the practices of private companies represent the 'rule by company' method. Koskenniemi explains that this is a form of French colonial expansion dating back to the 17th century, by which France allowed private companies to explore international territory to maintain its imperial power through private persons.[174] Durrani exemplifies this method with the 'economic exploitations of Christopher Columbus in Latin America or the East India Company in South and East Asia'.[175] Whenever companies depart to celestial bodies, they operate private property rights and expand the territorial conquer of certain states.[176]

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[169] M Garside, 'Space Mining - Statistics & Facts' (*Statista*, 2 August 2021) <https://www.statista.com/topics/3279/space-mining/#dossierKeyfigures> accessed 16 February 2022.

[170] Noah Proponak and others, 'Space. The Next Investment Frontier. Goldman Sach's Report.' (Goldman Sachs 2017) <http://www.fullertreacymoney.com/system/data/files/PDFs/2017/October/4th/space%20-%20the%20next%20investment%20frontier%20-%20gs.pdf> accessed 16 February 2022.

[171] Michel Foucault, *The Archaeology of Knowledge* (Routledge 2013) 28.

[172] Pahuja (n 21) 75.

[173] ibid 70.

[174] Martti Koskenniemi, *To the Uttermost Parts of the Earth: Legal Imagination and International Power, 1300-1870* (Cambridge University Press 2021) 508.

[175] Haris A Durrani, 'Interpreting Space Resources Obtained: Historical and Postcolonial Interventions in the Law of Commercial Space Mining' (2019) 57 Columbia Journal of Transnational Law 403, 433.

[176] Andrew Fitzmaurice, 'Scepticism of the Civilizing Mission in International Law' in Martti Koskenniemi, Walter Rech and Manuel Jiménez Fonseca (eds), *International Law and Empire* (Oxford University Press 2017) 369.

American corporations stand out in this scenario. In July 2021, there was a rivalry amongst them to launch the first private spaceflight. First, Virgin Galactic's founder Richard Branson went on a sub-orbital flight on 11 July 2021. After his flight, he wrote: 'My mission statement, which I wrote inside my spacesuit, is to turn the dream of space travel into a reality - for my grandchildren, for your grandchildren, for everyone'.[177]

In the same month, Blue Origin launched its flight. Blue Origin is a project founded by former Amazon CEO Jeff Bezos with the motto: 'We're committed to building a road to space so our children can build the future'.[178] It launched its first crewed spaceflight on 20 July 2021,[179] and now plans a commercial space park by 2030.[180] On 15 September 2021, SpaceX launched the World's first amateur astronaut crew to orbit the Earth.[181] Its CEO Elon Musk has publicly announced his plans to make humankind a multi-planetary species.[182]

These projects come from humanitarianism or 'passion of compassion' discourse.[183] The universal standard of civilisation is again used, and it is based on a 'thrust of "entrenched modernity" that seeks to extend its univocal vision to all geographical spaces'.[184] Onder calls

[177] Richard Branson, 'Flying to Space Onboard Virgin Galactic' (*Virgin*, 11 July 2021) <https://www.virgin.com/branson-family/richard-branson-blog/flying-to-space-onboard-virgin-galactic> accessed 15 February 2022.

[178] <https://www.blueorigin.com/about-blue> accessed 15 February 2022.

[179] Samantha Mathewson, 'Blue Origin's First Crewed Launch Breaks Four Guinness World Records' [2021] *Space* <https://www.space.com/blue-origin-first-crewed-launch-four-world-records> accessed 15 February 2022.

[180] < https://www.bbc.co.uk/news/world-us-canada-59046076> accessed 15 February 2022.

[181] Alexandra Villarreal, 'SpaceX Launches World's First "Amateur Astronaut" Crew to Orbit Earth' [2021] *The Guardian* <https://www.theguardian.com/science/2021/sep/15/spacex-launch-amateur-astronauts-passengers> accessed 15 February 2022.

[182] Michael Sheetz, 'Elon Musk Wants SpaceX to Reach Mars so Humanity Is Not a "Single-Planet Species"' [2021] *CNBC* <https://www.cnbc.com/2021/04/23/elon-musk-aiming-for-mars-so-humanity-is-not-a-single-planet-species.html> accessed 15 February 2022.

[183] Hannah Arendt, *On Revolution.* (Penguin 1973) 88.

[184] BS Chimni, 'Legitimating the International Rule of Law' in James Crawford and Martti Koskenniemi (eds), *The Cambridge Companion to International Law* (3rd edn, Cambridge University Press 2013).

the CEOs of such companies 'space barons'.[185] He noted that 'Bezos thanked his company's workers and customers for paying for his trip', and that 'Blue Origin is reported to hold at least 19 patents' of space technologies.[186] Under the Paris Convention for the Protection of Industrial Property, patents are exclusive private rights that with a diverse finality than concepts of province of humankind (Article I of the OST) and CHM (Article 11 of the Moon Agreement). Thus, the technological advancement that would benefit all humankind is a patent of only one company.[187]

Development in outer space entails cooperation and equality among nations, but the reality now is a market-based competition. In 2021, the USA created Astro2020,[188] a project to launch a telescope like Hubble in the early 2040s with a cost of about US$11 billion. This plan was propelled by the fact that Europe is building a massive telescope in Chile.[189] Another example is Mars One, founded in 2011. Even though it was non-profit space research, media corporations heavily subsidised Mars One.[190] In 2021, Blue Origin lost a lawsuit against NASA over a highly lucrative lunar lander project awarded to Space X.[191] As yet another example of countries' competitiveness, Freeman points out that Chinese outer space policies aim to either further Chinese sovereignty in airspace or avoid a possible USA monopolisation.[192]

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[185] Harun Onder, 'On Space Barons and Global Poverty' (*Brookings*, 9 September 2021) <https://www.brookings.edu/blog/future-development/2021/09/09/on-space-barons-and-global-poverty/> accessed 23 March 2022.

[186] ibid.

[187] One should observe here that patents are for the technology that enables access to outer space.

[188] The report is not an open resource, and it costs $104 to access. The only public resource available are the public briefing slides: < https://www.nap.edu/resource/26141/Astro2020-slides.pdf> accessed on 29 November 2021.

[189] Alexandra Witze, 'US Astronomy's 10-Year Plan Is Super-Ambitious' (2021) 599 Nature 192.

[190] Mars One, 'Mars One's Journey' <https://www.mars-one.com/> accessed 29 November 2021.

[191] Lisa Kim, 'Bezos' Blue Origin Loses Lawsuit Against NASA Over Lucrative Lunar Lander Contract Awarded To Musk's SpaceX' [2021] *Forbes* <https://www.forbes.com/sites/lisakim/2021/11/04/bezos-blue-origin-loses-lawsuit-against-nasa-over-lucrative-lunar-lander-contract-awarded-to-musks-spacex/?sh=444ac4942259> accessed 15 February 2022.

[192] Carla P Freeman, 'An Uncommon Approach to the Global Commons: Interpreting China's Divergent Positions on Maritime and Outer Space Governance' (2020) 241 The China Quarterly 1, 17.

Arguments of growth and profit gain traction to the detriment of *res communis*. The OST and the Moon Agreement preferred the language of the commons, but modern developmentalism pampers *res nullius* practices. International norms positioned province of humankind and CHM to foster equality and cooperation among countries. In agreement with Ranganathan, this movement of enhancing growth and profit to the detriment of social values is a symptom of a late-capitalist post-modernity.[193] As a result of that period, the cosmic commons and development became 'a set of fresh strategies that ensured suitable conditions for universalising capital which requires larger geographical spaces with harmonised laws for effective operation'.[194] For the reinsertion of communal values, ILOS must undergo a process of decolonisation.

[193] Surabhi Ranganathan, 'Seasteads, Land-Grabs and International Law' (2019) 32 Leiden Journal of International Law 205, 7.

[194] BS Chimni, 'The International Law of Jurisdiction: A TWAIL Perspective' [2021] Leiden Journal of International Law 1, 38.

4. DECOLONISING INTERNATIONAL LAW OF OUTER SPACE

The necessity to decolonise ILOS is mainly an attempt to enforce the values and norms of both the OST and the Moon Agreement. Domestic legislation and private corporations' projects have misrepresented the values and principles of those two treaties. For that reason, the ratification of the Moon Agreement and its regulation are the best approach to bar the spatialisation of neocolonialism.

A. Regulation of the Moon Agreement

A pragmatic solution for the decolonisation of the outer space regime is the call for regulation of Article 11(5) of the Moon Agreement. This approach requires the primary measure of ratification of the Moon Agreement by spacefaring nations. When the international community faces determined threats, the international *fora* respond quickly.[195] Non-spacefaring nations can use the UN forum to advance the need for the ratification of the Moon Agreement. A compelling argument is that the Moon Agreement is better suited for exploring outer space resources than the OST. The former 'expressly provides for resource exploration' and 'offers a legal framework for parties'.[196]

The regulation of outer space exploration is a method for non-spacefaring countries and minorities to advocate their interests and humankind to embody more than the 'world's consumer'.[197] Additionally, international regulation can create cosmopolitan global governance of outer space,[198] and the Moon Agreement provisions can be used as anti-imperial

[195] Like the Russian Aggression on Ukraine. UNGA Resolution A/ES-11/L.1. < https://documents-dds-ny.un.org/doc/UNDOC/LTD/N22/272/27/PDF/N2227227.pdf?OpenElement> access on 23 March 2022.

[196] Khatwani (n 93) 98.

[197] Feichtner (n 58) 271.

[198] Babcock defends the use of a public trust doctrine for outer space common pool resources. In Babcock (n 75) 193.

policies for a better distribution of space access and objective and clear norms about distributing the profits from exploring outer space.[199] Regulation is one of the propositions of The Hague Space Resources Governance Working Group. For this group, the 'international framework should address States and international organisations and could provide for the regulation of the conduct of States, international organisations, and non-governmental entities'.[200] According to Mallick and Rajagopalan, 'universal activity like space exploration mandates an international guideline'.[201] Therefore, regulation is an instrument to fit for the purposes of distribution of access to communal spaces, such as outer space. Domestic legislation, as shown before, permits the appropriation of celestial bodies to only a few.

There is the question of which principles and set of rules the outer space regime would have. However, Articles 11(5), (6) and (7) of the Moon Agreement establish minimum standards, such as the principle of public information; the safe development of the natural resources of the moon; the rational management of resources; and, most importantly, the principle of equitable sharing:

> Article 11(7)(d) An equitable sharing by all States Parties in the benefits derived from those resources, whereby the interests and needs of the developing countries, as well as the efforts of those countries which have contributed either directly or indirectly to the exploration of the moon, shall be given special consideration.

[199] Durrani (n 175) 428.

[200] Hague International Space Resources Governance Working Group, 'Building Blocks for the Development of an International Framework on Space Resources Activities' (Hague International Space Resources Governance Working Group 2019) <https://www.universiteitleiden.nl/en/law/institute-of-public-law/institute-of-air-space-law/the-hague->.

[201] Senjuti Mallick and Rajeswari P Rajagopalan, 'If Space Is "the Province of Mankind", Who Owns Its Resources? The Potential of Space Mining and Its Legal Implications' (2019) 182 Observer Research Foundation Occasional Paper 17 <https://www.orfonline.org/research/if-space-is-the-province-of-mankind-who-owns-its-resources-47561/> accessed 22 March 2022.

Thus, regulation is not a blank paper on which countries will write new rules. On the contrary, Article 11(7) of the Moon Agreement has core principles that refer to the languages of the cosmic commons and of development.

Another important aspect is the agent of such regulation. This organ will be the mechanism responsible for stabilising commercial irregular opportunities and reducing the potential weaponisation of outer space.[202] In Kealotswe-Matlou's words:

> One ought to simply look at other successful specialised organisations such as the International Civil Aviation Organization (ICAO), International Telecommunications Union (ITU), World Trade Organization (WTO), World Health Organization (WHO), etc., to know that having an authority focused on and specialising in governing outer space can succeed.[203]

One may argue for the creation of a new organ at the UN for this task. However, the better approach is to attribute regulation to COPUOS.[204] This is the best option,[205] as COPUOS was established by the UN General Assembly on 13 December 1958[206] and has two subsidiary bodies: the Scientific and Technical Subcommittee and the Legal Subcommittee, founded in 1961. COPUOS has already legal and scientific members at its disposal to implement

[202] Icho Kealotswe-Matlou, 'The Rule of Law in Outer Space: A Call for an International Outer Space Authority' in Icho Kealotswe-Matlou, *War and Peace in Outer Space* (Oxford University Press 2020) 105.

[203] ibid.

[204] It is not the scope of this research to advance all the possible problems that regulation can produce in the cosmic commons. For a broader discussion of regulation see: Jacqueline Peel, *Science and Risk Regulation in International Law* (Cambridge University Press 2010); Walter Mattli and Ngaire Woods, *The Politics of Global Regulation* (Princeton University Press 2009) <https://www.degruyter.com/document/doi/10.1515/9781400830732/html> accessed 24 March 2022; Daniel Carpenter and David A Moss, *Preventing Regulatory Capture: Special Interest Influence and How to Limit It* (Cambridge University Press 2013).

[205] Eduardo D Gaggero, 'Quo Vadis COPUOS?' (1986) 2 Space Policy 196, 199.

[206] United Nations Office of Outer Space Affairs, 'History' <https://www.unoosa.org/oosa/en/aboutus/history/index.html> accessed 23 March 2022.

consulting and compliance mechanisms.[207] Also, because of maintenance of knowledge, it is best to adapt an existing institution devoted to space development than to create a new one.[208]

[207] Joseph N Pelton, 'The International Challenges of Regulation of Commercial Space Flight' in Michael Mineiro (ed), *Space Safety Regulations and Standards* (Elsevier 2010) 174.

[208] Ram S Jakhu and Yaw Nyampong, 'International Regulation of Emerging Modes of Space Transportation' in Michael Mineiro (ed), *Space Safety Regulations and Standards* (Elsevier 2010) 175.

B. Some lessons from the regulation of the global commons

Regulation can foster some neocolonial practices. Non-spacefaring countries must be aware of the developmental and regulatory languages for the due accountability of an outer space governance system.[209] Koskenniemi explains that without this awareness, managerialism would only 'allocate decision-making powers to the native speakers of their attendant vocabularies'.[210] Even though international organisations can be captured, an international forum still is a better solution than the domestic jurisdiction.[211] As Durrani discusses, '(w)ithout the capabilities necessary to access space, Global South States only have recourse to lawfare'.[212] Nonetheless, a concrete approach is to analyse how was the implementation of two other global commons regimes, namely the Antarctic and the High Seas.

I. The Antarctic Regime

The Antarctic Treaty is another Cold War creation.[213] When the USA discovered a potential territorial interest in that region,[214] Jessup tried to classify Antarctica as *terra nullius* for a possible exploitation. Additionally, Fitzmaurice demonstrated that Jessup and Taubenfeld tried to export the same *res nullius* claim they made about Antarctica to the outer space:

> Jessup and Taubenfeld examined similarities in the legal conflicts over the Antarctic and space, and they employed the tools of 'terra nullius' and 'res nullius' to assist the comparison. This legal continuity points to the endurance of European

[209] Su (n 13) 1008.

[210] M Koskenniemi, 'The Politics of International Law - 20 Years Later' (2009) 20 European Journal of International Law 7, 16; Cassandra Steer, 'Sources and Law-Making Processes Relating to Space Activities', *Routledge Handbook of Space Law* (Routledge 2016).

[211] Boaventura de Sousa Santos, *Toward a New Legal Common Sense: Law, Globalization, and Emancipation* (3rd edn, Cambridge University Press 2020) 368.

[212] Durrani (n 175) 447.

[213] Craven (n 59) 564. For a criticism on the neocolonial creation of the Antarctic Treaty: Alejandra Mancilla, 'A Continent of and for Whiteness?: "White" Colonialism and the 1959 Antarctic Treaty' (2019) 55 Polar Record 317.

[214] Fitzmaurice (n 52) 323.

> expansion, which passed into the new frontier of space at precisely the historical moment that decolonisation was gaining momentum. […] The arguments that had been used to debate the justice of colonisation were now turned to space exploration. This should hardly come as a surprise because the ideas of the use and exploitation of nature that underpinned the understanding of property were at the heart of the motivation for European expansion.[215]

The categorisation of Antarctica as *res nullius* was not successful, and that area is widely recognised today as a global commons. The Antarctic Treaty was the model for the Moon Agreement,[216] but the Antarctic Treaty produced a successful bar on sovereignty claims and exploration of mineral resources.[217] Article IV(2) of the Antarctic Treaty is a "'freeze' or moratorium on sovereignty claims advanced by a number of countries",[218] mainly because Antarctica is a frail ecosystem[219]. Article 7 of the Protocol on Environmental Protection to the Antarctic Treaty determines a fifty-year moratorium on non-scientific mining. Bruhns and Haqq-Misra wrote that '(u)ntil the year 2048, no non-scientific mining may occur in Antarctica unless there is unanimous agreement by all parties and a binding legal regime on Antarctic mineral resource activities is in force'.[220]

A moratorium on outer space mining and colonisation is a solution up until the implementation of the Moon Agreement extractive regime.[221] The Antarctic regime's moratorium was based on a precautionary environmental concern and provided *tempo* for the

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[215] ibid 324.

[216] Mahulena Hofman, 'Moon and Celestial Bodies', *Max Planck Encyclopedias of International Law* (Oxford University Press 2010).

[217] Thomas Cottier and Sofya Matteotti-Berkutova, 'International Environmental Law and the Evolving Concept of "Common Concern of Mankind"' in Thomas Cottier, Olga Nartova and Sadeq Z Bigdeli (eds), *International Trade Regulation and the Mitigation of Climate Change* (Cambridge University Press 2009) 21.

[218] Jorge E Viñuales and Pierre-Marie Dupuy, *International Environmental Law.* (Second edition, Cambridge University Press 2018) 138.

[219] Another analogous example is the Whaling Convention moratorium.

[220] Sara Bruhns and Jacob Haqq-Misra, 'A Pragmatic Approach to Sovereignty on Mars' (2016) 38 Space Policy 57, 60.

[221] Barbara Ellen Heim, 'Exploring the Last Frontiers for Mineral Resources: A Comparison of International Law Regarding the Deep Seabed, Outer Space, and Antarctica Note' (1990) 23 Vanderbilt Journal of Transnational Law 819, 848.

international community to understand eventual impacts before implementing extractive projects. Jakhu and Pelton teach that the Antarctic Treaty is an example that can be imported to outer space governance. For them, when 'there is sufficient shared political will, States are very able to come to an agreement on binding international norms'.[222] The Antarctic treaty entered into effect with only 12 countries, and now 54 have ratified it.[223] This demonstrates that it is possible and advisable for more countries, especially those who will be affected by unequal access to outer space, to ratify the Moon Agreement and implement its regime.

II. The High Seas' regime

The 1982 United Convention of the Law of the Seas (UNCLOS) made it possible for areas beyond national jurisdiction to be vastly exploited and appropriated.[224] Despite the Moon Agreement's first use of the CHM principle, UNCLOS permitted the CHM to be weakened to explore the seabed and mineral resources.[225] During its negotiations, developing countries were concerned about transforming the oceans from *res communis* to CHM, while developed ones positioned the CHM principle as a socialist agenda.[226]

Notwithstanding that the CHM was accepted into the text,[227] the antinomies in CHM were manipulated to the disadvantage of developing states and the exploitation of the seabed by technologically advanced countries.[228] When developed countries became concerned that

[222] Jakhu and Pelton (n 58) 37.

[223] Secretariat of the Antarctic Treaty, 'The Antarctic Treaty' <https://www.ats.aq/e/antarctictreaty.html> accessed 23 March 2022.

[224] Rogers (n 100) 759.

[225] Ranganathan, 'The Common Heritage of Mankind' (n 87) 36.

[226] ibid 48.

[227] Ranganathan argues that Cold War highly influenced UNCLOS. As an example, USSR changed its position towards the CHM principle when it saw a possible collusion among Western countries. ibid 50.

[228] ibid 48.

developing states were trying to push progressive and redistributive interests, they created new ways to reduce dialogue with closed meetings.[229] This is a form of strategic treaty conflict.[230]

UNCLOS created legal geographies that had no correspondence to the physical world. For example, the deep seabed is an open system that cannot be disconnected from the oceans' waters, fauna, and flora. However, UNCLOS portrayed it as a closed system.[231] The enclosure happened when countries discovered the potential of commercial activities there. Furthermore, UNCLOS reduced the notion of *res communis* and made the CHM apply only to the Area, namely the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction (Article 1(1)(1) of UNCLOS).

The CHM consolidated a 'primarily extractive imaginary' and receded the idea of redistribution in favour of commercial considerations.[232] International law was the tool for the construction of a 'legal geography that diverged from the physical'.[233] This geography was shaped by ideals that 'gave expression to influential understandings of the ocean, but its regimes were built on the silencing of other possibilities: other geographies, other economic imaginaries and indeed other epistemic understandings'. [234] This is what Ranganathan denominates as 'the greatest land-grab of all'.[235] The consequence of all this is that all living resources within the Area are no longer protected.[236] The land grab is a neocolonial capture of

[229] Surabhi Ranganathan, 'Decolonization and International Law: Putting the Ocean on the Map' (2020) 23 Journal of the History of International Law / Revue d'histoire du droit international 161, 177.

[230] Surabhi Ranganathan, *Strategically Created Treaty Conflicts and the Politics of International Law* (Cambridge University Press 2014) 210.

[231] Surabhi Ranganathan, 'Global Commons' (2016) 27 European Journal of International Law 693, 714.

[232] Ranganathan, 'Sea Change' (n 95) 302.

[233] ibid 287.

[234] Ranganathan, 'Decolonization and International Law' (n 229) 180.

[235] Surabhi Ranganathan, 'Ocean Floor Grab: International Law and the Making of an Extractive Imaginary' (2019) 30 European Journal of International Law 573, 5.

[236] ibid 28.

the CHM regime, with the displacement of environmental issues and cosmopolitan visions and the ascension of developmental and commercial interests.[237]

The jurisdictional creation at the High Seas is something underway in outer space. The Artemis Accords create 'safety zones' for outer space resource exploration unrelated to physical realities. Whilst for the oceans the legal construction facilitated the depletion of natural resources,[238] domestic outer space law expedites a different extraction: illegal national and private appropriation of celestial territories.

During the Cold War, the Global South had fears about certain new ideas even though these ideas could benefit the Third World. Some countries denied proposals during UNCLOS' negotiations because there was an indication of use of the ocean for warfare.[239] In moments of crisis, contentious measures are frequently adopted. An example is the creation of a trusteeship zone, which would benefit developing countries. However, developing countries did not accept the trusteeship, even though it would provide benefits to them. Ranganathan maintains that this was a 'resentment at the neo-colonial undertones of a suggested resource allocation scheme as well as suspicion that it was an attempt to deflect the CHM principle'.[240] The same political pattern happened during the OST and the Moon Agreement negotiations. States like Mongolia and Brazil feared the return of colonial regimes.[241] No trusteeship was remotely envisaged in either of the treaties, and many states were more concerned about remote sensing than commercial exploration.[242] When, in 1982, Brazil and Nigeria idealised a similar institution

[237] Ranganathan, 'Global Commons' (n 231) 714.

[238] Ranganathan, 'Sea Change' (n 95) 290.

[239] Ranganathan, 'Ocean Floor Grab: International Law and the Making of an Extractive Imaginary' (n 235) 13.

[240] ibid 14.

[241] United Nations, 'Summary Record of the Sixty-Second Meeting of the Legal Sub-Committee on the Peaceful Uses of Outer Space' (United Nations General Assembly 1966) A/AC.105/C.2/SR.62.

[242] United Nations, 'Verbatim Record of the One Hundredth Meeting.' (United Nations General Assembly 1971) A/AC.105/PV.100.

like the International Seabed Authority for outer space, the USA relied on the weakened bond among Third World Countries to bar the idea.[243]

Non-spacefaring nations do not have to wait to request further ratification of the Moon Agreement and the regulation of its international regime. As the Australian representative argued in 1959 during the OST negotiations:

> (e)xperience in Antarctica may perhaps suggest how difficult it may become to consider the problems of outer space impartially and on a universal plane if decision is left until states have established themselves permanently in the field.[244]

To summarize, the Antarctic regime gives a successful example of using a moratorium until there is a minimum of scientific certainty about extractive damages. The normative suspension is not a new idea in the outer space regime because the USA and USSR entered a voluntary moratorium on anti-satellite weapons (ASAT) during the Cold War.[245] On the other hand, the Deep Seabed regime illustrates how regulation can lead to an irregular allocation of jurisdiction. Thus, the regulation of the international regime idealised by the Moon Agreement needs to consider both the successes and the failures present in the Antarctic and Deep Seabed regimes in order to avoid them being replicated in outer space.[246]

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[243] United States, 'UN Space Conference: Key Issues and Country Positions. Freedom of Information Act, CIA.' <https://www.cia.gov/readingroom/document/cia-rdp83b00851r000100180002-5> accessed 12 February 2022.

[244] United Nations, 'Verbatim Record of the Nine Hundred and Eighty-Sixth Meeting' (United Nations General Assembly 1958) A/C.1/PV.986.

[245] Blount (n 39) 120.

[246] MJ Peterson, 'The Use of Analogies in Developing Outer Space Law' (1997) 51 International Organization 245, 269.

CONCLUSION

The historical and normative construction of ILOS had two pillar stones: the languages of the commons and development. Those two languages are tools of shared dialogue between the indeterminacy of ILOS and development. They crystalise the colonial encounter in this field, which is the drift of power from coloniser and colonised to spacefaring nations and non-spacefaring nations, respectively.[247] One of the main arguments to foster this encounter is to argue that outer space is *res nullius*. However, the *corpus iuris spatialis* is embedded with communal rules, such as CHM, the province of humankind, and *res communis*. The argument that outer space, the Moon, and celestial bodies are *res nullius* contradicts the norms and values that were historically construed to protect outer space from appropriation, such as the OST and the Moon Agreement. In these two treaties, outer space, the Moon, and celestial bodies are cosmic commons (*res communis*).

Currently, domestic legislation, multilateral agreements, and private discourses use the *res nullius* rationale. Domestic jurisdictions create the possibility for national appropriation and delegation of space activities for private companies to explore and create private spaces in celestial bodies. Also, private projects demonstrate how access to outer space today is restricted to only spacefaring countries, especially from the Global North.

The cosmic commons have a shared set of values like province of humankind and CHM. To decolonise outer space is to insert present and future generations, peoples, knowledge, and social values, so they are not isolated for the benefit of economic and growth interests of a few.[248] A mechanism to implement these concepts is for countries to ratify the Moon Agreement and implement the international regime in Article 11. Regulation can encompass

[247] José da Mota-Lopes, 'The Colonial Encounter and Its Legacy', *Oxford Research Encyclopedias* (Oxford University Press 2017) 7.

[248] Boaventura de Sousa Santos, *Epistemologies of the South: Justice against Epistemicide* (Routledge 2016) 95.

other imaginaries,[249] sustainable narratives,[250] and bring equality among spacefaring nations and non-spacefaring ones, especially when Article 11(7) of the Moon Agreement already contains these values. It was presented that COPUOS, already established in the UN to deal with outer space legal and technical matters, should be the organ responsible for the regulation.

Finally, the cosmic commons need to be conscious of the successes and failures of the other global commons. One successful example is the Antarctic regime moratorium, while one example of a failure is the jurisdictional creation of the deep seabed. If the regulation of the Moon Agreement imposes a moratorium on exploration and mining of celestial bodies, the creation of private spaces in these areas will be forestalled until scientific certainty of the environmental impacts and proper redistribution of space access to non-spacefaring countries

[249] Uzma Khan, Huili Wang and Ishraq Ali, 'A Sustainable Community of Shared Future for Mankind: Origin, Evolution and Philosophical Foundation' (2021) 13 Sustainability.

[250] Volker Maiwald and others, 'From Space Back to Earth: Supporting Sustainable Development with Spaceflight Technologies' (2021) 4 Sustainable Earth 3, 16.

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FORM T3: LLM DISSERTATION SUBMISSION DECLARATION
(To be appended to dissertation before submission)

Dissertation submission deadline: 12 noon UK time on Friday 29 April 2022

Candidate number:	9321E
Title of Dissertation:	FROM RES COMMUNIS TO RES NULLIUS: THE NECESSITY TO DECOLONISE OUTER SPACE.

I am submitting this dissertation for:

Paper	34	Number:	International Law of Global Governance
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Declaration

I declare that:

1. I have not previously published or submitted in respect of any doctorate, degree or diploma a paper on the topic of this dissertation.

2. This dissertation is the result of work which has been done principally in the current academic year.

3. This dissertation represents my own work unaided except as specified below:
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5. This dissertation does not exceed 18,000 words in length including footnotes and appendices, but excluding bibliography**.**

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