Title: An Exhortation for a New Space Regime

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This essay concerns the failings of the Outer Space Treaty 1967. The so-called 'Constitution for Space' is no longer adequate in regulating the commercial, technological and political complexities of the modern world – a novel agreement is needed.

The Outer Space Treaty 1967 (OST) fails to provide a sufficient governance framework for the vast changes that have occurred in human activity in space. Human exploits have produced a 'congested, contested and competitive' space environment; a collective problem mandating governance at a global level (Steer, 2015a; Murphy, 2013, 31). Rosenau defines governance at this level as 'systems of rules' (in Weiss, 2000, 807). I thus contend that the 'constitution for space' remains effective if it can: (1) provide sufficient rules for specific human activities in space; and (2) the rules are followed (Blount, 2011, 517). In this essay, I explore three contemporary problems that the OST insufficiently addresses. First, I consider the commercialisation of outer space and the potential for a 'soft' law regulatory framework to govern where the OST does not. Second, I look to the militarisation and weaponization of outer space, facilitated by the ambiguities in the OST. Finally, I assess the wilful disregard for Article II OST with the pursuance of property rights on celestial resources.

1: "It's not safe out here. It's wondrous, with treasures to satiate desires both subtle and gross; but it's not for the timid."

Q, Star Trek: The Next Generation (1989)

The 1967 Outer Space Treaty is an insufficient governance framework for the developments in commercial activity in space. Since its signing, a 'new space race' has begun; most evident in the increase of commercial actors launching satellites, presenting novel risks to our near-Earth orbit (Wood, 2019). SpaceX characterises the scope of the new space economy; developing space tourism and international reliance for re-supply missions to the International Space Station (ISS) (Blount, 2011, 521; Livingstone and Lewis, 2016, 10). The OST does not provide rules for these new developments and is thus inadequate at regulating the commercial market. This is because the OST works on the assumption that space would be the realm of states rather than private entities (Blount, 2011, 518). Blount's 'architecture' analogy articulates this best; when political and social conditions change, law

becomes a 'rigid exo-structure' which inadequately addresses the issues it sought to govern originally (2011, 515).

However, pointing to Article VI, Steer maintains that the OST alludes to commercial activity as states retain responsibility for the actions of 'non-governmental' actors in space (2015a). I recognise some merit in Steer's defence. The OST arguably encourages governance through state established licensing agreements (Blount, 2011, 531). However, licensing agreements are problematic for a number of reasons. First, licensing agreements created by individual states allows for variation. Second, the increasingly international nature of global commerce means that states may try to eschew responsibility by claiming a particular corporation is the responsibility of another state. Furthermore, space governance is only as strong as its weakest link, private actors may seek to relocate to states with relaxed licensing provisions and lower standards. The insufficient governance facilitates crowding in the low-Earth orbit (LEO) and geo-stationary orbit (GSO). This increase of space debris amplifies the risk of 'cascade', wiping out space communications and devastating our near-Earth orbit (Moltz, 2014, 167). All of which can only occur without sufficient international binding commitments.

However, the OST is arguably supplemented by 'soft' law principles to provide effective governance (Steer, 2015a). 'Soft' law refers to a 'spectrum' of norms and non-binding agreements that govern behaviour in outer space (Blount, 2011, 525). In fact, Article I OST encourages this 'accordance with international law', suggesting that subsequent agreements offer important guidance for space governance (United Nations, 2017, 4). One example is the 2002 Space Debris Mitigation Guidelines, this international commitment to reduce space debris provides supplementary guidance on human activity to the OST (Steer, 2015a; Moltz, 2014, 167). Yet, I remain sceptical of a governance framework that relies on non-binding agreements for two reasons. First, 'soft' law is soft; space actors have no obligation to follow its guidance and this is an insufficient barrier to dangerous behaviours in outer space. Second, by relying on supplementary material, the OST is not a governance framework in itself and this lacks the clarity one would expect of the 'constitution for space' (Blount, 2011, 517).

2: "Maybe we were meant to fight our way through, struggle, claw our way up, scratch for every inch of the way."

Captain Kirk, Star Trek: The Original Series (1967)

The Outer Space Treaty insufficiently governs the increase in space-capable military actors. Whilst space exploration has always served military purposes, militarisation is increasing with the original space actors (the USSR and the US) now joined by new spacefaring powers such as China, India, and the EU (Lewis, 2019, 14; Moltz, 2014, 149). These modern militaries are dependent on space technology for satellite imaging, telecommunications, signalling and meteorology (Steer, 2015a; Steer 2015b; Moltz, 2014, 7). However, dependency creates vulnerability. In response, states have developed anti-satellite (ASAT) and defensive debris mitigation capabilities which may all be used as offensive weapons (Steer, 2017, 9; Moltz, 2014, 57). This decreases space security overall and facilitates space warfare.

One might argue that the OST responds to these emerging problems. The OST encourages 'cooperation', 'peaceful purposes', and outlaws nuclear weapons and weapons of mass destruction (WMDs) in orbit (United Nations, 2017, 3; Lewis, 2019, 4). However, the OST and all subsequent agreements have made no effort to ban all military activity, facilitating 'loopholes' for further militarisation of space (Moltz, 2014, 149). This is concerning with the increase in spacefaring actors; whilst the US and USSR shared a common mindset to protect their own space assets more than they sought to destroy each other, there is no certainty that North Korea and Iran will be of the same view (Blount, 2011, 520).

Furthermore, the OST has actually facilitated rather than constrained the development of weapons by the two states. Article I maintains 'free access' to celestial bodies; Iran and North Korea have been permitted to pursue nuclear weapons technology under the guise of 'peaceful purposes', as space launch vehicles require comparable technologies (Blount, 2011, 521). The ambiguous language of the OST means 'peaceful' is open to interpretation. The US has established a 'Space Force', China, India and the US performed ASAT strikes on their own satellites, and as space continues to be the domain to exhibit strength, other actors will likely follow (Milman, 2020; Li, 2019; Blount, 2011, 520). Despite these actions, active states all attest compliance with the 'peaceful purposes' provisions (Li, 2019).

However, Steer suggests that this is not a 'wild west', the OST Article IV not only forbids the use of nuclear weapons, but it also encourages compliance with the UN Charter and other international law (2015b; United Nations, 2017, 4). Again, I am sceptical of this position. The UN Charter does not outline an approach to human activity in space, providing avenues for states to interpret its loosely applied principles. Hickman defends the OST's informal governing bodies and inability to enforce as a way of encouraging state negotiation (2007). In this, although he rejects the OST overall, the writer praises the 'old fashioned' approach, allowing dialogue rather than formalised institutions to settle disputes (Hickman, 2007).

I suspect Hickman has rose-tinted glasses here, history is not peaceful dispute resolution between rational actors, it is conflict over unsettled territory and 'division of spoils' (Moltz, 2014, 4). Whilst this may seem an acceptable approach to settle land disputes, space conflict would prove more deadly with the destruction of our low-Earth orbit (Moltz, 2014, 4). The probability of conflict only increases with the influx of new space-capable actors encouraging greater competition over limited space resources (Moltz, 2014, 7). We see this in the competition for satellites in the geo-stationary orbit dominated by advanced spacefaring nations at the expense of equatorial states, whom the orbit is located above (Steer, 2015a). But Hickman rejects this historical approach, even on land, he claims that competition for territory has more often occurred between the coloniser and the colonised, rather than between empires fighting for land (2007). Hickman cites the 'scramble for Africa' as one example of the European empires distributing land peacefully, suggesting this would also be possible in outer space (2007). In fact, there are signs that cooperation and conflict avoidance is plausible without OST guidelines on militarisation, the ISS for example (Wood, 2019). Nevertheless, Hickman's understanding of history is flawed. Whilst the scramble for Africa points to peaceful distribution of land for the European empires, territorial disputes 'account for the majority of wars between 1816 and 1992' (Vasquez and Henehan, 2001, 136). Furthermore, whilst the ISS aligns with the peaceful principles of the OST, it itself only came to fruition through a highly formalised agreement (Moltz, 2014, 186).

Formal agreements remain more reliable, more stable and provide greater 'clarity of rules' (Moltz, 2014, 156). The OST offers loopholes for rivals to gain 'advantages over their

adversaries', likely to strain further under the weight of 'deep-seated historical animosities' in Asia and the Middle East, necessitating a new binding agreement (Moltz, 2014, 148-151)

3: "The needs of the many outweigh the needs of the few" … "or the one."

Mr Spock and Captain Kirk, Star Trek II: The Wrath of Khan (1982)

The OST is consistently disregarded on national appropriation, pointing to a governance framework that is not governing. Article II of the OST affirms that 'Outer Space… is not subject to national appropriation' (United Nations, 2017, 4). However, the United States provides two examples of appropriation of space resources. First, the US has indicated property rights in relation to asteroid mining through its past behaviour. The acquisition of over 800lbs of lunar material by NASA in the 1960s has been 'strictly controlled', with the US prosecuting those who illegally acquired these materials (Szoka and Dunstain, 2012). The strict control of acquired space resources suggests appropriation, thus indicating customary international law in favour of ownership of extracted space resources (Szoka and Dunstain, 2012). Moreover, the US has sought to write this into statute law. Section 402 of the US Commercial Space Launch Competitiveness Act 2015 outlines explicit property rights for US citizens in the commercial recovery of space resources, stating that Americans have the right to 'possess, own, transport, use, and sell' space resources (Congress.Gov, 2015). President Trump signalled a further disregard for the OST, suggesting that the US does not recognise outer space as a 'global commons', passing an Executive Order encouraging commercial mining of the moon (Trump, 2020; Milman, 2020). All of which stands in direct opposition to the principles outlined in the OST (Oduntan, 2015).

In response, one might posit that the OST does provide the possibility of property rights in outer space. The OST signals that exploration shall be free from 'discrimination', the establishment of space facilities is acceptable, and objects launched into space remain the property of the launching state (Szoka and Dunstain, 2012). Gabrynowicz articulates this further, stating that the OST provides a route for property away from just land ownership, suggesting that 'ports of authority, condominiums, cooperatives' are all a possibility (2007). Even the allocation of satellite orbits by the ITU can be extended and leased, this signals

broad recognition of property even if not explicit orbital possession (Szoka and Dunstain, 2012).

However, I am sceptical of the articulation of property rights in the OST, Hickman is correct in stating that Article II is a binding element of the treaty, explicitly negating such rights (2007). Hickman even suggests that the OST, by producing a commons, has actually produced an ‘anti-commons’ (2007). By this, he means that the removal of property rights also removed incentives for further exploration, causing the ‘Space Age to [sputter] to a crawl’ (Hickman, 2007). In this, he suggests that the OST has been largely successful in preventing sovereignty in outer space, but he claims the purpose of the OST as a means of encouraging exploration, has been a failure (Hickman, 2007). This argument is flawed. First, the OST is a security treaty aimed at limiting Cold War tensions and conflict in outer space, it is not a treaty aimed at incentivising exploration (Blount, 2011, 520). Second, appropriation efforts have occurred with the Russian space agency criticising the US for their efforts to ‘seize other worlds’ (Griffin, 2020). Last, Hickman is also wrong in his suggestion that space exploration has been stifled; activity in space is accelerating without the OST to govern. Therefore, I agree with Hickman that the OST forbids property rights, but I disagree on the aspects of failure; the OST has not circumvented property rights in outer space, leaving a binding treaty with unbound actors.

Unregulated commercial actors, escalating tensions and weaponization, and the rejection of binding elements of the OST signals that the Cold War framework fails to: (1) provide sufficient rules for human activity in space and; (2) ensure their enforcement. I appreciate the challenges in pursuing a novel binding agreement aligning with ‘the notions of a global commons’, as a result of the limited cooperation and ‘freedom of action’ extorted by states (Steer, 2017, 3; Cheng, 2014; Moltz, 2014, 8). Yet, failure to do so presents incomparable dangers as the OST is wholly insufficient as a governance framework.

Reference List

Blount, P.J. (2011). ‘Renovating Space: The Future of International Space Law’. *Denver Journal of International Law and Policy,* Vol. 40, No. 1-3, pp. 515-532.

Cheng, D. (2014). ‘Prospects for U.S.-China Space Cooperation. *The Heritage Foundation,* 9 April 2014 [ONLINE] Available at: https://www.heritage.org/testimony/prospects-us-china-space-cooperation (Last Accessed 15 May 2020)

Congress.Gov. (2015). ‘H.R.2262 – U.S. Commercial Space Launch Competitiveness Act’. *Congress.Gov* [ONLINE] Available at: https://www.congress.gov/bill/114th-congress/house-bill/2262 (Last Accessed 15 May 2020)

Gabrynowicz, J.I. (2007). ‘Still Relevant (and Important) After All These Years: The Case for Supporting the Outer Space Treaty’. *Res Communis* [ONLINE] Available at: https://rescommunis.wordpress.com/2007/10/22/the-outer-space-treaty-still-relevant-and-important-after-all-these-years/ (Last Accessed 15 May 2020)

Griffin, A. (2020). ‘Trump is Trying to Take Control of Other Planets, Russian Space Agency Says’. *The Independent* [ONLINE] Available at: https://www.independent.co.uk/life-style/gadgets-and-tech/news/trump-nasa-planets-russia-space-agency-roscosmos-mining-space-a9452831.html (Last Accessed 15 May 2020)

Hickman, J. (2007). ‘Still Crazy after Four Decades: The Case for Withdrawing from the 1967 Outer Space Treaty’. *The Space Review* [ONLINE] Available at: https://www.thespacereview.com/article/960/1 (Last Accessed 14 May 2020)

Lewis, P. (2019). ‘Create a Global Code of Conduct for Outer Space’. In *Ideas for Modernizing the Rules-based International Order.* Chatham House [ONLINE] Available at: https://www.chathamhouse.org/sites/default/files/publications/research/2019-06-10-Expert-Perspectives.pdf (Last Accessed 14 May 2020)

Li, B. (2019). ‘India Destroys its own Satellite with a Test Missile, Still Says Space is for Peace’. *The Conversation* [ONLINE] Available at: https://theconversation.com/india-destroys-its-own-satellite-with-a-test-missile-still-says-space-is-for-peace-114441 (Last Accessed 15 May 2020)

Livingstone, D., and Lewis, P. (2016). ‘Space, the Final Frontier for Cybersecurity?’. *Chatham House* [ONLINE] Available at: https://www.chathamhouse.org/sites/default/files/publications/research/2016-09-22-space-final-frontier-cybersecurity-livingstone-lewis.pdf (Last Accessed 14 May 2020)

Milman, O. (2020). ‘Trump order encourages US to mine the moon’. *The Guardian* [ONLINE] Available at: https://www.theguardian.com/us-news/2020/apr/07/trump-mining-moon-executive-order (Last Accessed 14 May 2020)

Moltz, J.C. (2014). *Crowded Orbits: Conflict and Cooperation in Space.* New York: Columbia University Press.

Murphy, C. (2013). ‘The Emergence of Global Governance’, in Weiss, T.G., and Wilkinson, R. (eds). *International Organization and Global Governance.* London: Routledge, pp. 23-34.

Oduntan, G. (2015). ‘Who owns space? US asteroid-mining act is dangerous and potentially illegal’. *The Conversation* [ONLINE] Available at: https://theconversation.com/who-owns-space-us-asteroid-mining-act-is-dangerous-and-potentially-illegal-51073 (Last Accessed 15 May 2020)

Steer, C. (2015a). ‘Why international law matters in outer space – Part 1’. *IntLawGrrls* [ONLINE] Available at: https://ilg2.org/2015/05/18/why-international-law-matters-in-outer-space-part-1/ (Last Accessed 14 May 2020)

Steer, C. (2015b). ‘Why international law matters in outer space – Part 2: because, military!’. *IntLawGrrls* [ONLINE] Available at: https://ilg2.org/2015/05/19/why-international-law-matters-in-outer-space-part-2-because-military/ (Last Accessed 14 May 2020)

Steer, C. (2017). ‘Global Commons, Cosmic Commons: Implications of Military and Security Uses of Outer Space’. *Georgetown Journal of International Affairs,* Vol. 18, No. 1, pp. 9-16.

Szoka, B., and Dunstain, J. (2012). ‘Space Law: Is Asteroid Mining Legal?’ *Wired* [ONLINE] Available at: https://www.wired.com/2012/05/opinion-asteroid-mining/ (Last Accessed 15 May 2020)

Trump, D.J. (2020). ‘Executive Order on Encouraging International Support for the Recovery and Use of Space Resources’. *The White House* [ONLINE] Available at: https://www.whitehouse.gov/presidential-actions/executive-order-encouraging-international-support-recovery-use-space-resources/ (Last Accessed 15 May 2020)

United Nations. (2017). ‘Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies’. *United Nations International Space Law: United Nations Instruments* [ONLINE] Available at: https://www.unoosa.org/res/oosadoc/data/documents/2017/stspace/stspace61rev_2_0_html/V1605998-ENGLISH.pdf (Last Accessed 14 May 2020)

United Nations. (2020). ‘UN Charter (full text)’. UN.org [ONLINE] Available at: https://www.un.org/en/sections/un-charter/un-charter-full-text/ (Last Accessed 14 May 2020)

Vasquez, J., and Henehan, M. (2001). ‘Territorial Disputes and the Probability of War, 1816-1992’. *Journal of Peace Research,* Vol. 38, No. 2, pp. 123-138.

Weiss, T.G. (2000). ‘Governance, Good Governance and Global Governance: Conceptual and Actual Challenges’. *Third World Quarterly,* Vol. 21, No. 5, pp. 795-814.

Wood, J. (2019). ‘The Countries with the Most Satellites in Space’. *World Economic Forum* [ONLINE] Available at: https://www.weforum.org/agenda/2019/03/chart-of-the-day-the-countries-with-the-most-satellites-in-space/ (Last Accessed 14 May 2020)

Additional References to Star Trek:

Star Trek II: The Wrath of Khan (1982). [FILM]. California, United States: Harve Bennett and Jack Sowards.

Star Trek: The Next Generation (1989). ‘Episode 16: Q Who’. [VIDEO]. California, United States: Gene Roddenberry and Maurice Hurley.

Star Trek: The Original Series (1967). ‘Episode 24: This Side of Paradise’. [VIDEO]. California, United States: Gene Roddenberry, DC Fontana, and Jerry Sohl.