# JF22 – Colonialism 1AC

# Harvard-Westlake 1AC v1

## Framing [1:22]

#### The status quo is in jeopardy of recreating the same geopolitical relations based on colonial logics in outer space [0:20]

Klinger 18 (Julie Michelle Klinger is a geographer at the University of Delaware. She was formerly Assistant Professor of International Relations at the Frederick S. Pardee School of Global Studies at Boston University.), “A Brief History of Outer Space Cooperation Between Latin America and China”, Journal of Latin American Geography, University of Texas Press, Volume 17, Number 2, July 2018, pg. 51-53, <https://muse.jhu.edu/article/701023> NT

As envisioned during the Cold War in a series of conferences among newly or nearly independent states3, South-South cooperation would consist of mutual support and solidarity among Third World, developing, or nonaligned states. **By sharing technology, expertise, and capital, delegates from these countries envisioned a world in which formerly subjugated nations would build modern and prosperous societies** (Tsing, 2005; Prashad, 2007; Mielniczuk, 2013). Many have critiqued China’s twenty-first century “South-South” and “win-win” rhetoric toward Latin American countries as a ploy to advance asymmetrical, pro-China agendas that reinforce Latin America’s subordinate position in the global division of labor ( Jenkins, 2012; Barbosa, 2010; Moreira, 2007). Although the picture is demonstrably more complex (Mora, 1999; Oliveira, 2004; Klinger, 2015; Narins, 2017; Oliveira, 2017), these critiques arise from legitimate environmental, economic, and geopolitical concerns (Queiroz, 2009; Escudé, 2011; Ray et al., 2017; Ray, 2017; Pirzkall, 2017). However, it is noteworthy that in keeping with the mid-twentieth-century ideals of South-South cooperation, in the outer space sector the exchange of scientific and technological expertise has actually occurred, with several African, Asian, and Latin American countries supporting the advancement of one another’s space programs (Wood & Weigel, 2012; Sarli et al., 2015; Peter, 2006; Nagendra, 2016). This is not to suggest that outer space cooperation is benign or apolitical. **Existing inequalities and political struggles on Earth are manifest in outer space development** (e.g. Committee, 2009; Jasentuliyana, 1994). A growing body of geographical literature analyzes **outer space as a key area in which Earthly politics are expressed and an increasingly important arena with which Earthly political economies are coproduced** (Beery, 2011; Messeri, 2016). The manner in which outer space is imagined and represented is dialectically related to ongoing practices of resource use, technological development, and scientific research on Earth (Geppert, 2007; Beery, 2016; Klinger, 2017). Human engagement with outer space reflects unequal power relations on Earth, while also holding the potential to either mitigate or exacerbate structural injustices. In an important recognition of the capacity for human society to engage in outer space for better or for worse, the international community enshrined outer space as the “province of all mankind [sic],” and mandated that it be used only for peaceful purposes in the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies (hereafter Outer Space Treaty, or OST) (UN, 1967). **Because the services provided by spacebased technologies are so crucial to economic, political, and cultural globalization, access to outer space and use of space-based data is important to culture, scientific progress, development, and geopolitical competition** 52 Journal of Latin American Geography (Penley, 1997; Parks & Schwoch, 2012; Harrison, 2013). Therefore, contemporary society cannot be understood without considering “the ever-increasing dependence of mankind [sic] on space-based services,” (Al-Rodhan, 2016, p. 124). This includes the importance of outer space to capital accumulation (Dickens, 2007; Klinger, 2017), military strategy (Dolman, 2002; Sage, 2008), and the maintenance of heteropatriarchy (Pesterfield, 2016; Weitekamp, 2004). The accumulating significance of outer space-based technologies compels us to rethink those areas of outer space in which human activity is concentrated as immediately relevant to Earthly affairs at all levels, rather than as being beyond the global. This requires social scientists to rescale our inquiries to account for a defining feature of our age: the behavior of markets, states, social movements, and scientists is mediated through outer space-based technologies. These technologies link local, national, and international actors and institutions to their enabling infrastructures in outer space. Practically speaking, this means that orbital space is another critical scale of inquiry in social science in general, and in Latin America-China relations in particular. This mirrors a similar insight with respect to scholarship on Latin America-China relations after the first decade of the twenty-first century. As relations between the two regions expanded beyond high-level state-tostate meetings with the growing protagonism of subnational and transnational actors, several researchers adjusted their epistemological frameworks to account for the important processes taking place at scales other than the nation-state that formed the substance of bilateral relations (Armony & Strauss, 2012; Klinger, 2015; Oliveira, 2018 [forthcoming]; Klinger & Muldavin, 2018 [forthcoming]). Taking a cue from diaspora studies (Ma & Cartier, 2003) and geographic critiques of state-centric international relations theories (Agnew, 1994, 2010), this scholarship views Latin America-China relations as playing out on many scales in addition to the nation-state. Taking the role of outer space-based technology and cooperation into account broadens the geographical scope of existing literature to consider a crucial arena in which Latin America-China relations are forged. For China and various Latin American states, **outer space is a critical site for national development, in which the projection of sovereignty and geopolitical power serves as a democratizing mechanism in global fields of science, technology, and strategy.** Understood in this way, the recent history of Latin America-China engagement acquires a more expansive theoretical, empirical, and historical-geographical character. Each of these aspects are briefly examined in turn. Theoretically, the spirit of scientific collaboration in outer space and related research, vouchsafed by the mandates for peaceful use in the 1967 Outer Space Treaty, provides an important check to geopolitically charged framings that tend to predominate China-LAC scholarship (Carver, 1987; Markoff, 1976; Zhao, 2016). Both the history and the significance of China-LAC space cooperation are largely unknown, even among practitioners, policymakers, and scholars of this dynamic and growing relationship. This means research and policy debates have proceeded with little awareness or appreciation 53 A Brief History of Outer Space Cooperation of the profound scientific and technological ties between China and Latin America in this sector. As a result, key developments such as joint satellite launches and the construction of space-related infrastructure tend to be treated as a novelty at best, or with passing alarmism at worst, rather than examined for new theoretical insights about the cooperative configurations of contemporary geopolitics. Empirically, trade, investment, and the impact of both comprise the bulk of the literature on Latin America-China relations. Cooney (2016), Ray (2017), Domingues (2009), inter alia, maintain that the expansion of Latin America-China relations has led to the “reprimarization” of Latin American economies as China demands ever-greater shares of the region’s agricultural and mineral production. While this is demonstrably the case across several Latin American states (Escher, Schneider, & Ye, 2017), there is more to the picture. Outer space cooperation is fundamental to the political economy of Latin America-China relations beyond what it enables in primary commodity extraction. There is significant overlap between space programs and aerospace, scientific, and defense initiatives in international relations in general (Sarli et al., 2015; Pekkanen & Kallender-Umezu, 2010; Cloud & Clarke, 1999; Hulse, 2007). In the case of Latin America, outer space cooperation tends to facilitate scientific and military cooperation, particularly if China agrees to launch LAC satellites. For example, the China National Space Administration (CNSA) launched an Ecuadorian satellite at the Jiuquan Launch Center in Inner Mongolia in 2013 (BBC, 2013). This was followed by a series of high-level exchanges between military officials of both countries every year since, during which the satellite launch was mentioned in formal remarks (CMO, 2017). The significance of satellite technologies is even greater than the support services they provide to the existing political economy or blossoming defense industries. In the case of Brazil and China, space cooperation enabled both sides to independently develop satellites and generate Earth observation data without relying on the United States for imagery essential to monitoring weather, environmental changes, and their respective territories (Furtado & Filho, 2003; da Silva, 2014). **In addition to supporting scientific research in both countries, this was a crucial step toward Southern autonomy in outer space and constituted an important realization of the ideals of South-South cooperation** (Lino, Lima, & Hubscher, 2000; Zhao, 2005; Epiphanio, 2005). This enabled, among other things, Brazil’s space program to develop the world’s preeminent tropical forest monitoring program (Stokstad, 2017). Therefore, examining Latin America-China relations in the space sector reveals empirical data on the geography, history, and motivations of Latin America-China cooperation in general, and on a key overlooked area of global space politics in particular.

#### The scramble to occupy outer space is based in settler logics [0:30]

Smiles 20 (Deondre Smiles, Ph.D. is a postdoctoral scholar at The Ohio State University. A citizen of the Leech Lake Band of Ojibwe, his ongoing research agenda is situated at the intersection of critical Indigenous geographies and political ecology, centered in the argument that tribal protection of remains, burial grounds, and more-than-human environments represents an effective form of ‘quotidian’ resistance against the settler colonial state.), “The Settler Logics of (Outer) Space”, Society and Space, October 26th, 2020, <https://www.societyandspace.org/articles/the-settler-logics-of-outer-space> NT

But, what does this all look like in regard to outer space? In order to really understand the potential (settler) colonial logics of space exploration, we must go back and explore the ways in which **space exploration became inextricably tied with questions of state hegemony and geopolitics during the Cold War**. US and Soviet space programs were born partially out of military utility, and propaganda value—the ability to send a nuclear warhead across a great distance to strike the enemy via a ICBM and the accompanying geopolitical respect that came with such a capability was something that greatly appealed to the superpowers, and when the Soviets took an early lead in the ‘Space Race’ with Sputnik and their Luna probes, the United States poured money and resources into making up ground (Werth, 2004). The fear of not only falling behind the Soviets militarily as well as a perceived loss of prestige in the court of world opinion spurred the US onto a course of space exploration that led to the Apollo moon landings in the late 1960s and the early 70s (Werth, 2004; Cornish, 2019). I argue that this fits neatly into the American settler creation myth referenced by Trump—after ‘conquering’ a continent and bringing it under American dominion, why would the United States stop solely at ‘space’ on Earth? To return to Grandin (2019), **space represented yet another frontier to be conquered and known by the settler colonial state; if not explicitly for the possibility of further settlement, then for the preservation of its existing spatial extent on Earth.** However, scholars such as Alan Marshall (1995) have cautioned that newer logics of space exploration such as potential resource extraction tie in with existing military logics in a way that creates a new way of thinking about the ‘openness’ of outer space to the logics of empire, in what Marshall calls res nullius (1995: 51)[i]. Telescopes on Mauna Kea. (Photo credit: University of Hawaii-Hilo) But we cannot forget the concept of terra nullius and how our exploration of the stars has real effects on Indigenous landscapes here on Earth. We also cannot forget about forms of space exploration that may not be explicitly tied to military means. **Doing so deprives us of another lens through which to view the tensions between settler and Indigenous views of space and to which end is useful.** Indeed, even reinscribing of Indigenous space towards ‘peaceful’ settler space exploration have very real consequences for Indigenous sovereignty and Indigenous spaces. Perhaps the most prominent example of the fractures between settler space exploration and Indigenous peoples is the on-going controversy surrounding the construction of the Thirty Meter Telescope on Mauna Kea, on the island of Hawaii. While an extremely detailed description of the processes of construction on the TMT and the opposition presented to it by Native Hawai’ians and their allies is beyond the scope of this essay, and in fact is already expertly done by a number of scholars[ii], **the controversy surrounding TMT is a prime example of the logics presented towards ‘space’ in both Earth-bound and beyond-Earth contexts by the settler colonial state as well as the violence that these logics place upon Indigenous spaces,** such as Mauna Kea, which in particular already plays host to a number of telescopes and observatories (Witze, 2020). In particular, astronomers such as Chanda Prescod-Weinstein, Lucianne Walkowicz, and others have taken decisive action to push back against the idea that settler scientific advancement via space exploration should take precedence over Indigenous sovereignty in Earth-space. Prescod-Weinstein and Walkowicz, alongside Sarah Tuttle, Brian Nord and Hilding Neilson (2020) make clear that settler scientific pursuits such as building the TMT are simply new footnotes in a long history of colonial disrespect of Indigenous people and Indigenous spaces in the name of science, and that astronomy is not innocent of this disrespect. In fact, Native Hawai’ian scholars such as Iokepa Casumbal-Salazar strike at the heart of the professed neutrality of sciences like astronomy: One scientist told me that astronomy is a “benign science” because it is based on observation, and that it is universally beneficial because it offers “basic human knowledge” that everyone should know “like human anatomy.” Such a statement underscores the cultural bias within conventional notions of what constitutes the “human” and “knowledge.” In the absence of a critical self-reflection on this inherent ethnocentrism, the tacit claim to universal truth reproduces the cultural supremacy of Western science as self-evident. Here, the needs of astronomers for tall peaks in remote locations supplant the needs of Indigenous communities on whose ancestral territories these observatories are built (2017: 8). As Casumbal-Salazar and other scholars who have written about the TMT and the violence that has been done to Native Hawai’ians (such as police actions designed to dislodge blockades that prevented construction) as well as the potential violence to come such as the construction of the telescope have skillfully said, **when it comes to the infringement upon Indigenous space by settler scientific endeavors tied to space exploration, there is no neutrality to be had—dispossession and violence are dispossession and violence, no matter the potential ‘good for humanity’ that might come about through these things.** Such contestations over outer space and ethical engagement with previously unknown spaces will continue to happen. Outer space is not the first ‘final frontier’ (apologies to Gene Roddenberry) that has been discussed in settler logics and academic spaces. In terms of settler colonialism, scholars have written about how Antarctica was initially thought of as the ‘perfect’ settler colony—land that could be had without the messy business of pushing Indigenous people off of it (see Howkins 2010). Of course, we know now that engagement with Antarctica should be constrained by ecological concern—who is to say that these concerns will be heeded in ‘unpopulated’ space? What can be done to push back against these settler logics? Indigenous Engagement with ‘Space’ "River of Souls" by Carl Gawboy (as published in Indian Country Today, 4/2/16) I want to now turn our attention towards the possibilities that exist regarding Indigenous engagement with outer space. After all, the timing could not be more urgent to do so—we are now at a point where after generations and generations of building the myth that America was built out of nothing, we are now ready to resume the project of extending the reach of American military and economic might in space. To be fair, there are plenty of advances that can be made scientifically with a renewed focus on space exploration. However, **history shows us that space exploration has been historically tied to military hegemony**, and there is nothing in Mr. Trump’s temperament or attitude towards a re-engagement with space that suggest that his push toward the stars will be anything different. A sustained conversation needs to be had—will this exploration be ethical and beneficial to all Americans? One potential avenue of Indigenous involvement comes through the active involvement of Indigenous peoples and Indigenous perspectives in space exploration, of course. This involvement can be possible through viewing outer space through **a ‘decolonial’ lens, for instance**. Astronomers such as Prescod-Weinstein and Walkowicz have spoken about the need to avoid replicating colonial frameworks of occupation and use of space when exploring places such as Mars, for example (Mandelbaum, 2018). The rise of logics of resource extraction in outer-space bodies have led to engagements by other academics such as Alice Gorman on the agency and personhood of the Moon. Collaborations between Indigenous people and space agencies such as NASA help provide the Indigenous perspective inside space exploration and the information that is gleaned from it, with implications both in space and on a Earth that is dealing with climate crisis (Bean, 2018; Bartels, 2019). Another potential avenue of engagement with Indigenous methodologies and epistemologies related to space comes with engaging with Indigenous thinkers who are already deeply immersed into explorations of Indigenous ‘space’ here on Earth—the recent works of Indigenous thinkers such as Waziyatawin (2008) Leanne Betasamosake Simpson (2017), Natchee Blu Barnd (2018) and others provide a unique viewpoint into the ways that Indigenous peoples make and remake space—perhaps this can provide another blueprint for how we might engage with space beyond Earth. And that is just the work that exists within the academic canon. Indigenous people have always been engaged with the worlds beyond the Earth, in ways that often stood counter to accepted ‘settler’ conventions of space exploration (Young, 1987). In one example, when asked about the Moon landings, several Inuit said, "We didn't know this was the first time you white people had been to the moon. Our shamans have been going for years. They go all the time...We do go to visit the moon and moon people all the time. The issue is not whether we go to visit our relatives, but how we treat them and their homeland when we go (Young, 1987: 272).” In another example, turning to my own people, the Ojibwe, we have long standing cultural connections to the stars that influence storytelling, governance, and religious tenets (CHIN, 2003). This engagement continues through to the present day, and points to a promising future. A new generation of Indigenous artists, filmmakers, and writers are beginning to create works that place the Indigenous individual themselves into narratives of space travel and futurity, unsettling existing settler notions of what our future in space might look like. As Leo Cornum (2015) writes, “Outer space, perhaps because of its appeal to our sense of endless possibility, has become the imaginative site for re-envisioning how black, indigenous and other oppressed people can relate to each other outside of and despite the colonial gaze.” (Photo Credit: Indigenous Education Institute) These previous examples should serve as a reminder that the historical underpinnings of our great national myth are built upon shaky intellectual ground—we need to be honest about this. America did not just spring forth out of nothing; it came from the brutal occupation and control of Native lands. Despite the best efforts of the settler state, Native people are still here, we still exist and make vital contributions to both our tribal communities and science. We cannot expect Donald Trump to turn his back on the national myth of what made the United States the United States—in his mind, this is the glorious history of what made America great in the past. And it should serve as no surprise that Trump and others wish to extend this history into outer space. Even when Trump’s days in the White House are over, **the settler colonial logics that underpin our engagement with land on Earth will still loom large over the ways that we may potentially engage with outer space.** But for those of us who do work in Indigenous geographies and Indigenous studies, it becomes even more vital that we heed the calls of Indigenous thinkers inside and outside formal academic structures, validate Indigenous histories, and push to deconstruct the American settler myth and to provide a new way of looking at the stars, especially at a crucial moment where the settler state turns its gaze towards the same.

**The judge should embrace an intellectual orientation and disruption to the colonial logics that constitutes the world. This requires critical and historical questions and not policy recipes. [0:32]**

Biswas 7 (Shampa Biswas Politics @ Whitman, 2007, “Empire and Global Public Intellectuals: Reading Edward Said as an International Relations Theorist” *Millennium* 36 (1) p. 117-125

The recent resuscitation of the project of Empire should give International Relations scholars particular pause.1 For a discipline long premised on a triumphant Westphalian sovereignty, there should be something remarkable about the ease with which the case for brute force, regime change and empire-building is being formulated in widespread commentary spanning the political spectrum. Writing after the 1991 Gulf War, Edward Said notes the US hesitance to use the word ‘empire’ despite its long imperial history.2 This hesitance too is increasingly under attack as even self-designated liberal commentators such as Michael Ignatieff urge the US to overcome its unease with the ‘e-word’ and selfconsciously don the mantle of imperial power, contravening the limits of sovereign authority and remaking the world in its universalist image of ‘democracy’ and ‘freedom’.3 Rashid Khalidi has argued that the US invasion and occupation of Iraq does indeed mark a new stage in American world hegemony, replacing the indirect and proxy forms of Cold War domination with a regime much more reminiscent of European colonial empires in the Middle East.4 The ease with which a defence of empire has been mounted and a colonial project so unabashedly resurrected makes this a particularly opportune, if not necessary, moment, as scholars of ‘the global’, to take stock of our disciplinary complicities with power, to account for colonialist imaginaries that are lodged at the heart of a discipline ostensibly interested in power but perhaps far too deluded by the formal equality of state sovereignty and overly concerned with security and order. Perhaps more than any other scholar, Edward Said’s groundbreaking work in *Orientalism* has argued and demonstrated the long and deep complicity of academic scholarship with colonial domination.5 In addition to spawning whole new areas of scholarship such as postcolonial studies, Said’s writings have had considerable influence in his own discipline of comparative literature but also in such varied disciplines as anthropology, geography and history, all of which have taken serious and sustained stock of their own participation in imperial projects and in fact regrouped around that consciousness in a way that has simply not happened with International Relations.6 It has been 30 years since Stanley Hoffman accused IR of being an ‘American social science’ and noted its too close connections to US foreign policy elites and US preoccupations of the Cold War to be able to make any universal claims,7 yet there seems to be a curious amnesia and lack of curiosity about the political history of the discipline, and in particular its own complicities in the production of empire.8 Through what discourses the imperial gets reproduced, resurrected and re-energised is a question that should be very much at the heart of a discipline whose task it is to examine the contours of global power. Thinking this failure of IR through some of Edward Said’s critical scholarly work from his long distinguished career as an intellectual and activist, this article is an attempt to politicise and hence **render questionable** the **disciplinary traps** that have, ironically, circumscribed the ability of scholars whose very business it is to think about global politics to actually think *globally* and *politically*. What Edward Said has to offer IR scholars, I believe, is a certain kind of global sensibility, a critical but sympathetic and felt awareness of an inhabited and cohabited world. Furthermore, it is a profoundly political sensibility whose globalism is predicated on a cognisance of the imperial and a firm non-imperial ethic in its formulation. I make this argument by travelling through a couple of Said’s thematic foci in his enormous corpus of writing. Using a lot of Said’s reflections on the role of public intellectuals, I argue in this article that IR scholars need to develop what I call a ‘global intellectual posture’. In the 1993 Reith Lectures delivered on BBC channels, Said outlines three positions for public intellectuals to assume – as an outsider/exile/marginal, as an ‘amateur’, and as a disturber of the status quo speaking ‘truth to power’ and self-consciously siding with those who are underrepresented and disadvantaged.9 Beginning with a discussion of Said’s critique of ‘professionalism’ and the ‘cult of expertise’ as it applies to International Relations, I first argue the importance, for scholars of global politics, of taking *politics* seriously. Second, I turn to Said’s comments on the posture of exile and his critique of identity politics, particularly in its nationalist formulations, to ask what it means for students of global politics to take the *global* seriously. Finally, I attend to some of Said’s comments on humanism and contrapuntality to examine what IR scholars can learn from Said about *feeling and thinking globally* concretely, thoroughly and carefully. IR Professionals in an Age of Empire: From ‘International Experts’ to ‘Global Public Intellectuals’ One of the profound effects of the war on terror initiated by the Bush administration has been a significant constriction of a democratic public sphere, which has included the active and aggressive curtailment of intellectual and political dissent and a sharp delineation of national boundaries along with concentration of state power. The academy in this context has become a particularly embattled site with some highly disturbing onslaughts on academic freedom. At the most obvious level, this has involved fairly well-calibrated neoconservative attacks on US higher education that have invoked the mantra of ‘liberal bias’ and demanded legislative regulation and reform10, an onslaught supported by a well-funded network of conservative think tanks, centres, institutes and ‘concerned citizen groups’ within and outside the higher education establishment11 and with considerable reach among sitting legislators, jurists and policy-makers as well as the media. But what has in part made possible the encroachment of such nationalist and statist agendas has been a larger history of the corporatisation of the university and the accompanying ‘professionalisation’ that goes with it. Expressing concern with ‘academic acquiescence in the decline of public discourse in the United States’, Herbert Reid has examined the ways in which the university is beginnincritg to operate as another transnational corporation12, and critiqued the consolidation of a ‘culture of professionalism’ where **academic bureaucrats** **engage in bureaucratic role-playing,** minor academic **turf battles mask the larger managerial power play** on campuses and the increasing influence of a relatively autonomous administrative elite and the rise of insular ‘expert cultures’ have led to academics relinquishing their claims to public space and authority.13 While it is no surprise that the US academy should find itself too at that uneasy confluence of neoliberal globalising dynamics and exclusivist nationalist agendas that is the predicament of many contemporary institutions around the world, there is much reason for concern and an urgent need to rethink the role and place of intellectual labour in the democratic process. This is especially true for scholars of the global writing in this age of globalisation and empire. Edward Said has written extensively on the place of the academy as one of the few and increasingly precarious spaces for democratic deliberation and argued the necessity for public intellectuals immured from the seductions of power.14 Defending the US academy as one of the last remaining utopian spaces, ‘the one public space available to real alternative intellectual practices: no other institution like it on such a scale exists anywhere else in the world today’15, and lauding the remarkable critical theoretical and historical work of many academic intellectuals in a lot of his work, Said also complains that ‘the American University, with its munificence, utopian sanctuary, and remarkable diversity, has defanged (intellectuals)’16. The most serious threat to the ‘intellectual vocation’, he argues, is ‘professionalism’ and mounts a pointed attack on the proliferation of ‘specializations’ and the ‘cult of expertise’ with their focus on ‘relatively narrow areas of knowledge’, ‘technical formalism’, ‘impersonal theories and methodologies’, and most worrisome of all, their ability and willingness to be **seduced by power**.17 Said mentions in this context the funding of academic programmes and research which came out of the exigencies of the Cold War18, an area in which there was considerable traffic of political scientists (largely trained as IR and comparative politics scholars) with institutions of policy-making. Looking at various influential US academics as ‘organic intellectuals’ involved in a dialectical relationship with foreign policy-makers and examining the institutional relationships at and among numerous think tanks and universities that create convergent perspectives and interests, Christopher Clement has studied US intervention in the Third World both during and after the Cold War made possible and justified through various forms of ‘intellectual articulation’.19 This is not simply a matter of scholars working for the state, but indeed a larger question of **intellectual orientation**. It is not uncommon for IR scholars to feel the need to formulate their scholarly conclusions in terms of its relevance for global politics, where ‘relevance’ is measured entirely in terms of policy wisdom. Edward Said’s searing indictment of US intellectuals – policy-experts and Middle East experts - in the context of the first Gulf War20 is certainly even more resonant in the contemporary context preceding and following the 2003 invasion of Iraq. The space for a critical appraisal of the motivations and conduct of this war has been considerably diminished by the expertise-framed national debate wherein certain kinds **of ethical questions irreducible to formulaic ‘for or against’ and ‘costs and benefits’ analysis** can simply **not be raised**. In effect, what Said argues for, and IR scholars need to pay particular heed to, is an understanding of ‘intellectual relevance’ that is larger and more worthwhile, that is about the posing of critical, historical, ethical and perhaps unanswerable questions rather than the offering of recipes and solutions, that is about *politics* (rather than techno-expertise) in the most fundamental and important senses of the vocation.21

## Advantage [2:40]

#### States use increasingly narrow interpretations of the Outer Space Treaty’s non-appropriation principle to allow for a first-come-first-serve scramble for resource extraction and property rights [0:36]

Pershing 19 (Abigail D. Pershing is a Robina Fellow at European Court of Human Rights. Graduate of UChicago in Sociology, Public Policy and Yale Law School.), “Interpreting the Outer Space Treaty’s Non-Appropriation Principle: Customary International Law from 1967 to Today”, The Yale Journal of International Law, Volume 44, Issue 1, 2019, pg. 161-166, <https://openyls.law.yale.edu/bitstream/handle/20.500.13051/6733/Pershing.pdf?sequence=2> NT

Mirroring the shift in State practice and domestic laws, the legal community has also changed its approach to the interpretation of the nonappropriation principle. Whereas at the time of the ratification of the Outer Space Treaty the majority of legal scholars tended to apply the non-appropriation principle broadly, most legal scholars now view appropriation of extracted materials as permissible.78 Brandon Gruner underscores that this new view is historically distinct from prior legal interpretation, noting that **modern interpretations of the Outer Space Treaty’s non-appropriation principle differ from those of the Treaty’s authors**.79 In contrast to earlier legal theory that denied the possibility of appropriation of any space resources, scholars now widely accept that extracting space resources from celestial bodies is a “use” permitted by the Outer Space Treaty and that extracted materials become the property of the entity that performed the extraction.80 Stressing the fact that the Treaty does not explicitly prohibit appropriating resources from outer space, other authors conclude that the use of extracted space resources is permitted, meaning that the new SPACE Act is a plausible interpretation of the Outer Space Treaty.81 However, scholars have been careful to cabin the extent to which they accept the legality of appropriation. For instance, although Thomas Gangale and Marilyn Dudley-Rowley acknowledge the legality of private appropriation of extracted space resources, they nonetheless emphasize that “[o]wnership of and the right to use extraterrestrial resources is distinct from ownership of real property” and that any such claim to real property is illegal.82 Lawrence Cooper is also careful to point out this distinction: “[t]he [Outer Space] Treaties recognize sovereignty over property placed into space, property produced in space, and resources removed from their place in space, but ban sovereignty claims by states; international law extends this ban to individuals.”83 Although there remain some scholars who still insist on the illegality of the developments-space-property-rights. 2015 U.S. law and State appropriation of space resources generally,84 their dominance has waned since the 1960s. These scholars are now a minority in the face of general acceptance among the legal community that minerals and other space resources, once extracted, may be legally claimed as property. 85 Taken together, the elements described above—statements made in the international arena, de facto appropriation of space resources in the form of moon rocks, the adoption of new national policies permitting appropriation of extracted space resources, and the weight of the international legal community’s opinion— indicate a fundamental shift in customary international law. **The Outer Space Treaty’s non-appropriation clause has been redefined via customary international law norms from its broad application to now include a carve-out allowing appropriation of space resources** once such resources have been extracted. III. IMPENDING SECOND SHIFT IN CUSTOMARY INTERNATIONAL LAW’S INTERPRETATION OF THE NON-APPROPRIATION PRINCIPLE In contrast to Part II, which dealt with customary international law relating to property claims over materials that are extracted from space, this Part explores customary international law in relation to the idea of appropriation of in situ space property. Section II.A first establishes current customary international law norms that prohibit in situ space property ownership via an examination of State practice and opinio juris. Section II.B then suggests that, mirroring the first shift in customary international law norms related to extracted space resources, a nascent second shift in the interpretation of the non-appropriation principle regarding in situ space property ownership is likely on the horizon. **The prospect of high profits from the extraction of space resources will likely incentivize private companies and individuals to pressure States to recognize and protect private in situ property rights**—which, as previously discussed, is not expressly prohibited by Article II of the Outer Space Treaty. **As increasing government openness to private commercial space activities suggests, States will likely buckle under this pressure and allow private companies or private entities under State control to exercise ownership rights.** Unless the international community acts soon to clarify the meaning of the nonappropriation principle of the Outer Space Treaty, it is possible that a second organic shift in customary international law will develop and allow for private ownership of in situ space property **in further contravention of the original intent of the Treaty**. A. Current Rejection of Individual Property Rights in Space Although the internationally recognized scope of the non-appropriation principle has been pared back to allow for the ownership of space resources upon extraction, there is still currently a general acceptance in customary international law that the principle prohibits States, individuals, and private corporations from owning in situ property in space. State practice, domestic legislation, and legal scholarship all tend to support this conclusion. 1. State Practice Currently, States act in accordance with the original understanding of the non-appropriation treaty insofar as they have not endorsed individuals’ claims to in situ property in space (as distinct from endorsement of property rights to resources after extraction). One anecdote that exemplifies the United States’ unwillingness to acknowledge private individuals’ in situ property rights in outer space comes from the case Nemitz v. United States. 86 On February 12, 2001, NASA’s Near Earth Asteroid Rendezvous Shoemaker became the first spacecraft to land on the surface of an asteroid when it touched down on Eros, a twenty-one-mile long asteroid in the sun’s orbit.87 On February 16, 2001, NASA received a letter from Gregory Nemitz, in which Nemitz claimed ownership over Eros (effectively asserting in situ property rights over the asteroid) and attempted to charge NASA a twenty dollar “parking/storage fee” for NASA’s use of the asteroid.88 NASA General Counsel Edward Frankle’s eventual response, after a series of back-andforth exchanges, was to deny that Nemitz had any property rights to the asteroid as a celestial body because to acknowledge otherwise would be in contravention of Article II of the Outer Space Treaty.89 The matter was settled in court, with the presiding judge relying on similar reasoning in finding for NASA.90 Other challenges to the principle of non-appropriation of in situ space property, most notably in the Bogotá Declaration of 1976, have also been struck down.91 In the Declaration, eight equatorial nations, including Colombia, Congo, Ecuador, Indonesia, Kenya, Uganda, and Zaire (now the Democratic Republic of the Congo), with Brazil as an observer, claimed sovereignty over in situ space property in the form of geostationary orbits above their territories.92 Geostationary orbits, thirty-six thousand kilometers above Earth’s equator, are particularly valuable because at this distance a satellite orbits the Earth at a speed equal to the Earth’s rotation, allowing that satellite to remain over a fixed point on the Earth’s surface.93 However, the Bogotá Declaration’s attempted appropriation of geostationary orbits was rejected internationally as inconsistent with Article II of the Outer Space Treaty.94 Since the Bogotá Declaration, there have not been any significant challenges to the non-appropriation principle concerning appropriation of in situ space property.95 There are also no major persistent State objectors who claim the right of ownership of in situ property.96 Although customary international law has come to accept State and individual ownership of extracted space resources, current State practice supports the conclusion that appropriation of in situ space property (in the form of entire celestial bodies, as with Eros, or particular swaths of space or orbits, as in the Bogotá Declaration) remains impermissible under the non-appropriation clause of the Outer Space Treaty. 2. Opinio Juris: Domestic Legislation The United States has ensured that its commitment to the nonappropriation principle (other than the exception discussed above concerning extracted resources) is codified in domestic law. Restricting its otherwise expansive language, the SPACE Act of 2015 reads: “It is the sense of Congress that by the enactment of this Act, the United States does not thereby assert sovereignty or sovereign or exclusive rights or jurisdiction over, or the ownership of, any celestial body.”97 Other countries have also recognized this limitation to private ownership of space in customary international law. For instance, commentary to the new Luxembourg law emphasizes that [t]he scope of this law is . . . limited to space resources and does not apply to asteroids, comets and celestial bodies as such, whose appropriation is prohibited by the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, a.k.a. the 1967 Outer Space Treaty.98 In their explicit compliance with international law, other States’ outer space laws similarly reject private appropriation of space.99 3. Opinio Juris: Legal Scholarship Legal scholars also generally accept that the non-appropriation principle legally extends to private individuals as well as to States.100 Articulations of this position tend to follow one of three lines of reasoning: (1) Article II implicitly bans individual appropriation; (2) even if Article II does not itself ban individual appropriation, the de facto outcome of the explicit bar in Article II against State appropriation of space will necessarily also preclude meaningful individual ownership; or (3) regardless of the language of Article II, customary international law itself precludes private in situ appropriation of land or property in space. But cracks are emerging even in these three seemingly strong legal arguments. Several scholars assert that the language of Article II itself implicitly bans individual appropriation. The most straightforward argument in this line of reasoning is that the Treaty precludes all sovereignty and ownership in space and over its celestial bodies, regardless of whether “the claim comes from nationstates, natural persons, or juridical persons,” indicating a complete moratorium on in situ property rights in space.101 Other scholars conclude that Article II implicitly bans private appropriation as well as State appropriation because property ownership implies control over access: given that Article I guarantees universal free access to all celestial bodies, private appropriation of any celestial body cannot legally occur.102 The second approach to the private appropriation question is perhaps the most common: a recognition that Article II does not explicitly or implicitly ban individual appropriation, but that in the absence of State endorsement of these rights (which itself is prohibited), “individual property” as such has no meaning. This approach is exemplified in Fabio Tronchetti’s work. He explains: [T]here is a general consensus on the fact that both national appropriation and private property rights are denied under the Outer Space Treaty . . . . Private entities are allowed to carry out space activities but, according to Article VI of the Outer Space Treaty, they must be authorized to conduct such activities by the appropriate State of nationality. But if the State is prohibited from engaging in certain conduct, then it lacks the authority to license its nationals or other entities subject to its jurisdiction to engage in that prohibited activity.103 Other scholars make similar arguments. Virgiliu Pop, for instance, claims that “[a]ppropriation of land can exist outside the sphere of sovereignty, but its survival is dependent upon endorsement from a sovereign entity.”104 Because “the Outer Space Treaty prohibits the national appropriation of outer space and celestial bodies,” he argues “a State endorsement would be interpreted as a means of national appropriation, hence it would be unlawful.”105 Finally, approaching the question from a customary international law perspective, Deva Prasad emphasizes that both State practice and opinio juris “clearly support the fact that the non-appropriation principle is a customary international law,” noting “widespread acceptance [of the] non-appropriation principle by the States” as well as the absence of any persistent objectors.106 **Thus, even if Article II does not ban private individuals from owning land in and of itself, customary international law in the aggregate is enough to condemn private appropriation of land in space as illegal**. B. Emerging Theories of In Situ Property Rights in Space Despite the evidence that customary international law currently proscribes in situ appropriation of space property, I argue that a **nascent second shift in the interpretation of the non-appropriation principle, which would allow for such in situ ownership, is likely on the horizon**. The possibility of such a shift arises from the sheer magnitude of the economic incentives private corporations will have to urge such a recognition. And, if States seek to establish in situ ownership, they will have at their disposal emerging legal arguments pointing to cracks in the theories that the non-appropriation principle bars private ownership of in situ property. Although not yet the basis for any State action, **the increasing momentum of these theories portends a second shift in customary international law to allow for in situ ownership of space property.**

#### Clear guidelines in space law are key to collaborative space exploration [0:37]

Skibba 21 (Ramin Skibbais the space writer at Wired magazine. Previously an astrophysicist, his science writing has appeared in The Atlantic, Slate, Scientific American and Nature, among others. He is based in San Diego.), “Decolonising the cosmos”, Aeon, November 12th, 2021, <https://aeon.co/essays/we-need-a-more-egalitarian-approach-to-space-exploration> NT

Within four years, American astronauts will once again plant their feet and flags on the Moon’s dusty surface. They won’t be alone: Chinese, European and Russian space agencies have their sights on our nearest celestial body too, as do space companies such as Moon Express and Jeff Bezos’s Blue Origin. If their plans come to fruition, astronauts and their robots will claim the most valuable spots and mine the Moon for water, ice and other resources. Our lunar neighbour will never be the same again. The Moon is only a foothold, a first step on the edge of a vast landscape. Humanity stands on the brink of a new era of exploration, in which brief, intermittent and tentative space jaunts could be replaced by a multitude of cosmic activities conducted by many competing interests. Within 20 or 30 years, crewed missions could make giant leaps toward Mars – 500 times further away than the Moon – to map out the terrain and even establish colonies. Asteroids and other distant destinations will be next. With this new age dawning, we face a collective responsibility to consider the moral challenges before us, and to avoid committing the grave mistakes of the past. So far, attitudes to space that focus on power and profit appear worryingly similar to the mindset of European and American colonial powers. The billionaire Elon Musk’s company SpaceX has begun transforming the night sky – the cultural heritage of humanity – with its reflective constellations of satellites. Military space programmes and military space companies continue developing space weapons such as anti-satellite missiles, tests of which increasingly clog low-Earth orbit with debris. Meanwhile, if companies or anyone else carves pieces of the Moon as they please, it could irrevocably change its appearance to us, too. While NASA and other space agencies are more accountable and transparent than the space industry, they too lack a collective, long-term roadmap for what comes next. **Without clear guidelines for what can and cannot be done in space, the cosmos will become not a place for collaborative exploration and shared benefits but the site of conflicts, resource extraction and pollution.** If nothing changes, commercial and military interests will influence or even supplant collective ones; the quest for resources such as water, minerals and valuable space in orbit will create imperatives to despoil the commons of space and the night sky; and investment in space exploration will become a way for the powerful to escape accountability for social justice problems on Earth. A growing chorus of voices within the astronomy community is championing an alternative: a peaceful, sustainable and egalitarian vision of space, which keeps an eye on the injustices and inequalities on the ground. ‘The larger philosophical question is “Are other worlds there for human use or are they sovereign unto themselves?”’ Lucianne Walkowicz, an astronomer at the Adler Planetarium in Chicago, tells me. ‘The viewpoint of European colonisers has always been that everything exists for their use, and we’re witnessing the unsurprising outcome of centuries of that thinking.’ Walkowicz is driven by their longtime involvement in politics and activism, including opposition to the Iraq War and support for Black Lives Matter. After years of giving talks and raising awareness, Walkowicz and their colleagues recently formed the JustSpace Alliance – an organisation that advocates ‘for a more inclusive and ethical future in space, and to harness visions of tomorrow for a more just and equitable world today’, according to its mission statement. Other advocates and nonprofit organisations with aligned missions include Space Enabled, a research group at the MIT Media Lab, which promotes social and environmental sustainability in space, and applies space technology to foster justice on Earth; the Outer Space Institute, led by researchers at the University of British Columbia, which focuses on peace and sustainability in space, starting with the atmosphere; and the Secure World Foundation, a think-tank based in Broomfield, Colorado, aiming to reduce space conflicts and promote space diplomacy. With their overlapping objectives, these advocates and institutions want to spark a cultural shift that will reshape NASA’s and other space agencies’ priorities and rein in the burgeoning space industry. Can they succeed? Today, the cosmos is neither as distant nor as inscrutable as it used to be. Space agencies and space companies have designs on worlds well beyond Earth’s atmosphere. Within a couple of decades, humans could have an enduring presence on the Moon, engage in scientific studies, build outposts or colonies, mine for resources, and visit as space tourists. Mars will soon follow suit. We can expect to see more missions to asteroids too, especially if some turn out to harbour rare and lucrative platinum-group metals. Researchers at MIT, the University of Arizona and the University of Central Florida involved in current missions exploring near-Earth asteroids, Pluto and extrasolar planets have or had ties to asteroid mining companies such as Planetary Resources, Deep Space Industries and TransAstra Corporation. Past the asteroid belt, by the end of the century, we might even manage to send crewed expeditions to the moons of Jupiter and Saturn, uncovering the ocean worlds of Europa, Enceladus and Titan. But who decides where we go next, and who are ‘we’, exactly? Danielle Wood, the director of Space Enabled, argues that allowing the most powerful countries and companies to claim space property, territory or resources for themselves constitutes an imperial mindset. ‘If we just take the default view today, people will be going to these places with an extractive mindset that says: “I have the technology, money and power, and I’ll use these resources until I’m satisfied, and I will not be concerned with other countries and future generations,”’ she says. **The drive for resource extraction imperils the commons of space, including the Moon and the night sky – a process not so different from how human societies and natural ecosystems were recklessly plundered by colonial powers.** ‘When people in the space community, from Elon Musk to senators pushing for the commercialisation of space, are saying “We can mine the Moon,” it’s very reminiscent of extractivism from historical colonisation,’ Natalie Treviño, a space theoretician at the Western University in London, Ontario, tells me. Like an ancient forest that will never return, atmospheric and space resources can be quickly exhausted, and even lifeless places can be irrevocably transformed by environmental degradation. No one wants space activities to result in a Mars littered with abandoned dwellings and ice miners Thousands of active satellites orbit the Earth, but low-Earth orbit is clogged with many thousands more pieces of derelict spacecraft and debris. This belt of space-junk includes the countless bits of shrapnel and flotsam produced by anti-satellite weapon tests, such as the ones undertaken by China in 2007 and India in 2019. In the ocean, you can at least navigate a ship around the Great Pacific Garbage Patch, but it’s not so simple in the atmosphere. Even a single errant bolt hurtling in space can collide with a spacecraft and render it dysfunctional. **Yet no universal treaty exists to guarantee that no one will generate new space junk, and technologies for removing it are in their infancy.** Another problem is that lengthy space missions will often entail finding more resources along the way. Every litre of water and every piece of equipment launched from Earth takes up crucial space on a rocket, and demands extra fuel to escape our planet’s gravitational pull. Long-distance expeditions could involve wresting water from frigid lunar dirt, 3D printing rocket parts or infrastructure from materials on other worlds, or sifting for minerals on an asteroid. Still, no one wants the next few decades of space activities to result in a Moon pockmarked with excavations, or Mars littered with abandoned dwellings and ice miners. Furthermore, ice and other space materials are essentially fossil resources; they will not be replenished. Beyond space pollution or depletion, so-called ‘megaconstellations’ of many satellites coordinating together pose particular risks. SpaceX’s Starlink constellation will eventually build up to tens of thousands of spacecraft, a network that will be visible to the naked eye. While SpaceX attempted to develop a ‘DarkSat’ coating to minimise the issue, astronomers found that the tested satellite was only marginally fainter than its numerous brethren. If nothing changes, people will eventually see as many satellites as stars in the sky, according to a new paper by Aaron Boley, Samantha Lawler and colleagues. The night sky, which has looked roughly the same for people for millennia, could appear very different to our children and grandchildren. The oceans once appeared to our ancestors as a similarly vast and tantalising frontier, first broached by the boats of the Austronesian peoples and other ancient civilisations. But they were followed by the invention of military and cargo ships and navies, with empires such as the British, Spanish and Portuguese deploying fleets to control territories and trade routes. More recently, the United States, one of the leading space powers today, ruled over a more veiled empire, spanning from Latin America and the Caribbean to the Middle East and East Asia. The American empire funnelled, just as its predecessors did, minerals and other resources to the wealthy and powerful at home while leaving social inequality and environmental devastation in its wake. In his book Open Veins of Latin America (1971), the Uruguayan writer Eduardo Galeano observed: Everything, from the discovery until our times, has always been transmuted into European – or later United States – capital, and as such has accumulated on distant centres of power. Everything: the soil, its fruits and its mineral-rich depths, the people and their capacity to work and to consume, natural resources and human resources. Are things different in space in the 21st century? To answer this, we need to examine the logic and motivations of those organising space missions. The first deep-space travellers will need water to survive; they’ll need to construct shelters from space radiation; they’ll need fuel to return home. But the first European colonisers also claimed they were only looking for resources for survival, or advancing humanity’s shared interests, when they voyaged overseas or into Indigenous territories, Treviño points out. ‘There’s a lot of utopian thinking with space exploration,’ she says. Space contractors and military contractors are often one and the same The very terms we use when describing space exploration deserve more attention. **While NASA and other organisations years ago replaced ‘manned’ with ‘crewed’ or ‘human’ to describe space missions, we still frequently use other problematic terms, such as ‘settlers’, ‘colonies’ and ‘frontier’, which all have colonialist connotations.** We don’t yet have an alternative language for our new travels in space, Treviño says – at least outside of Afrofuturism and Indigenous science fiction, whose authors often emphasise sharing, ancestral knowledge and diverse, welcoming, resilient communities. As companies and space agencies prepare to colonise the Moon during the 2020s, Wood says, there’s a risk they’ll follow the same patterns: extracting and taking raw materials as quickly as possible. ‘If we don’t pause and disrupt that, I expect that in space, especially if you have large, Amazon-style companies, they would behave in the same way, because why wouldn’t they?’ she asks. Militaries, too, have always played major roles in space. The technologies required to build rockets are similar to those of missiles that deploy warheads; the same goes for space telescopes and reconnaissance satellites. Space contractors and military contractors are often one and the same, and there’s a revolving door for scientists between space research and companies such as Northrop Grumman, which plays a leading role developing technologies for the James Webb Space Telescope that’s aiming to launch in December. The new US Space Force has broad political support, and US presidential administrations of both parties frequently refer to space as a war-fighting domain. The Barack Obama administration’s Space Act of 2015 declared that the US would not claim any space territory, but it also enshrined the principle that space companies could own, use and sell any resources they obtain. Space lawyers continue to debate whether this violates the spirit of the Outer Space Treaty of 1967. Representatives of a handful of countries negotiated the more restrictive Moon Agreement in 1979, which states that natural resources in space ‘are the common heritage of mankind’. But space powers such as the US and the USSR did not become signatories of that treaty, so it carries little weight. **Fifty years ago, these competing views of space, prioritising science and shared benefits or enabling commercial and military goals, had already begun to surface** As humanity ventures beyond our atmosphere, two clear differences emerge compared with empires of the past. ‘There are no Indigenous populations to exploit, and no one’s allowed to annex territory,’ says Christopher Johnson, a space law advisor at the Secure World Foundation. But if we want to allow long-distance space exploration, it will almost certainly involve supplementing water and fuel supplies with limited quantities that astronauts can find in space. **This means we need a consensus about who has access and which activities are permitted.**

#### Colonial powers like the US and China exploit legal ambiguity about private appropriation to achieve space dominance [0:43]

* AT Space Mining DA – turns the private innovation link because it proves dominant purpose of private space mining is to enhance national soft power and acquire space resources for national use

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Envisaging appropriation concerns that might arise from the future extraction of space assets by spacefaring nations, Article II of the UN OST declared that: “Outer space is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means” (UN, 1967). **The emphasis on claims of national sovereignty were intimately tied to the Cold War context at the time, where space activities were under the exclusive monopoly of governmental agencies and initiated for goals of military dominance or national prestige** (Sachdeva, 2017: 210). However, the privatisation of the space industry that has occurred since the 1980s has meant that the legislation leaves an **enormous amount of legal ambiguity and interpretation** regarding the regulation of private resource mining in space. As Shaer (2016) demonstrates, the Article II provision fails to address either the exploitation of space for financial gain or the property claims of commercial enterprises (Shaer, 2016: 47). Nevertheless, Article VI of the UN OST asserts that: “States shall be responsible for national space activities whether carried out by governmental or non-governmental entities” (UN, 1967; own emphasis). Some scholars have suggested that this clause significantly restrains the activities of private space corporations by incentivising states to regulate their domestic organisations for fear of liability concerns (Abeyratne, 1998: 168). However, the US government recently enacted a piece of legislation which exploited this clause, in order to circumvent its own restrictions and strengthen US economic influence in space. The passage of the 2015 SPACE Act enabled US citizens to privately “possess, own, transport, use, and sell the resources” they obtain in outer space, whilst making careful consideration to deny national sovereign claims over such materials (Leon, 2018: 500). Yet, regardless of whether it is an American private company or public venture, **the US is still satisfying its geopolitical interests; by exclusively siphoning off extra-terrestrial resources for American gain, the nation’s soft power is thereby extended at the expense of spacefaring adversaries** such as China (Basu & Kurlekar, 2016: 65). Indeed NewSpace actors cleverly played on these strategic concerns prior to the bill’s passage, with billionaire space entrepreneur Robert Bigelow asserting that the biggest danger wasn’t private enterprises on the Moon, but that “America is asleep and does nothing, while China comes along… surveying and laying claim [to the Moon]” (Klinger, 2017: 222). **The US government’s support for private space companies is also likely to lead to the reinforcement of Earth-bound wealth inequalities in space. Many NewSpace actors frame their long-term ambitions in space with strong anthropogenic undertones, by offering the salvation of the human race from impending extinction through off-world colonial developments** (Kearnes & Dooren: 2017: 182). Yet, this type of discourse disguises the highly exclusive nature of these missions. Whilst they seem to suggest that there is a stake for ordinary citizens in the vast space frontier, the reality is that these self-described space pioneers are a member of a narrow ‘cosmic elite’ – “founders of Amazon.com, Microsoft, Pay Pal… and a smattering of games designers and hotel magnates” (Parker, 2009: 91). Indeed, private space enterprises have themselves suggested that they have no obligation to share mineral resources extracted in space with the global community (Klinger, 2017: 208). This is reflected in the speeches of individuals such as Nathan Ingraham, a senior editor at the tech site EngadAsteroid mining, who claimed that asteroid mining was “how [America is] going to move into space and develop the next Vegas Strip” (Shaer, 2016: 50). Such comments highlight a form of what Beery (2016) defines as ‘scalar politics’. **In similar ways to the ‘scaling’ of unequal international relations that has constituted our relationship with outer space under the guise of the ‘global commons’ (Beery, 2016: 99), private companies – through their anthropogenic discourse – are scaling existing Earth-bound wealth inequalities and social relations into space by siphoning off extra-terrestrial resources.** **By constructing their endeavours in ways that appeal to the common good, NewSpace actors are therefore concealing the reality of how commercial resource extraction serves the exclusive interests of their private shareholders at the expense of the vast majority of the global population.** Private Space Corporations and Orbital Surveillance: Dual-Use Satellite Technology Starting in 2013, the leaking of classified information by former US National Security Agency employee Edward Snowden revealed the extent to which American intelligence agencies were collaborating with the private sector in mass surveillance operations (Bauman et al., 2014). In what has been described as the ‘securitisation’ of society, contemporary states have shifted from “politics to policing and from governing to managing” the public, which has often occurred without the consent or knowledge of their citizens (Petit, 2020: 31). While such practices have conventionally been Earth-bound in nature, the space domain provides an entirely radical and strategically beneficial perspective for conducting surveillance through satellites. **Although many commercial US satellites provide an array of environmental and internet capabilities on Earth, they are also absolutely essential from a national security perspective of maintaining US space superiority** (Chatters IV & Crothers, 2009: 257). This is known as the “dual-use” nature of satellites, where civilian and military purposes are blurred into a single observational system and can be adapted for different functions when necessary (Lubojemski, 2019: 128-129). Dual-use satellite technology has been vital for the US military in offering a tactical edge on the battlefield, with 80% of its satellite communications needs being derived from commercial satellites (Hampson, 2017: 7). The reliance on these networks forms a component of the broader US military doctrine of ‘space control’, part of which aims to secure the transmission of commercial satellite data that will prevent the exposure of sensitive military tactics (Peña & Hudgins, 2002). Whilst the OST does not contain any clauses specifying the rules or regulations of data monitoring in space, any form of malicious or illegal surveillance can be seen to violate Article XI, which requires states to: “Inform the Secretary-General of the United Nations as well as to the public and international scientific community, to the greatest extent feasible and practical, of the nature, conduct, locations and results of [space] activities” (UN, 1967). Yet, legal scholars have claimed that this clause is significantly weak, since states can withhold vital information about their space activities on the basis that the dissemination of such information is neither ‘feasible’ nor ‘practical’ (Chatterjee, 2014: 31-32). The absence of any clear UN guidelines has also meant that American satellite corporations are increasingly capable of refusing to state their intentions, or who their customers are – with the US government being one of these elusive clients. The 1994 Presidential Decision Decree-23 authorised the US government to require firms to either limit or stop sales of certain satellite images through a process known as ‘shutter control’. It is controversial because it designates the US executive branch the ability to limit publicly accessible information in certain circumstances, possibly violating First Amendment rights (Livingston & Robinson, 2003: 12). During the 2001 War in Afghanistan, the US government bought the rights to all orbital images taken over the theatre of operations by GeoEye’s Ikonos satellite on the grounds of ‘national security’ (The Guardian, 2001). However, media groups accused the government deal of preventing them from informing the public about matters of critical importance that in no way implicated national security, including the independent verification of government claims concerning damage to civilian structures and possible casualties (Livingston & Robinson, 2003: 12). These measures therefore undermined the OST’s Article XI clause by concealing important information to the public when it was feasibly possible, through the guise of national security discourse. At the same time, it allowed the US government to manipulate media coverage of areas it deems to be essential for conditioning public war support in Afghanistan, whilst simultaneously strengthening its space control doctrine. In many ways this strategy can also be seen as facilitating a ‘global panoptical’ intelligence network (Backer, 2008). **By extending the private-public hybrid structure of surveillance into outer space, businesses and governments have the opportunity to observe millions of global citizens unknowingly at any one point – and with it – immense amounts of data.** Given that GeoEye received nearly two million dollars in contract-related fees from the US government for its Ikonos pictures (The New York Times, 2001), this could incentivise the commercial satellite industry to continue to restrict data that might serve the interests of citizens globally. As such, satellite imaging may turn into a form of orbital data-siphoning where companies conducting observations in space could sell off their data to the highest bidder, with a concerning disregard for privacy rights. Indeed, the revelations surrounding Cambridge Analytica and Facebook have underscored the extent to which private entities are monetising off the sensitive information of their consumers unknowingly (Balkin, 2018: 2050-2051).

#### Privatization escalates space conflict – ASAT strikes, space debris, and military confrontations cascade from space colonization [0:21]

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Discussion & Research Implications Conflict in the 21st Century If outer space can indeed be analyzed and predicted by realism, then **the 21st century will be characterized by intense competition to obtain space power** and/or inhibit other states from achieve it. **Conflict in space will be exacerbated by public and private ventures that international law could not conceive when created,** **such as space privatization and colonization**. Prominent scholars in the fields of international relations and astropolitics recognize the possibilities of conflict. Laura Grego, Senior Scientist at the Global Security Program at the Union of Concerned Scientists, writes:52 In recent decades, satellites have become increasingly important in the economic, civil, and military spheres. At the same time, space has become more crowded with satellites and the debris from their use, and many more states have become spacefaring. However, the legal and normative regime has not kept pace with these changes. Recent trends and events – including demonstrations of antisatellites (ASAT) capability, a **collision between satellites, and a dramatic increase in dangerous space debris** – make clear that the space environment needs more protection, that satellites face growing risks, and that space activities may be a potential source of mistrust and tension between countries. **While voluntary confidence-building and transparency measures can help solve some of these issues**, more substantive engagement is required to keep space safe and secure into the future. Moreover, **the US space program may be directing the world to confrontations in space**. The 2018 Defense authorization bill requires the Department of Defense (DoD) to establish a new Space Corps and a new Space Command by January 2019.53 Furthermore, General John E. Hyten, Commander, Air Force Space Command, stated space is vital and essential to joint warfare.54 Therefore, he contended implementing a new Space Mission Force that “move[s] beyond the status quo and adopt[s] new tactics, techniques and procedures (TTPs)” is necessary so that the US may execute “swift and deliberate action” when deterrence fails.55 The amount of factual knowledge available on parties involved, as well as **technology being developed increase uncertainty and fear among international actors**. Technology The technologies needed for human deep space travel and for humans to live on extraterrestrial bodies are designed to overcome human’s greatest technical drawback: humans evolved to live only on Earth. Deep space refers to distances at and/or past the moon.56 Many obstacles such as radiation poisoning and osteoporosis may find a technological solution in the forms of human enhancement. The issues that arise from developing and employing such technologies may affect institutions and public policy on Earth**. The main concern with human enhancement is that its use may not be just, it provides a new dynamic for equity and ethical dilemmas**: “’How will technology be developed, by whom and for whom?’ Will nanotechnology reach those in desperate need”.57 Due to the overly market-oriented and laissez-faire way in which technological development is carried out in the US, “there is a great amount of hubris in regard to how scientific and technological achievements are used in society”.58 At the same time, the technologies needed for are dual use – “can be used for both civilian and military purposes**”** – which allows both the US military and other domestic and foreign institutions to weaponized and militarize benign technologies**,** Bill Joy’s fear.59 Developing technologies such as human enhancement may expedite the goals of the new space era but the development and commercial adoption of the technologies needed raise numerous ethical and social issues, including, but not limited to: (**1) defining the distinction between therapy and enhancement, (2) concerns about “playing god”, (3) concerns about the return to eugenics, (4) concerns about the commodification of human life, and (5) issues around social justice and disparities in access to new technologies**.60 With the amount of public and private investment for human deep space travel, many disruptive and promising technologies will be developed. Combined with commercialization, scarcity, and absence and lack of public policy, those technologies may enable the future’s many critics of the new space era fear. At the very least, **standards for social justice, equity, and equality will be challenged**.

#### Space colonization makes nuclear space war inevitable given current geopolitical tensions [0:22]

Pethokoukis and Deudney 21 (James Pethokoukis Senior Fellow; Editor, AEIdeas Blog; and DeWitt Wallace Chair. Daniel H. Deudney teaches political science, international relations and political theory at Johns Hopkins University. He holds a BA in political science and philosophy from Yale University, a MPA in science, technology, and public policy from George Washington University, and a PhD in political science from Princeton University.), “Space expansionism, geopolitics, and the future of humanity: My long-read Q&A with Daniel Deudney”, AEI Ideas, 6-19-21, <https://www.aei.org/economics/space-expansionism-geopolitics-and-the-future-of-humanity-my-long-read-qa-with-daniel-deudney/> NT

Yeah. I think that the directions that we’re headed in are largely disaster-prone. And of course, one of the directions that we’re going in that never gets talked about is continuing to modernize, replace, and improve the nuclear weapon delivery system. That is, as I said earlier, this major space program that we don’t acknowledge as such. And the United States has, during the Trump era, declared the objective of dominating space. And this is something that has long been talked about by various military visionaries. But this was an important threshold that we have crossed. **The SpaceX** Corporation, as I’m sure everyone listening to this podcast knows, **has lowered significantly the cost of accessing near-Earth orbit** — by a kind of order of magnitude, perhaps. And they have these plans to build even larger rockets that they make claims about even further reducing the cost of accessing near-Earth orbit. And this is widely hailed as a great advance. I look at this, and I say, “Well, it’s going to lower the cost of doing stuff in space.” And the question then is: Which of this stuff is going to get done? And of course, **immediately the military is interested**. The idea that we can dominate space is going to depend upon having the capacity to put significant mass into orbital space. So I think that we have been misperceiving the overall character of this environment. **We’ve been misrepresenting the actual effects to date**. And when we get rid of this “Oh it’s going to all be so wonderful” mentality and critically examine what has happened, what is happening, and what is likely to happen, we have a very different picture. And I want to emphasize that I am not a Luddite. I am not opposed to technology generally, but humanity over the course of the 20th century has started to develop technologies that are extremely potent, double-edged swords. And the question that we have to confront is whether we have the ability to steer the use of these technologies so that we get the benefits without getting the downsides. And our record so far is not very promising. But we haven’t used nuclear weapons. In fact, the United States reached agreements with the Soviet Union to reduce nuclear weapons. And you could say we’ve even over-corrected because our fear of radiation has led us to abandon nuclear power. So hasn’t the record shown that we have been able to handle these weapons and that, if anything, we’ve been overly cautious when it comes to dealing with new technologies that could have a great benefit? Well, that would be a long conversation. And with regard to nuclear weapons, we have a fundamental epistemological problem here: What is the probability of nuclear war? During the Cuban Missile Crisis, John Kennedy said he thought it was between **one-in-three and one-in-two**. And knowing what we now know about the Cuban Missile Crisis, **it was clearly more likely than that**. So do we look at the Cuban Missile Crisis and say, “Hey, no problem here”? Or do we look at it and say, “We were really lucky”? There’s a fundamental disagreement about nuclear weapons that we really can’t resolve by appealing to the empirical evidence. And that fact alone should be very sobering to us. But I think that if you looked at this without any sort of theoretical presumptions and said, “Is it really a good idea to have thousands of high-yield thermonuclear weapons prepared for nearly instant use?” That strikes me as a bad idea. And, you know, some people say, “Well, that’s what saves us.” But look at this as a case study: The only way we can deal with nuclear weapons is by building large numbers of them and have them posed for immediate use? That strikes me as a very limited adjustment. So do you think that ultimately we’re going to have to get lucky again? There seems to be a lot more interest in space. And that interest is obviously among countries who have major disagreements and **who view space as both an economic opportunity and as a military necessity**. **So it seems like the scenario going forward is a multipolar space race with an uncertain conclusion.** That’s right. That’s clearly where we’re headed now.

### Plan Text [0:07]

#### Recognizing that the appropriation of outer space by private entities is unjust, states ought to extend the non-appropriation principle of the Outer Space Treaty of 1967 to private entities.

## Solvency [1:48]

#### Treaties are normal means for establishing necessary multilateral space iLAW [0:19]

* Space is historically unregulated because no country has a jurisdictional claim in space
* The only way states have made large multilateral legislation is through treaties to standardized norms
* Countries view multilateral norms as necessary to prevent space conflict

Goguichvili et al 21 (Sophie Goguichvili is a Program Associate with the Science Technology and Innovation Program, working on space, cybersecurity, 5G, and artificial intelligence policy. Sophie is particularly interested in the shifting role of technology and how it will influence the future of conventionally resilient democratic nations. Previously, she interned in the Office of the Director, President, and CEO at the Wilson Center, where she researched and drafted memoranda on contemporary topics in international affairs and national security. She received her BA in International Studies from the School of International Service at American University. Sophie is a native speaker of Georgian and has attained full professional proficiency in French. Other listed authors are Alan Linenberger and Amber Gillette.), “The Global Legal Landscape of Space: Who Writes the Rules on the Final Frontier?”, Wilson Center, <https://www.wilsoncenter.org/article/global-legal-landscape-space-who-writes-rules-final-frontier> NT

The Five UN Space Treaties **As previously mentioned, a series of treaties adopted by the U.N. General Assembly (UNGA) form the foundation of the global space governance system**. The first and most significant of these treaties is the “Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space including the Moon and Other Celestial Bodies,” more commonly known as the Outer Space Treaty or OST for short (1967). The Outer Space Treaty is considered the most comprehensive space treaty and provides the basic framework for international space law, namely: the exploration and use of outer space for peaceful purposes by all States for the benefit of mankind (Art. I); the outlaw of national appropriation or claims of sovereignty of outer space or celestial objects (Art. II); a ban on the placement of weapons of mass destruction in orbit or on celestial bodies (Art. IV); that astronauts should be regarded as the envoys of mankind (Art. V); and that States are required to supervise the activities of their national entities (Art. VI). Although the Outer Space Treaty is the cornerstone of international space regulation (with 111 ratifications and 23 signatories), gaps in governance were evident immediately after its adoption. The primary weakness of the OST is that it only addresses the non-placement of weapons of mass destruction and not conventional weapons in space. While placing a weapon in space would be deemed an act of war universally, the OST’s lack of scope is particularly important in the modern-day context where ground-based weapons such as anti-satellite (ASAT) weapons exist to target space assets. The OST’s vague language about how states manage their space resources raises additional issues, as States have taken it upon themselves to define terms based on their own national priorities and interests. Besides competing national priorities and interests in space, many definitions of terms were written before space technologies advanced. Definitions of “space weapon,” “defensive” or “peaceful” use of outer space, and “astronaut” have all evolved and changed since the original treaty was written. To supplement these gaps, four additional treaties were created, but were largely unsuccessful in garnering enough support and mitigating the deficiencies of their predecessors. Expanding on Articles 5 and 8 of the OST, the second foundational U.N. space treaty “The Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space'', termed the Rescue Agreement (1968), states that States must take measures to rescue and assist astronauts in the event of an accident, distress, or emergency landing, and return them to their launching state in addition to assisting launching states with recovering space objects that return to the Earth outside the native state of launch. Even though the Rescue Agreement is clear on the status of astronauts as “envoys of mankind,” an opportunity for other States to test the Agreement’s efficacy—or assist an astronaut in distress has not yet occurred to help when one state’s astronauts or cosmonauts were in distress. The third foundational U.N. space treaty, “Convention on International Liability for Damage Caused by Space Objects,” termed the Liability Convention (1972), outlines the liability of Launching States for damage caused by their space objects both on the Earth or in space as well as procedures for the settlement of claims for damages endured. This means that states remain responsible for any space assets launched from their territory, which infers that the same states are liable for any damages should there be an accident. According to the Liability Convention, claims against damage or destruction are brought by a state against a state, irrespective of who caused the incident, whether it was a commercial actor or a State space agency. According to most national legal instruments, an individual or an industry could initiate a lawsuit against another individual or industry, but regarding international space law, the Liability Convention determined that states are ultimately responsible even if an incident is caused by a private actor. The Liability Convention has only been invoked one time, in 1978, when the USSR’s Cosmos 954 satellite accidentally reentered Earth’s atmosphere, scattering around 50 kg of radioactive uranium-235 over northern Canada. Although this area was sparsely populated, several residents were accidentally exposed to radiation before a major recovery campaign succeeded in sweeping a total area of 124,000 square kilometers over the course of almost one year (Karacalıoğlu, 2014). Since the 1950s, debris have been accruing in space. NASA estimates there are roughly 22,000 objects larger than 10cm in diameter in near-Earth orbit. The Liability Convention outlines the liability of Launching States for damage caused by their space objects both on the Earth or in space. Credit: NASA/JSC/Orbital Debris Program Office The fourth treaty, “Convention on Registration of Objects Launched into Outer Space,” termed the Registration Convention (1976), has a straightforward objective of registering space objects. Building on Article VIII of the OST which deals with the registration and jurisdictional aspects of launched outer space objects, the Registration Convention states that launching States must maintain a registry of their space objects and provide the U.N. with information on the objects they launch into outer space. This treaty is important from the standpoint of both the Rescue Agreement and the Liability Convention in that without the registration of space objects, no State could ever be held accountable should an incident occur. Its purpose, therefore, is to identify which State’s object it was, as well as to fix liability and compensation on states for damage or destruction. The fifth treaty, “The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies,” termed the Moon Treaty (1984), has received the least support by Member nations for its reaffirmation and elaboration of Outer Space Treaty provisions in the context of appropriating and exploring the Moon and exploiting its resources. The Moon Treaty states that the Moon shall be used by all states “exclusively for peaceful purposes,” and that “(A)ny threat or use of force or any other hostile act or threat of hostile act on the moon is prohibited.” Additionally, it prohibits the placement or use of weapons of mass destruction (WMD) on the Moon, as well as the “establishment of military bases, installations, and fortifications, the testing of any type of weapons and the conduct of military maneuvers” (U.N. Office for Disarmament Affairs, 1979).

#### Applying International Humanitarian Law (IHL) from the OST is key to resolving space conflict [0:25]

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Does IHL apply to warfare in space? There has been much debate as to whether the preamble and Article IV of the Outer Space Treaty, which both emphasize the use of outer space for “peaceful purposes,” prohibit all military operations in space. They do not, nor is there any such analogous customary international law prohibition. Indeed, it is now generally accepted that peaceful does not mean “non-military” but simply equates to “non-aggressive.” This fact is demonstrated by the extensive State practice of using space for military purposes. However, even if such a prohibition existed, it would have no bearing on the applicability of IHL to operations into, through, or from outer space. This is because IHL is never dependent on the lawfulness of the decision to employ force. Rather, its **applicability is a question of fact** — specifically, **whether the situation at hand amounts to an international armed conflict (IAC) or non-international armed conflict (NIAC)**. If an IAC or NIAC has begun, **all operations with a nexus to the conflict are subject to IHL’s obligations, prohibitions, and restrictions**. **This is clear from Article III of the Outer Space Treaty,** generally deemed to reflect customary law, which provides that States Party to the instrument must use outer space “in accordance with international law.” There is no cogent reason to suggest that the reference to international law was meant to exclude IHL. Further, the International Court of Justice (ICJ), in its 1986 Nuclear Weapons Advisory Opinion, confirmed that IHL applies to “all forms of warfare and to all kinds of weapons, those of the past, those of the present and those of the future.” The ICJ did so without proffering any distinction based on the domain of warfare in which hostilities occur or, indeed, the means or methods utilized therein. The position of the United States expressed in the Department of Defense Law of War Manual is in accord with the ICJ in this regard: [L]aw of war treaties and the customary law of war are understood to regulate the conduct of hostilities, regardless of where they are conducted, which would include the conduct of hostilities in outer space. In this way, the application of the law of war to activities in outer space is the same as its application to activities in other environments, such as the land, sea, air, or cyber domains. The International Committee of the Red Cross (ICRC) also takes this position. In its 2019 Challenges Report, the ICRC pointed to the 1949 Geneva Conventions’ reference to “any … armed conflict” in Common Article 2 to support its position that IHL would apply directly to armed conflicts in space. The ICRC further noted that while the 1977 Additional Protocol I (AP I) to the Geneva Conventions contains a geographic applicability limitation in Article 49(3), the rules therein specifically apply to any warfare affecting civilians on land. Accordingly, the ICRC rightly concludes that “IHL applies to any military operations conducted as part of an armed conflict, including those occurring in outer space.” Although the applicability of IHL to space operations carried out during an armed conflict triggered by terrestrial military force is indisputable, whether space operations can alone initiate a state of armed conflict is a more challenging question. This challenge is most pronounced with respect to NIACs. Indeed, for hostilities in space to rise to the level of a NIAC, a threshold of “intensity” must be met. By contrast, an IAC occurs whenever “hostilities” occur between the armed forces (or other organs) of States. As with cyber operations, this begs questions of both intensity and nature. The ICRC has long maintained that there is no intensity requirement for hostilities to qualify as an IAC, although that assertion is not universally accepted. Clearly, a space operation causing significant damage would qualify as hostilities, as in the case of a kinetic anti-satellite (ASAT) attack. Yet, it is uncertain whether incidents involving slight or no physical damage would ever initiate an IAC. In this regard, consider, for instance, a satellite rendezvous and proximity operation (RPO) that blinds a satellite used for missile early warning by positioning itself so as to obstruct sensors. Other examples might include a cyber operation that permanently or temporarily disrupts a key military communication satellite’s functionality, or the use of a space object to nudge a non-maneuverable navigational satellite out of its intended orbit. Whether and when States would treat such operations as hostilities in the IHL context remains to be seen. Of course, even if it did not cause damage directly, if the reasonably foreseeable consequence of a military space operation is physical harm, as in the case of interfering with a navigational satellite in a manner that results in maritime collisions or aircraft crashes, a putative IAC would be underway. The Term “Attack” in the Space Context In IHL, the concept of “attacks” is the fulcrum upon which many rules rest. For instance, civilian objects may not be “attacked,” all “attacks” must comply with the rule of proportionality, and an attacker must take precautions “in attack” to minimize harm to civilians and civilian objects. The applicability of these and many other IHL rules depends on the space operation in question qualifying as an “attack,” defined in Article 49(1) of AP I as an “act[] of violence against the adversary, whether in offense or in defence.” Undoubtedly, any military space operation that causes physical damage, whether in space or on earth, amounts to an attack where that damage surpasses a de minimis threshold. Nevertheless, difficult questions remain regarding where to draw the line between space operations qualifying as an attack and those that do not. It is instructive that the uncertainty pervading the issue in the cyber context applies mutandis mutatis to space operations. For instance, a general consensus exists that permanent interference with functionality qualifies as damage. This would be the case, for example, if a cyber operation permanently disabled a military satellite, even if no physical harm resulted to the satellite and it remained in orbit. Similarly, it is reasonable to conclude that taking full control of a satellite on a permanent basis, a technique that was demonstrated decades ago, would equate to a permanent loss of functionality and therefore be an attack. But beyond such relatively clear-cut cases, many legally ambiguous scenarios loom. For example, it is unclear whether temporarily jamming a civilian satellite’s downlink or uplink such that it could not perform its intended function would be an attack in violation of the rule against attacking civilian objects. Also unsettled is the issue of whether self-destruction of one’s own satellite (as China did in a 2007 ASAT test) would, during an armed conflict, amount to an attack. Though the position is far from settled, our view is that, standing alone, it would not. However, if such a self-destruction operation was designed to generate orbital debris that would likely result in catastrophic damage to enemy satellites, the operation would qualify as an attack to which IHL rules would apply. In such a scenario the damaged satellites would be the “object of attack” in IHL terms. Or consider regional denial of the GPS signal by the United States over enemy territory. Would denying GPS service, which is provided by a U.S. Department of Defense satellite constellation, be an attack if damage or injury resulted, as might be the case if a civilian emergency response system relies on GPS data? If not an attack as a matter of law, because the United States provides the service, the rules regarding indiscriminate attack and proportionality presumably would be inapplicable. If so, what rules would apply? As with cyber, the definition of attack in the space context will prove a determinative factor vis-à-vis IHL’s effectiveness in governing space conflict. The Principle of Distinction and Military Space Operations **At the core of IHL lies the principle of distinction**, according to which parties to an armed conflict must distinguish between combatants (fighters) and civilians, and between military objectives and civilian objects, when engaged in hostilities. Labelled a “cardinal principle” of IHL by the ICJ and given expression in treaty form through Articles 48, 51 and 52 of AP I, the principle of distinction undoubtedly reflects customary international law. Article 52(2) of AP I, which also echoes customary international law, further clarifies that objects may only be attacked if, “by their nature, location, purpose or use [they] make an effective contribution to military action and [their] total or partial destruction, capture or neutralization, in the circumstances ruling at the time, offers a definite military advantage” to the attacker. The ICRC’s official Commentary on the Additional Protocols notes that the text of Article 52(2) constitutes a valuable guide but also readily admits that its text will not always be easy to interpret for those who, in practice, have to decide on whether to proceed with an attack (para. 2016). This is a perceptive statement generally, but is especially apposite with respect to space warfare. **The common practice of using civilian launch systems to place military satellites into orbit offers a fairly straightforward case study of qualification as a military objective** under Article 52(2) and customary law. To illustrate, a United Launch Alliance Delta IV (i.e., civilian) rocket carried the Wideband Global SATCOM satellite into space for the U.S. Air Force in 2019. This satellite forms part of the U.S. military’s global satellite communications backbone, which provides high-capacity communications for U.S. military personnel. During an armed conflict, both the military satellite and the civilian launch system would clearly be targetable, the former because it is a military objective by nature, the latter due to its use by the armed forces. Yet, other cases are less straightforward. Of significance in this regard are “hosted payloads.” Technology carried aboard a satellite can be classified as either part of the “bus” or the “payload.” The bus refers to the metal or composite frame on which various subsystems are mounted. Typical subsystems include an attitude control system (to keep the satellite pointed in the right direction), power source (e.g., solar panels), and on-board computers. Satellites also carry mission-specific equipment to perform specialized tasks (payloads). For example, where a satellite’s mission is to take detailed images of the Earth’s surface, the satellite’s payload will likely be an optical camera or infrared sensor. A hosted payload “allows users, such as military forces, to add transponders or other equipment to a commercial satellite already scheduled for launch.” Such hosted payloads have missions that are distinct from those of the primary payloads aboard the bus. By way of example, in 2011 the U.S. Air Force launched the Commercially Hosted InfraRed Payload (CHIRP) as a hosted payload on a communications satellite owned by a commercial satellite operator. CHIRP was designed to test a new infrared sensor to be used by future missile warning systems. Despite some practical drawbacks, the use of hosted payloads is likely to continue and possibly proliferate. Indeed, in 2018, the U.S. Government Accountability Office recommended the use of commercial satellites to host government sensors or communications packages as one way the U.S. Department of Defense (DOD) can achieve on-orbit capability faster and more affordably. The initial IHL challenge posed by hosted payloads is identifying the “object” that qualifies as a military objective. One approach is to treat the satellite and all payloads thereon as a single object. This approach would mean that if any one payload makes an effective contribution to enemy military action, the entire satellite would become a military objective. This has the attractiveness of simplicity but, in certain circumstances, could have negative consequences for civilians because the rules on proportionality and precautions in attack would not apply to damage to the non-military aspects of the satellite. For some, however, the principle of distinction requires treating any civilian payload as a civilian object. This approach would require the attacking force to try and minimize harm to such a payload. Any damage to a civilian payload would also have to be considered as “collateral damage” when applying the rule of proportionality. In some circumstances, harm befalling civilian payloads might be “excessive,” thereby barring attack on the satellite altogether despite the presence of the hosted military payload. It bears mentioning that the satellite bus, however, would be a dual-use object relied on by the military payload (e.g., as a source of energy) and thus be targetable as a military objective; harm to the bus would not, therefore, influence the proportionality analysis. The experts who authored Tallinn Manual 2.0 on cyber operations occupy a middle ground in this regard. They opined that an attacker is required to consider any expected harm to “clearly distinguishable civilian components of the military objective” (Rule 101, para. 3). **If the civilian components are not clearly distinguishable, the entire object qualifies as a dual-use military objective.** Yet, in the space context, even this approach poses practical problems. For example, given that payloads aboard a bus rely on the bus to operate, for instance by providing power, and the bus clearly qualifies as a dual-use military objective, can such civilian payloads be unambiguously said to be distinguishable? As is apparent, the textual simplicity of Article 52(2) of AP I masks particular complexity in the space context. The law of neutrality exacerbates issues of space targeting. Consider the two satellites being built for Space Norway, each equipped with payloads for Inmarsat (a commercial entity), the Norwegian Ministry of Defense, and the U.S. Air Force. The U.S. Air Force payload will enable Extremely High Frequency (EHF) military communications. If the U.S. is party to a future IAC in which Norway is not a co-belligerent (i.e., fighting on the same side), could the satellites, which will be registered in Norway, be attacked by the forces fighting the United States? This scenario may further influence how States choose to deal with the hosted payload question. The practice of leasing or sharing bandwidth, exemplified by the Australian Defence Forces’ use of U.K. or U.S. military satellite communication systems, raises discrete but related issues. Clearly, the growing commercialization of space activities, reliance on commercial space systems by military forces, and dual-use nature of many space technologies will provide myriad challenges in identifying military objectives in order to apply the principle of distinction during armed conflict in outer space.

#### Treaties developing detailed principles let states facilitate increased IHL compliance. [0:20]

Massingham and McConnachie 21, Eve Massingham [Senior Research Fellow in the Law and the Future of War team at the University of Queensland School of Law. She has worked in the field of IHL for ten years with the International Red Cross and Red Cres- cent Movement throughout East and Southern Africa and in Australia. Eve holds a PhD from the University of Queensland and, among other qualifica- tions, an LLM from King’s College London where she attended as a Cheven- ing Scholar. She is an Australian qualified lawyer and has published a number of book chapters and articles on IHL. Eve has also served as an Australian Army Reserve Officer] and Annabel McConnachie [worked with the IHL team at Australian Red Cross as a volunteer and staff member since 2003. Primarily involved with dis- semination activities, she led the project developing a series of advocacy pub- lications in collaboration with Pacific National Red Cross Societies for high- level engagement with parliamentarians. Annabel holds a BA (Hons) in law and history from Keele University and a Master of International Relations from Macquarie University in Sydney, where she lectured and convened units about human rights, international law and forced migration for ten years], “Common Article 1: emerging themes,” ch. 17 in *Ensuring Respect for International Humanitarian Law* (ed. Eve Massingham and Annabel McConnachie), Routledge Research in the Law of Armed Conflict, 2021, card from pg. 266-268, beckert

The most consistent theme that emerges from these chapters is that ensuring respect for IHL is not a discrete requirement of the GCs and APs. It cannot be neatly compartmentalised and defined in isolation. To ensure respect, as an exter- nally facing obligation, a State needs to recognise that all actions taken to respect IHL within its own jurisdiction have a direct impact on its capacity and ability to ensure respect as a third State. Indeed, it is very difficult for a third State to ensure respect for IHL by other States or external actors, if that State does not undertake the measures recognised as essential within its own jurisdiction to respect IHL. A State’s individual actions to fully adopt and implement all aspects of IHL internally are critical for a State to enable it to look beyond its own borders and have the influence required to encourage other States to respect the law. For example, Pratt notes ‘[i]ncreasingly, legislative decisions which may at first appear to be internally focused necessarily acquire an external aspect’ (Chapter 4, p. 46). Lloydd points out, ‘[f]oreign fighting straddles both the internal and external components of the obligation’ (Chapter 15, p. 234). Ball and Zegenhagen conclude that ‘recommit- ting and reinforcing the importance of IHL within counter-terrorism legislation ... will serve to realise obligations of CA1 to both respect and ensure respect for humanitarian imperatives’ (Chapter 12, p. 194–195). Massingham discusses how when the internal military doctrine of third States reflects compliance with IHL they ‘can use their capacity and influence with other States – including in part- nered warfare operations – to improve IHL compliance through exporting military training and military manuals that are IHL compliant’ (Chapter 8, p. 124). The need to have “one’s own house in order” is particularly evident when looking at the aspects of IHL that pertain to interoperability – for example, detention opera- tions discussed by Thynne (Chapter 11), the coalition operations mentioned by Ste- phens (Chapter 7) and peacekeeping operations within Smith’s chapter (Chapter 10). Stephens, for example, points out that ‘the inevitable requirement for achieving maximum consistency in legal interpretations is one manifestation of ensuring respect that is achieved in the context of coalition operations’ (Chapter 7, p. 112–113). This clearly requires respect for IHL by the State itself such that their contribution to the coalition interpretations is itself compliant with IHL. As Massingham (Chapter 8) and Nasu (Chapter 9) conclude, with respect to both conventional and emerging technologies (in the case of Nasu specifically artificial intelligence) there is a need to meet the respect obligations, such as in relation to import and export control of weapons and weapons-related technology in order to be an influence over others. The diplomatic repercussions of failing to live up to the internal obligations to respect IHL, would ensure that any efforts to encourage compliance by other States would be disregarded. Smith points out that the implementation of IHL and international human rights law (IHRL) policies within UN Peacekeeping enables the UN to seek IHL compliant behaviour from troop contributing countries within their own jur- isdiction (expressly in relation to the prohibition against the recruitment of child sol- diers) (Chapter 10, p. 157–158). The capacity of a State to adopt and domestically recognise all the relevant aspects of the GCs and APs is important to enable it to be taken seriously in any outward-facing action. However, this does not preclude a State from operating in both areas simulta- neously. Whilst disseminating to groups identified within the State (armed forces, par- liamentarians and decision-makers, the population generally) and enacting and implementing the law through appropriate policy choices, a State is also able to encou- rage other States to respect the law. Demonstrating an ongoing capacity to act positively to support IHL domestically encourages other States to do the same and creates a ‘mutually reinforcing’ relationship whereby respecting IHL results in ensuring respect. Building respect through legal and normative frameworks Building an environment conducive to respect for IHL is the second category of activities States can and are taking to ensure respect. This applies to acceptance of and compliance with legally binding obligations, as well as the role of States in creating new normative frameworks or developments in “soft law”. It also applies to actions such as training, capacity-building and the sharing of knowledge and information. It is well accepted that creating an environment conducive to building respect for IHL includes support for international laws which recognise and further develop those principles within the GCs or APs. Given that all States have signed the GCs it would seem self-evident that States should encourage and support further treaty law which identifies specific aspects of the GCs and strengthens those aspects through more detailed provisions. Both Pratt (Chapter 4) and Mas- singham (Chapter 8) make the observation with respect to the Arms Trade Treaty, that supporting the ideal that (otherwise lawful) weapons should not be provided to those who are using such weapons to violate IHL is a way of ensuring respect for IHL. A number of authors highlight the United Kingdom case in which the government has been forced to suspend weapons export licences for failing to investigate, in accordance with the correct legal procedures whether Saudi Arabia was committing breaches of IHL/war crimes in Yemen

#### Extending the non-appropriation principle to private entities solves colonial logics and space conflict [0:24]

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SPECIAL NATURE OF THE NONAPPROPRIATION PRINCIPLE: CHARACTERISTICS OF A STRUCTURAL RULE OF INTERNATIONAL LAW The interpretation of the non-appropriation principle in terms of a rule of customary law has received a broad support in the legal literature. I fully agree with such interpretation. However, I suggest to goes further this classic interpretation and to give the non-appropriation principle a special character. Having in mind the fundamental role that the non-appropriation principle plays in the proper functioning of space activities and the numerous examples deriving from States practice which attest its importance, I think that the non-appropriation principle should be considered a rule holding a legal effect which is superior to that of a classic customary norm. In short words, along with the typical characteristics belonging to a customary rule, the non-appropriation principle incorporates some other elements which provides it with a peculiar status and that allow this author to collocate the nonappropriation principle in a intermediate position between a customary and a jus cogens rule. Using as a starting point the words of the ICJ, which in the North Sea Continental Shelf Case, affirmed the existence of a particular category of provisions of “a fundamentally norm-creating character…”18, I propose to classify the non-appropriation principle as a “structural” norm. The adjective structural 5 refers to the fact that this principle represents the essence of the space law system. In my opinion, in order to identify a principle as a “structural” norm, such principle needs to hold the following characteristics: 1) It must represent the basis of the legal framework regulating a field of international law, i.e., it must constitute the fundamental pillar on which such framework is built on. 2) Its presence ensures that the other principles constituting such legal framework can operate and fulfil the purpose for which they are set out. Thus, we may say that without this structural principle the other rules of the above mentioned legal system lose their significance. 3) There must be a historical and present evidence of the special status of the norm in question. 4) If the structural norm is abolished, the legal system of which such norm constitutes the basis will collapse. 5) Its violation generates a special regime of responsibility for the State involved. Let’s see now if the non-appropriation principle incorporates these features. 1) The non-appropriation principle: the basis of space law The non-appropriative nature of outer space is the basic concept of space law. Since the first satellite was launched States agreed to renounce to any sovereignty claim on outer space and to consider outer space as nonappropriable. The upcoming space era was seen as an unrepeatable opportunity for all mankind and as a possible instrument to improve the quality of live of all people on Earth. The non-appropriation principle represented the best guarantee that this “humanitarian” and idealistic approach to the management of the space environment was put in practice. Its presence, indeed, was a manifest promise that States were willing to base space activities on a cooperative basis and to carry out the exploration and use of outer space for the benefit of all. 2) Predominance of the non-appropriation principle over the other space law rules The non-appropriation principle constitutes the premise for the putting into practice and realization of the other principles set out in the Outer Space Treaty. First of all, the freedom of exploration and use by all States of outer space (Article I, par. 2 of the Outer Space Treaty) may exist only in the presence of the non-appropriation principle. If each State was allowed to acquire territorial rights over parts of outer space, the freedom to accede to and use outer space would be reduced or completely abolished. **The nonappropriation principle, indeed, is to be considered the crucial component of the res communis idea.** Secondly, if national appropriation in space was allowed, the preservation of outer space for peaceful purposes only would cease to exist (Article III of the Outer Space Treaty). As analysed, **the non-appropriative nature of outer space has prevented to transport terrestrial conflicts and rivalries into outer space so far.** Moreover, if States were free to “nationalize” parts of outer space I seriously doubt that the principle of cooperation and mutual assistance (Article IX of the Outer Space Treaty) would keep guiding the activities of States in outer space. 3) Evidences of the structural status of the non-appropriation principle It is possible to enumerate numerous examples which support and confirm the structural status of the non-appropriation principle. These examples come both form the past, namely from the process leading to the setting up of space law, and from the current practice of States and private operators in space. Therefore, I have classified such evidences as either historical or modern. 3.1) Historical evidences **The res communis omnium nature of outer space found support in legal theory and in official declarations since the beginning of the space era.** Already in 1947, D. Manuilsky, UN Delegate of the USSR, proposed to submit a resolution to the UN with the purpose to declare outer space “an international entity”19. Such proposal did not find any echo. However, in the literature of the pre and post satellite era there was a generally accepted view that outer space could not be subject to national appropriation. 6 For instance Prof. Jenks in 1965 stated “Space beyond the atmosphere is and must always be a res extra commercium incapable of appropriation by the protection into such space of any particular sovereignty based on a fraction of the earth’s surface”20, while M.S. Smirnoff in 1959 declared that “The right of occupation and discovery does not exist in space which is considered as res communis”21. The principle that outer space was non-appropriable was also affirmed in the 1960 Resolution of the International Law Association declaring “outer space may not be subject to the sovereignty or other exclusive rights of any State”22 and in the 1962 Draft Code of the David Davies Memorial Institute laying down: “Outer space , and the celestial bodies, therein, are recognized as being res communis omnium,…and neither outer space nor celestial bodies in it are capable of appropriation or exclusive use by any State”23. As to the official declarations, already in 1958 Senator Johnson addressed the United Nations by declaring that: “We of the United States have recognized and recognize, as most all men, that the penetration into outer space is the concern of all mankind. If nations proceed unilaterally, then their penetration into space becomes only extension of their policies on earth. Today outer space is free. It is unscarred by conflict. No nation holds a concession there. It must remain that way”. On 14 September 1959, the Soviet space device Lunik-2 crashed on the surface of the Moon by carrying metal emblems bearing the coat of arms of the Soviet Union and the Soviet Republics. Immediately after the Lunik’s reaching the Moon, the soviet academics L.I. Sedov and A.V. Topchiyev declared that the coat of arm did not symbolize any territorial claim24. This interpretation was confirmed by Premier Khruschev during his staying in the US. He stated: “The Soviet pennant as an old resident, will then welcome your pennant and they will live together in peace and friendship and as well as people should live who inhabit our common mother the earth…We regard the sending of the rocket into outer space and the deliverance of our pennant to the Moon as our achievement, and by this word ‘our’ we mean the countries the countries of the entire world, i.e. we mean that this is also your achievement and the accomplishment of all the people living on the earth”25. From the United States side, we can quote the significant declaration of President Eisenhower which on September 22, 1960, addressed the United Nations General Assembly by indicating some basic concepts that in his opinion had to constitute the basis for international space cooperation. Among those there were the following principles: “We agree that celestial bodies are not subject to national appropriation by any claims of sovereignty”26. Later, as we have seen, the non-appropriation principle was incorporate in UNGA Resolution 1721 and 1962. In June, 1966, both the United States and the Soviet Union submitted to the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS) drafts of an instrument that would become the Outer Space Treaty. These drafts were based on the nonappropriative nature of outer space. In 1967, the non-appropriation principle of outer space was formally laid down in Article II of the Outer Space Treaty. Nine years after the signature of the Outer Space Treaty, an international case took place confirming the importance and the general acceptance of the non-appropriative nature of outer space. In 1976, eight equatorial States which were not parties to the Outer Space Treaty, claimed, by means of the Bogotà Declaration, sovereignty rights on the part of the geostationary orbit above their territory27. These States affirmed their non-acceptance of the principles of the Treaty, especially regarding the principle of non-appropriation. Their claim was rejected by the overwhelming majority of States on the ground that the non-appropriative nature of outer space was a rule binding all States independently by their participation to the Treaty. 7 3.2 Modern evidences As indicated in the beginning of this paper, there is an increasing number of legal authors who consider the non-appropriation principle the major obstacle to the commercial development of outer space. With particular regard to the possibility to use and exploit extraterrestrial mineral resources, these authors affirm that the current space law regime, which prohibits the creation of property rights in outer space, fails to guarantee predictability for space entrepreneurs and to protect the rewards of their efforts. Therefore, private operators are discouraged to undertake missions to exploit such resources. In order to make these exploitative activities possible these authors propose the following theories: 1) To amend or simply to remove Article II of the Outer Space Treaty and to replace it with a clause allowing for the creation of titles of property rights in outer space28; 2) To extend the existing terrestrial regime of property rights in outer space. As a consequence, all individuals would be entitled to use, exclude and dispose of outer space and its resources29; 3) The United States should ignore the 1967 non-sovereignty provision and start to appropriate parts of outer space30; 4) The United States should recognise the claim of those who discover valuable mineral resources31. According to this theory the recognition of these claims would not constitute national appropriation, but rather the exercise of the US jurisdiction over its citizens. All these theories must be rejected because they lack a solid legal basis and because none of these proposals is able to prove that a system allowing the creation of property rights, would guarantee the orderly and coordinated development of space exploitative activities. The important consideration for this paper is that, in my opinion, all these attacks on the non-appropriation principle symbolize a confirmation of the special status of such principle within the context of space law. The more such authors attack the nonappropriation principle, **the more its importance and the need for keeping it as the basis of space activities emerge.** The fact that this authors only focus on this principle and not on the others, such as the one establishing that the exploration and use of outer space shall be carried out for the benefit and in the interests of all mankind, is an indication that it is the essence of the space law system. **Apart from these theories, the other major threat to the non-appropriation principle comes from companies which sell lunar and other celestial bodies’ acres**. Among these companies one of the most popular is Lunar Embassy. Lunar Embassy has established the practice of setting out twin companies and to nominate ambassadors from around the world. Recently a juridical controversy has emerged involving the so-called Lunar Embassy in China. The legal consequences of this controversy are particularly relevant for the purpose of this paper. In October 2005 Beijing industrial and commercial authorities suspended the license of Lunar Embassy in China for having engaged in speculation and profiteering and fined it 50,000 yuan. Lunar Embassy in China sued the Beijing Administration32. The Haidian District People’s Court ruled against the company in November 2005. Then, the company decided to appeal against the Court’s decision33. In March 2007 the Beijing First Intermediate People’s Court ruled against the company, stating that no individual or State could claim ownership of the Moon34. In its pronunciation the Court cited the fact that China was part of the Outer Space Treaty, which prohibits appropriation of outer space and its parts, since 1983. The ruling of the Chinese Court represents a very significant confirmation of the nonappropriative nature of outer space after forty years of its entry into force. It is a clear-cut indication of the fact that the nonappropriation principle holds a special status. Individuals are not allowed to act in contrast to it because its presence is vital for the safe management of outer space. **If violation to the non-appropriation principle were allowed, the consequences for the whole space law system would be catastrophic.** Another important re-affirmation of the importance of the non-appropriation principle 8 has been made in 2004 by the Board of Directors of the IISL by means of the “Statement of the Board of Directors of the International Institute of Space Law on Claims to Property Rights Regarding the Moon and Other Celestial Bodies35. The Statements reads: “The prohibition of national appropriation…precludes the application of any legislation on a territorial basis to validate a private claim. Hence, it is not sufficient for sellers of lunar deeds to point to national law, or the silence of national authorities, to justify their claims…”. The Statements also calls the States Parties to the Outer Space Treaty to: “comply with their obligation under Articles II and VI of the Outer Space Treaty…under a duty to ensure that, in their legal systems, transactions regarding claims to property rights to the Moon and other celestial bodies or parts thereof, have no legal significance or recognised legal effect”. The Statement on one side rejects those theories supporting the national registration of private claims to the Moon and other celestial bodies and on the other restates the special obligation relying on States to respect and to ensure the respect of the non-appropriative nature of outer space. 4) The abrogation of the non-appropriation principle will generate the collapse of the system of space law **If the non-appropriation principle was removed, it is very likely that the system of space law as we have know it so far would cease to exist.** In a future space scenario without the presence of the non-appropriation principle, conflicting claims among States would arise. This situation would engender international tension and increase the risk for armed conflict in outer space. Moreover, as soon as a State was able to gain control over an area of a celestial body, there would be nothing to prevent such a State to impose taxes and royalties for the acquisition of rights by private operators to use such area and its resources. As indicated by Sters and Tennen, in a similar scenario the costs for utilizing space resources and for carrying out exploitative missions would increase36. Therefore, the abrogation of the nonappropriation principle would prevent instead of favour, as it is suggested by some, the commercial development of outer space. Additionally, if States were allowed to acquire sovereignty rights over parts of outer space, obviously they would pursue their own purposes and interests. Thus, the idea that the exploration and use of outer space is the “province of all mankind” would lose its relevance. 5) Special responsibility and consequences for the violation of the non-appropriation principle As we have just seen, if the non-appropriation principle was removed, the risk for an armed conflict in outer space would be high. Therefore, States have a special duty to act in conformity with such principle. But what if a State should suddenly decide to violate such principle and to appropriate one part of outer space? What would be the legal consequences of such behaviour? Considering the fact that Article III of the OST makes international law, including the Charter of the United Nations, applicable to the exploration and use of outer space and having in mind that Article I (1) of the UN Charter lays down the obligation to maintain peace and security, and to prevent or remove threats to peace, the individual violation by a State of the principle contained in Article II of the OST should be considered a threat to international peace. Such a State should be seen as responsible for an act of particular gravity towards the whole community of States. Therefore, in a similar situation the other States would be entitled to act collectively through the United Nations to stop such behaviour and to remove this threat to peace. A joint effort and pressure in that direction should be likely to restore the status quo ante. The argument could be put forward that if a State should decide to withdraw from the Outer Space Treaty, it would be no longer bound by the provisions of Article II and thus it could appropriate parts of outer space. This argument should be rejected on the basis that even after that withdrawal, such a State would be obliged to respect the non-appropriation 9 principle in consideration of its structural and special status. CONCLUSION The non-appropriation principle represents the basic principle of space law. Considering its importance and its role in providing the conditions for the peaceful and orderly management and development of space activities, this paper has put forward the hypothesis of considering that principle a structural rule of international law. As it has been shown, there exist several historical and modern examples which confirm the peculiar status of the principle contained in Article II of the Outer Space Treaty. Having in mind the special characteristics of the non-appropriation principle, the theories proposing its abrogation or suggesting unilateral State actions against it are unacceptable. If these theories were put into practice, the use of outer space would evolve into a situation of chaos and, moreover, its commercial development would be hindered instead of favoured. Any hypothetical amendment of the nonappropriation principle should be carried out by all States acting collectively. This would be the only option to prevent the risk of war in outer space and to allow the harmonized management of space activities in the era of space commercialisation.

#### Amending space iLAW is an opportunity to reframe traditional IR discussions about sustainable use and security concerns [0:26]

Sutch and Roberts 19 (Peter Sutch Department of Politics, Cardiff University, Cardiff, UK and Department of Politics, University of the Witwatersrand, Johannesburg, South Africa, and Peri Roberts Department of Politics, Cardiff University, Cardiff, UK), “Outer space and neo-colonial injustice: Distributive justice and the continuous scramble for dominium”, International Journal of Social Economics, Vol 46, Issue 11, August 23rd, 2019, <https://www.emerald.com/insight/content/doi/10.1108/IJSE-03-2019-0152/full/html> NT

The global commons: a brief sketch At their heart, the remarkable early debates about global commons exploitation and management explored the ways in which we might order the regimes governing the deep sea bed and outer space to the benefit of all humankind, with special provision for the needs of less developed states, and with a view to avoiding the conflict and suffering associated with colonialism and war. While the negotiations of what we now know as common heritage regimes really got going in the late 1950s, as previously unavailable natural resource pools became a subject of international interest, it is worth setting the scene by thinking about the nature of property rights in general. This helps us understand the unique way in which the conventional commons sought to govern these resources. Property is a legal construct. There are a variety of ways in which property rights can be assigned but the developed global commons solution was distinctive. Christopher Joyner’s exploration of the legal implications of the common heritage regime that was to govern property rights in the global commons begins (as do many accounts) with the traditional roman law distinction between res nullius and res communis. These terms apply to property or to space that is not owned by anyone. If that space is res nullius then it is open to “appropriation and exploitation by anyone who is capable of carrying out those acts” ( Joyner, 1986, p. 194). Sovereignty is gained, and exclusive property rights established, by demonstrating control over that space by settling it or exercising jurisdiction over it. **On the other hand, if the area is considered res communis it is land owned by no one, open for use by all but not available for appropriation and so not available to become the exclusive property of any one person or any one nation** ( Joyner, 1986, p. 194). Here agents have free access but never gain exclusive title to the resources in question. International or global spaces, such as the sea and the resources therein, were traditionally thought of in res communis terms as, for example, “free seas”. However, when advances in scientific knowledge made it clear that the assumptions of inexhaustibility, the thought that resources were renewable and sustainable enough to provide for all indefinitely, that partly underpins the concept of free seas are problematic this (in addition to several other concerns about the consequences of establishing a res communis regime in the high seas) invited a different approach to at least some questions of property (Schrijver and Prislan, 2009). Under emerging and innovative global commons rules spaces designated as such could not be appropriated and access to the resources of that space had to be carefully managed to ensure sustainability of access for all, at present and in the future. The conception of unowned resources and property in a global commons regime is therefore distinct from res nullius regimes because it denies the right of appropriation and it is distinct from res communis regimes because it denies unfettered access, replacing it with some form of regulated access. The questions of what spaces or resource should be thought of in these terms, what the term implied (about distributive or intergenerational justice, for example), how the space and resources at stake were to be managed and administered, and what obligations the administrators had to humankind as a whole all formed part of the elaborate and often painstaking negotiations regarding property rights and benefit sharing underpinning the international conventions that emerged, and they continue to be hotbeds of legal, political and normative contention. The strongest or most redistributive approach to global commons governance is the notion that the resources at stake were to be treated as the “common heritage of mankind”. The central feature here is that these areas, and the resources therein, need to be managed for the common good. Common features of such regimes include pacific use, sustainable exploitation or conservation, shared scientific advancement, intergenerational justice and distributive justice, albeit to differing degrees across the range of regimes. **Important to the development of such regimes was the thought that the international community needed both to respond to the inequalities associated with colonialism and avoid the consequences for both security and justice of a scramble for dominium over these spaces that was explicitly likened to the colonial “scramble for Africa”** (Pardo, 1967). These were widely understood to be important, but not uncontentious, drivers in these debates. We should understand that the key parties often had differing aspirations for ad interpretations of the idea of the “common heritage of mankind”. The states advocating a NIEO in the aftermath of post-war decolonisation had a distinctive take on the commons ideal, very different from that of many of the more developed states. Socialist states took a different view to the liberal-capitalist states. Key states (perhaps most tellingly the USA) even took such contrasting views at different points in the debates over the period from the 1950s to the present day that it prompts at least one scholar to ask whether the USA’s initial, powerful support for the common heritage ideal is sufficient to make a case from the principle of estoppel that the more laissez faire or neo-liberal approach adopted in the later period is unlawful (Blaser, 1990, p. 87). Several alternative statements of the broad ideals have also been advanced and agreed, such as the idea that such resources might be considered the “common interest of mankind” (The Antarctic Treaty, 1959) or the “common province of all mankind” (Outer Space Treaty, 1967) and related but more general terms such as “the common concern of humanity” (Shelton, 2009). **Changing debates about how we ought to govern the commons have been primarily prompted by advances in science and technology that had important international ramifications for the potential exploitation of resources** rather than by the rise of a philosophical or conceptual notion of the commons. However, early interventions – direct in the case of Arvid Pardo’s (1967) speech to the UN General Assembly and indirect in the form of Garrett Hardin’s (1968) influential paper “The Tragedy of the Commons” in Science – led to some of the most fascinating debates in global politics. These debates about the commons of the sea, outer space and, in a slightly different fashion, the Antarctic all have their roots in the period after the Second World War. Whilst the prospect of immense mineral wealth on the ocean floor had been apparent from as early as 1873, with the “Challenger” voyage which had found polymetallic nodules on the sea bed (Deacon et al., 2001 in Schrijver and Prislan, 2009, p. 177), it was not until the 1960s and the 1970s, when further wealth in the form of polymetallic sulphides and ferromanganese crusts were discovered, that the estimated wealth from these rich mineral deposits became the subject of international concern and debate. Also, in 1957 the launch of “Sputnik I” galvanised the international community and the academic community to think seriously about the challenges and possibilities of space exploration. Finally, in 1958, disputed territorial claims, as well as concerns over sustainable whaling and access to other marine resource and associated security claims, led to the negotiation of the Antarctic regime (Buck, 1998, chapter 3). The designation and acceptance of each of these as “commons” was to be the subject of separate negotiations, but the shared political and historical context of scientific development, post-colonialism, and an emphasis on peace informed by the tragedy of two global conflicts meant that there was much cross-fertilisation between these negotiations. They also shared key drivers of debate in the prospect of incredible wealth that is not yet owned by anyone and in the security implications of these newly accessible spaces. **These were debates in which the values of security, economic exploitation and distributive justice were inextricably intertwined**. This is, perhaps, most straightforwardly illustrated with a closer look at the evolution of conventions and laws governing outer space. Global commons debates, outer space and the deep sea bed Prior to the 1957 launch of “Sputnik I” by the USSR there had been some growing interest among scholars in the prospect of space exploration and its implication for the global legal order. However, it was the success of the Soviet launch that placed the issues firmly on the agenda of the international community and pushed the USA to what President Eisenhower termed the “Sputnik crisis” triggering the “space race” between the two superpowers (Devine, 1993). The USA entered the race in 1958 with the launch of “Vanguard I” and, while the initial driver of the competition was security concerns (the possibility of Soviet missiles in orbit), the launch of commercial communications satellites and later the prospect of the commercial exploitation of extra-terrestrial resources has driven both the politics and conceptualisation of outer space in equally significant ways (Vogler, 2000, p. 95; Tronchetti, 2009). As early as 1952 Oscar Schachter, then Director of the United Nations Legal Department, referred to space as “common property of mankind over which no nation would be permitted to exercise its domination” (Blaser, 1990, pp. 80-81, see also Tronchetti, 2009, p. 91). Scholarly debates revisited the distinction between res nullius and res communis and, argues Tronchetti, “use the term res communis omnium to point out the fact that no state’s sovereignty can be exercised in outer space, because it represents an area of common interest of all mankind” (Tronchetti, 2009, p. 12). This idea, that property rights in outer space ought to be managed as res communis because space was an area of common interest to all mankind, was to have a very significant impact on the later evolution of space law. In 1958 the United Nations General Assembly passed resolution 1348 (XIII) on the peaceful uses of outer space. The resolution established an ad hoc committee which one year later, under UNGA resolution 1472 (XIV), became the permanent Committee on the Peaceful Uses of Outer Space (COPUOS). That resolution, and subsequent ones, retained the references to “the common interest of mankind” and when in 1963 the “Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space” was adopted by the General Assembly (UNGA res 1962 (XIII)) the phrase became a fixture in the debates (Tronchetti, 2009, p. 16). In fact, the declaration prefigured what is often referred to as the Magna Carta of space law, the Outer Space Treaty (OST – Treaty on the Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies 1967). The first four articles of the OST set the general tenor of all future debates: 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. Outer space […] shall be free for exploration and use by all States […] on a basis of equality […] and there shall be free access to all areas of celestial bodies. ARTICLE II Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty […] 1295 Outer space and neo-colonial injustice ARTICLE III States […] shall carry on activities in the exploration and use of outer space […] in the interest of maintaining international peace and security and promoting international co-operation and understanding. ARTICLE IV […] The moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes. (www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/outerspacetreaty.html, accessed 24 October 2018) The language is striking and focussed on both pacific use and shared benefits. The treaty establishes three rights ( free access, exploration and use) all of which are to be carried out for the benefit and interest of all countries. As Tronchetti notes: In general terms this provision means that the exploration and use of outer space, being the “province of all mankind”, is not aimed at serving only the interests of those states that have the technological capability to explore and utilize outer space, **but those of all states, no matter what their degree of economic and scientific development is**. Only mankind acting collectively, by way of international cooperation, has the right to enjoy the benefits derived from space activities and to establish how to share them among all nations. (Tronchetti, 2009, pp. 23-4) Much scholarly effort has been expended on the fascinating project of working through potential differences between the “common province of mankind” and the several related notions found in other treaties and conventions developed to deal with commons, such as the “common heritage of mankind”, “common interest of mankind” and “common concern of mankind”. However, the normative key may lie in trying to understand what follows from the idea that such spaces are common to mankind, regardless of the precise phraseology. Indeed, whilst this variety in concepts could be regarded as a weakness (Blaser, 1990, p. 80) it can also be seen as a strength because it becomes clear that a radical set of ideas have developed and been cemented into the past, current and potentially future discourses. **It demonstrates that each 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.** It is worth emphasising that each iteration of the diplomatic, scholarly and institutional conversation has had to return again to the core questions of what the fact that the commons are “common to mankind” means in moral and practical terms and, importantly, it has not seemed fully appropriate to just set these values aside. Facing the contemporary challenge posed by US policy is no different and our debates must, once again, return to these questions.

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## Framing [1:22]

#### The status quo is in jeopardy of recreating the same geopolitical relations based on colonial logics in outer space [0:20]

Klinger 18 (Julie Michelle Klinger is a geographer at the University of Delaware. She was formerly Assistant Professor of International Relations at the Frederick S. Pardee School of Global Studies at Boston University.), “A Brief History of Outer Space Cooperation Between Latin America and China”, Journal of Latin American Geography, University of Texas Press, Volume 17, Number 2, July 2018, pg. 51-53, <https://muse.jhu.edu/article/701023> NT

As envisioned during the Cold War in a series of conferences among newly or nearly independent states3, South-South cooperation would consist of mutual support and solidarity among Third World, developing, or nonaligned states. **By sharing technology, expertise, and capital, delegates from these countries envisioned a world in which formerly subjugated nations would build modern and prosperous societies** (Tsing, 2005; Prashad, 2007; Mielniczuk, 2013). Many have critiqued China’s twenty-first century “South-South” and “win-win” rhetoric toward Latin American countries as a ploy to advance asymmetrical, pro-China agendas that reinforce Latin America’s subordinate position in the global division of labor ( Jenkins, 2012; Barbosa, 2010; Moreira, 2007). Although the picture is demonstrably more complex (Mora, 1999; Oliveira, 2004; Klinger, 2015; Narins, 2017; Oliveira, 2017), these critiques arise from legitimate environmental, economic, and geopolitical concerns (Queiroz, 2009; Escudé, 2011; Ray et al., 2017; Ray, 2017; Pirzkall, 2017). However, it is noteworthy that in keeping with the mid-twentieth-century ideals of South-South cooperation, in the outer space sector the exchange of scientific and technological expertise has actually occurred, with several African, Asian, and Latin American countries supporting the advancement of one another’s space programs (Wood & Weigel, 2012; Sarli et al., 2015; Peter, 2006; Nagendra, 2016). This is not to suggest that outer space cooperation is benign or apolitical. **Existing inequalities and political struggles on Earth are manifest in outer space development** (e.g. Committee, 2009; Jasentuliyana, 1994). A growing body of geographical literature analyzes **outer space as a key area in which Earthly politics are expressed and an increasingly important arena with which Earthly political economies are coproduced** (Beery, 2011; Messeri, 2016). The manner in which outer space is imagined and represented is dialectically related to ongoing practices of resource use, technological development, and scientific research on Earth (Geppert, 2007; Beery, 2016; Klinger, 2017). Human engagement with outer space reflects unequal power relations on Earth, while also holding the potential to either mitigate or exacerbate structural injustices. In an important recognition of the capacity for human society to engage in outer space for better or for worse, the international community enshrined outer space as the “province of all mankind [sic],” and mandated that it be used only for peaceful purposes in the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies (hereafter Outer Space Treaty, or OST) (UN, 1967). **Because the services provided by spacebased technologies are so crucial to economic, political, and cultural globalization, access to outer space and use of space-based data is important to culture, scientific progress, development, and geopolitical competition** 52 Journal of Latin American Geography (Penley, 1997; Parks & Schwoch, 2012; Harrison, 2013). Therefore, contemporary society cannot be understood without considering “the ever-increasing dependence of mankind [sic] on space-based services,” (Al-Rodhan, 2016, p. 124). This includes the importance of outer space to capital accumulation (Dickens, 2007; Klinger, 2017), military strategy (Dolman, 2002; Sage, 2008), and the maintenance of heteropatriarchy (Pesterfield, 2016; Weitekamp, 2004). The accumulating significance of outer space-based technologies compels us to rethink those areas of outer space in which human activity is concentrated as immediately relevant to Earthly affairs at all levels, rather than as being beyond the global. This requires social scientists to rescale our inquiries to account for a defining feature of our age: the behavior of markets, states, social movements, and scientists is mediated through outer space-based technologies. These technologies link local, national, and international actors and institutions to their enabling infrastructures in outer space. Practically speaking, this means that orbital space is another critical scale of inquiry in social science in general, and in Latin America-China relations in particular. This mirrors a similar insight with respect to scholarship on Latin America-China relations after the first decade of the twenty-first century. As relations between the two regions expanded beyond high-level state-tostate meetings with the growing protagonism of subnational and transnational actors, several researchers adjusted their epistemological frameworks to account for the important processes taking place at scales other than the nation-state that formed the substance of bilateral relations (Armony & Strauss, 2012; Klinger, 2015; Oliveira, 2018 [forthcoming]; Klinger & Muldavin, 2018 [forthcoming]). Taking a cue from diaspora studies (Ma & Cartier, 2003) and geographic critiques of state-centric international relations theories (Agnew, 1994, 2010), this scholarship views Latin America-China relations as playing out on many scales in addition to the nation-state. Taking the role of outer space-based technology and cooperation into account broadens the geographical scope of existing literature to consider a crucial arena in which Latin America-China relations are forged. For China and various Latin American states, **outer space is a critical site for national development, in which the projection of sovereignty and geopolitical power serves as a democratizing mechanism in global fields of science, technology, and strategy.** Understood in this way, the recent history of Latin America-China engagement acquires a more expansive theoretical, empirical, and historical-geographical character. Each of these aspects are briefly examined in turn. Theoretically, the spirit of scientific collaboration in outer space and related research, vouchsafed by the mandates for peaceful use in the 1967 Outer Space Treaty, provides an important check to geopolitically charged framings that tend to predominate China-LAC scholarship (Carver, 1987; Markoff, 1976; Zhao, 2016). Both the history and the significance of China-LAC space cooperation are largely unknown, even among practitioners, policymakers, and scholars of this dynamic and growing relationship. This means research and policy debates have proceeded with little awareness or appreciation 53 A Brief History of Outer Space Cooperation of the profound scientific and technological ties between China and Latin America in this sector. As a result, key developments such as joint satellite launches and the construction of space-related infrastructure tend to be treated as a novelty at best, or with passing alarmism at worst, rather than examined for new theoretical insights about the cooperative configurations of contemporary geopolitics. Empirically, trade, investment, and the impact of both comprise the bulk of the literature on Latin America-China relations. Cooney (2016), Ray (2017), Domingues (2009), inter alia, maintain that the expansion of Latin America-China relations has led to the “reprimarization” of Latin American economies as China demands ever-greater shares of the region’s agricultural and mineral production. While this is demonstrably the case across several Latin American states (Escher, Schneider, & Ye, 2017), there is more to the picture. Outer space cooperation is fundamental to the political economy of Latin America-China relations beyond what it enables in primary commodity extraction. There is significant overlap between space programs and aerospace, scientific, and defense initiatives in international relations in general (Sarli et al., 2015; Pekkanen & Kallender-Umezu, 2010; Cloud & Clarke, 1999; Hulse, 2007). In the case of Latin America, outer space cooperation tends to facilitate scientific and military cooperation, particularly if China agrees to launch LAC satellites. For example, the China National Space Administration (CNSA) launched an Ecuadorian satellite at the Jiuquan Launch Center in Inner Mongolia in 2013 (BBC, 2013). This was followed by a series of high-level exchanges between military officials of both countries every year since, during which the satellite launch was mentioned in formal remarks (CMO, 2017). The significance of satellite technologies is even greater than the support services they provide to the existing political economy or blossoming defense industries. In the case of Brazil and China, space cooperation enabled both sides to independently develop satellites and generate Earth observation data without relying on the United States for imagery essential to monitoring weather, environmental changes, and their respective territories (Furtado & Filho, 2003; da Silva, 2014). **In addition to supporting scientific research in both countries, this was a crucial step toward Southern autonomy in outer space and constituted an important realization of the ideals of South-South cooperation** (Lino, Lima, & Hubscher, 2000; Zhao, 2005; Epiphanio, 2005). This enabled, among other things, Brazil’s space program to develop the world’s preeminent tropical forest monitoring program (Stokstad, 2017). Therefore, examining Latin America-China relations in the space sector reveals empirical data on the geography, history, and motivations of Latin America-China cooperation in general, and on a key overlooked area of global space politics in particular.

#### The ROB is to endorse the best methodology to The scramble to occupy outer space is based in settler logics [0:30]

Smiles 20 (Deondre Smiles, Ph.D. is a postdoctoral scholar at The Ohio State University. A citizen of the Leech Lake Band of Ojibwe, his ongoing research agenda is situated at the intersection of critical Indigenous geographies and political ecology, centered in the argument that tribal protection of remains, burial grounds, and more-than-human environments represents an effective form of ‘quotidian’ resistance against the settler colonial state.), “The Settler Logics of (Outer) Space”, Society and Space, October 26th, 2020, <https://www.societyandspace.org/articles/the-settler-logics-of-outer-space> NT

But, what does this all look like in regard to outer space? In order to really understand the potential (settler) colonial logics of space exploration, we must go back and explore the ways in which **space exploration became inextricably tied with questions of state hegemony and geopolitics during the Cold War**. US and Soviet space programs were born partially out of military utility, and propaganda value—the ability to send a nuclear warhead across a great distance to strike the enemy via a ICBM and the accompanying geopolitical respect that came with such a capability was something that greatly appealed to the superpowers, and when the Soviets took an early lead in the ‘Space Race’ with Sputnik and their Luna probes, the United States poured money and resources into making up ground (Werth, 2004). The fear of not only falling behind the Soviets militarily as well as a perceived loss of prestige in the court of world opinion spurred the US onto a course of space exploration that led to the Apollo moon landings in the late 1960s and the early 70s (Werth, 2004; Cornish, 2019). I argue that this fits neatly into the American settler creation myth referenced by Trump—after ‘conquering’ a continent and bringing it under American dominion, why would the United States stop solely at ‘space’ on Earth? To return to Grandin (2019), **space represented yet another frontier to be conquered and known by the settler colonial state; if not explicitly for the possibility of further settlement, then for the preservation of its existing spatial extent on Earth.** However, scholars such as Alan Marshall (1995) have cautioned that newer logics of space exploration such as potential resource extraction tie in with existing military logics in a way that creates a new way of thinking about the ‘openness’ of outer space to the logics of empire, in what Marshall calls res nullius (1995: 51)[i]. Telescopes on Mauna Kea. (Photo credit: University of Hawaii-Hilo) But we cannot forget the concept of terra nullius and how our exploration of the stars has real effects on Indigenous landscapes here on Earth. We also cannot forget about forms of space exploration that may not be explicitly tied to military means. **Doing so deprives us of another lens through which to view the tensions between settler and Indigenous views of space and to which end is useful.** Indeed, even reinscribing of Indigenous space towards ‘peaceful’ settler space exploration have very real consequences for Indigenous sovereignty and Indigenous spaces. Perhaps the most prominent example of the fractures between settler space exploration and Indigenous peoples is the on-going controversy surrounding the construction of the Thirty Meter Telescope on Mauna Kea, on the island of Hawaii. While an extremely detailed description of the processes of construction on the TMT and the opposition presented to it by Native Hawai’ians and their allies is beyond the scope of this essay, and in fact is already expertly done by a number of scholars[ii], **the controversy surrounding TMT is a prime example of the logics presented towards ‘space’ in both Earth-bound and beyond-Earth contexts by the settler colonial state as well as the violence that these logics place upon Indigenous spaces,** such as Mauna Kea, which in particular already plays host to a number of telescopes and observatories (Witze, 2020). In particular, astronomers such as Chanda Prescod-Weinstein, Lucianne Walkowicz, and others have taken decisive action to push back against the idea that settler scientific advancement via space exploration should take precedence over Indigenous sovereignty in Earth-space. Prescod-Weinstein and Walkowicz, alongside Sarah Tuttle, Brian Nord and Hilding Neilson (2020) make clear that settler scientific pursuits such as building the TMT are simply new footnotes in a long history of colonial disrespect of Indigenous people and Indigenous spaces in the name of science, and that astronomy is not innocent of this disrespect. In fact, Native Hawai’ian scholars such as Iokepa Casumbal-Salazar strike at the heart of the professed neutrality of sciences like astronomy: One scientist told me that astronomy is a “benign science” because it is based on observation, and that it is universally beneficial because it offers “basic human knowledge” that everyone should know “like human anatomy.” Such a statement underscores the cultural bias within conventional notions of what constitutes the “human” and “knowledge.” In the absence of a critical self-reflection on this inherent ethnocentrism, the tacit claim to universal truth reproduces the cultural supremacy of Western science as self-evident. Here, the needs of astronomers for tall peaks in remote locations supplant the needs of Indigenous communities on whose ancestral territories these observatories are built (2017: 8). As Casumbal-Salazar and other scholars who have written about the TMT and the violence that has been done to Native Hawai’ians (such as police actions designed to dislodge blockades that prevented construction) as well as the potential violence to come such as the construction of the telescope have skillfully said, **when it comes to the infringement upon Indigenous space by settler scientific endeavors tied to space exploration, there is no neutrality to be had—dispossession and violence are dispossession and violence, no matter the potential ‘good for humanity’ that might come about through these things.** Such contestations over outer space and ethical engagement with previously unknown spaces will continue to happen. Outer space is not the first ‘final frontier’ (apologies to Gene Roddenberry) that has been discussed in settler logics and academic spaces. In terms of settler colonialism, scholars have written about how Antarctica was initially thought of as the ‘perfect’ settler colony—land that could be had without the messy business of pushing Indigenous people off of it (see Howkins 2010). Of course, we know now that engagement with Antarctica should be constrained by ecological concern—who is to say that these concerns will be heeded in ‘unpopulated’ space? What can be done to push back against these settler logics? Indigenous Engagement with ‘Space’ "River of Souls" by Carl Gawboy (as published in Indian Country Today, 4/2/16) I want to now turn our attention towards the possibilities that exist regarding Indigenous engagement with outer space. After all, the timing could not be more urgent to do so—we are now at a point where after generations and generations of building the myth that America was built out of nothing, we are now ready to resume the project of extending the reach of American military and economic might in space. To be fair, there are plenty of advances that can be made scientifically with a renewed focus on space exploration. However, **history shows us that space exploration has been historically tied to military hegemony**, and there is nothing in Mr. Trump’s temperament or attitude towards a re-engagement with space that suggest that his push toward the stars will be anything different. A sustained conversation needs to be had—will this exploration be ethical and beneficial to all Americans? One potential avenue of Indigenous involvement comes through the active involvement of Indigenous peoples and Indigenous perspectives in space exploration, of course. This involvement can be possible through viewing outer space through **a ‘decolonial’ lens, for instance**. Astronomers such as Prescod-Weinstein and Walkowicz have spoken about the need to avoid replicating colonial frameworks of occupation and use of space when exploring places such as Mars, for example (Mandelbaum, 2018). The rise of logics of resource extraction in outer-space bodies have led to engagements by other academics such as Alice Gorman on the agency and personhood of the Moon. Collaborations between Indigenous people and space agencies such as NASA help provide the Indigenous perspective inside space exploration and the information that is gleaned from it, with implications both in space and on a Earth that is dealing with climate crisis (Bean, 2018; Bartels, 2019). Another potential avenue of engagement with Indigenous methodologies and epistemologies related to space comes with engaging with Indigenous thinkers who are already deeply immersed into explorations of Indigenous ‘space’ here on Earth—the recent works of Indigenous thinkers such as Waziyatawin (2008) Leanne Betasamosake Simpson (2017), Natchee Blu Barnd (2018) and others provide a unique viewpoint into the ways that Indigenous peoples make and remake space—perhaps this can provide another blueprint for how we might engage with space beyond Earth. And that is just the work that exists within the academic canon. Indigenous people have always been engaged with the worlds beyond the Earth, in ways that often stood counter to accepted ‘settler’ conventions of space exploration (Young, 1987). In one example, when asked about the Moon landings, several Inuit said, "We didn't know this was the first time you white people had been to the moon. Our shamans have been going for years. They go all the time...We do go to visit the moon and moon people all the time. The issue is not whether we go to visit our relatives, but how we treat them and their homeland when we go (Young, 1987: 272).” In another example, turning to my own people, the Ojibwe, we have long standing cultural connections to the stars that influence storytelling, governance, and religious tenets (CHIN, 2003). This engagement continues through to the present day, and points to a promising future. A new generation of Indigenous artists, filmmakers, and writers are beginning to create works that place the Indigenous individual themselves into narratives of space travel and futurity, unsettling existing settler notions of what our future in space might look like. As Leo Cornum (2015) writes, “Outer space, perhaps because of its appeal to our sense of endless possibility, has become the imaginative site for re-envisioning how black, indigenous and other oppressed people can relate to each other outside of and despite the colonial gaze.” (Photo Credit: Indigenous Education Institute) These previous examples should serve as a reminder that the historical underpinnings of our great national myth are built upon shaky intellectual ground—we need to be honest about this. America did not just spring forth out of nothing; it came from the brutal occupation and control of Native lands. Despite the best efforts of the settler state, Native people are still here, we still exist and make vital contributions to both our tribal communities and science. We cannot expect Donald Trump to turn his back on the national myth of what made the United States the United States—in his mind, this is the glorious history of what made America great in the past. And it should serve as no surprise that Trump and others wish to extend this history into outer space. Even when Trump’s days in the White House are over, **the settler colonial logics that underpin our engagement with land on Earth will still loom large over the ways that we may potentially engage with outer space.** But for those of us who do work in Indigenous geographies and Indigenous studies, it becomes even more vital that we heed the calls of Indigenous thinkers inside and outside formal academic structures, validate Indigenous histories, and push to deconstruct the American settler myth and to provide a new way of looking at the stars, especially at a crucial moment where the settler state turns its gaze towards the same.

## Advantage [2:40]

#### States use increasingly narrow interpretations of the Outer Space Treaty’s non-appropriation principle to allow for a first-come-first-serve scramble for resource extraction and property rights [0:36]

Pershing 19 (Abigail D. Pershing is a Robina Fellow at European Court of Human Rights. Graduate of UChicago in Sociology, Public Policy and Yale Law School.), “Interpreting the Outer Space Treaty’s Non-Appropriation Principle: Customary International Law from 1967 to Today”, The Yale Journal of International Law, Volume 44, Issue 1, 2019, pg. 161-166, <https://openyls.law.yale.edu/bitstream/handle/20.500.13051/6733/Pershing.pdf?sequence=2> NT

Mirroring the shift in State practice and domestic laws, the legal community has also changed its approach to the interpretation of the nonappropriation principle. Whereas at the time of the ratification of the Outer Space Treaty the majority of legal scholars tended to apply the non-appropriation principle broadly, most legal scholars now view appropriation of extracted materials as permissible.78 Brandon Gruner underscores that this new view is historically distinct from prior legal interpretation, noting that **modern interpretations of the Outer Space Treaty’s non-appropriation principle differ from those of the Treaty’s authors**.79 In contrast to earlier legal theory that denied the possibility of appropriation of any space resources, scholars now widely accept that extracting space resources from celestial bodies is a “use” permitted by the Outer Space Treaty and that extracted materials become the property of the entity that performed the extraction.80 Stressing the fact that the Treaty does not explicitly prohibit appropriating resources from outer space, other authors conclude that the use of extracted space resources is permitted, meaning that the new SPACE Act is a plausible interpretation of the Outer Space Treaty.81 However, scholars have been careful to cabin the extent to which they accept the legality of appropriation. For instance, although Thomas Gangale and Marilyn Dudley-Rowley acknowledge the legality of private appropriation of extracted space resources, they nonetheless emphasize that “[o]wnership of and the right to use extraterrestrial resources is distinct from ownership of real property” and that any such claim to real property is illegal.82 Lawrence Cooper is also careful to point out this distinction: “[t]he [Outer Space] Treaties recognize sovereignty over property placed into space, property produced in space, and resources removed from their place in space, but ban sovereignty claims by states; international law extends this ban to individuals.”83 Although there remain some scholars who still insist on the illegality of the developments-space-property-rights. 2015 U.S. law and State appropriation of space resources generally,84 their dominance has waned since the 1960s. These scholars are now a minority in the face of general acceptance among the legal community that minerals and other space resources, once extracted, may be legally claimed as property. 85 Taken together, the elements described above—statements made in the international arena, de facto appropriation of space resources in the form of moon rocks, the adoption of new national policies permitting appropriation of extracted space resources, and the weight of the international legal community’s opinion— indicate a fundamental shift in customary international law. **The Outer Space Treaty’s non-appropriation clause has been redefined via customary international law norms from its broad application to now include a carve-out allowing appropriation of space resources** once such resources have been extracted. III. IMPENDING SECOND SHIFT IN CUSTOMARY INTERNATIONAL LAW’S INTERPRETATION OF THE NON-APPROPRIATION PRINCIPLE In contrast to Part II, which dealt with customary international law relating to property claims over materials that are extracted from space, this Part explores customary international law in relation to the idea of appropriation of in situ space property. Section II.A first establishes current customary international law norms that prohibit in situ space property ownership via an examination of State practice and opinio juris. Section II.B then suggests that, mirroring the first shift in customary international law norms related to extracted space resources, a nascent second shift in the interpretation of the non-appropriation principle regarding in situ space property ownership is likely on the horizon. **The prospect of high profits from the extraction of space resources will likely incentivize private companies and individuals to pressure States to recognize and protect private in situ property rights**—which, as previously discussed, is not expressly prohibited by Article II of the Outer Space Treaty. **As increasing government openness to private commercial space activities suggests, States will likely buckle under this pressure and allow private companies or private entities under State control to exercise ownership rights.** Unless the international community acts soon to clarify the meaning of the nonappropriation principle of the Outer Space Treaty, it is possible that a second organic shift in customary international law will develop and allow for private ownership of in situ space property **in further contravention of the original intent of the Treaty**. A. Current Rejection of Individual Property Rights in Space Although the internationally recognized scope of the non-appropriation principle has been pared back to allow for the ownership of space resources upon extraction, there is still currently a general acceptance in customary international law that the principle prohibits States, individuals, and private corporations from owning in situ property in space. State practice, domestic legislation, and legal scholarship all tend to support this conclusion. 1. State Practice Currently, States act in accordance with the original understanding of the non-appropriation treaty insofar as they have not endorsed individuals’ claims to in situ property in space (as distinct from endorsement of property rights to resources after extraction). One anecdote that exemplifies the United States’ unwillingness to acknowledge private individuals’ in situ property rights in outer space comes from the case Nemitz v. United States. 86 On February 12, 2001, NASA’s Near Earth Asteroid Rendezvous Shoemaker became the first spacecraft to land on the surface of an asteroid when it touched down on Eros, a twenty-one-mile long asteroid in the sun’s orbit.87 On February 16, 2001, NASA received a letter from Gregory Nemitz, in which Nemitz claimed ownership over Eros (effectively asserting in situ property rights over the asteroid) and attempted to charge NASA a twenty dollar “parking/storage fee” for NASA’s use of the asteroid.88 NASA General Counsel Edward Frankle’s eventual response, after a series of back-andforth exchanges, was to deny that Nemitz had any property rights to the asteroid as a celestial body because to acknowledge otherwise would be in contravention of Article II of the Outer Space Treaty.89 The matter was settled in court, with the presiding judge relying on similar reasoning in finding for NASA.90 Other challenges to the principle of non-appropriation of in situ space property, most notably in the Bogotá Declaration of 1976, have also been struck down.91 In the Declaration, eight equatorial nations, including Colombia, Congo, Ecuador, Indonesia, Kenya, Uganda, and Zaire (now the Democratic Republic of the Congo), with Brazil as an observer, claimed sovereignty over in situ space property in the form of geostationary orbits above their territories.92 Geostationary orbits, thirty-six thousand kilometers above Earth’s equator, are particularly valuable because at this distance a satellite orbits the Earth at a speed equal to the Earth’s rotation, allowing that satellite to remain over a fixed point on the Earth’s surface.93 However, the Bogotá Declaration’s attempted appropriation of geostationary orbits was rejected internationally as inconsistent with Article II of the Outer Space Treaty.94 Since the Bogotá Declaration, there have not been any significant challenges to the non-appropriation principle concerning appropriation of in situ space property.95 There are also no major persistent State objectors who claim the right of ownership of in situ property.96 Although customary international law has come to accept State and individual ownership of extracted space resources, current State practice supports the conclusion that appropriation of in situ space property (in the form of entire celestial bodies, as with Eros, or particular swaths of space or orbits, as in the Bogotá Declaration) remains impermissible under the non-appropriation clause of the Outer Space Treaty. 2. Opinio Juris: Domestic Legislation The United States has ensured that its commitment to the nonappropriation principle (other than the exception discussed above concerning extracted resources) is codified in domestic law. Restricting its otherwise expansive language, the SPACE Act of 2015 reads: “It is the sense of Congress that by the enactment of this Act, the United States does not thereby assert sovereignty or sovereign or exclusive rights or jurisdiction over, or the ownership of, any celestial body.”97 Other countries have also recognized this limitation to private ownership of space in customary international law. For instance, commentary to the new Luxembourg law emphasizes that [t]he scope of this law is . . . limited to space resources and does not apply to asteroids, comets and celestial bodies as such, whose appropriation is prohibited by the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, a.k.a. the 1967 Outer Space Treaty.98 In their explicit compliance with international law, other States’ outer space laws similarly reject private appropriation of space.99 3. Opinio Juris: Legal Scholarship Legal scholars also generally accept that the non-appropriation principle legally extends to private individuals as well as to States.100 Articulations of this position tend to follow one of three lines of reasoning: (1) Article II implicitly bans individual appropriation; (2) even if Article II does not itself ban individual appropriation, the de facto outcome of the explicit bar in Article II against State appropriation of space will necessarily also preclude meaningful individual ownership; or (3) regardless of the language of Article II, customary international law itself precludes private in situ appropriation of land or property in space. But cracks are emerging even in these three seemingly strong legal arguments. Several scholars assert that the language of Article II itself implicitly bans individual appropriation. The most straightforward argument in this line of reasoning is that the Treaty precludes all sovereignty and ownership in space and over its celestial bodies, regardless of whether “the claim comes from nationstates, natural persons, or juridical persons,” indicating a complete moratorium on in situ property rights in space.101 Other scholars conclude that Article II implicitly bans private appropriation as well as State appropriation because property ownership implies control over access: given that Article I guarantees universal free access to all celestial bodies, private appropriation of any celestial body cannot legally occur.102 The second approach to the private appropriation question is perhaps the most common: a recognition that Article II does not explicitly or implicitly ban individual appropriation, but that in the absence of State endorsement of these rights (which itself is prohibited), “individual property” as such has no meaning. This approach is exemplified in Fabio Tronchetti’s work. He explains: [T]here is a general consensus on the fact that both national appropriation and private property rights are denied under the Outer Space Treaty . . . . Private entities are allowed to carry out space activities but, according to Article VI of the Outer Space Treaty, they must be authorized to conduct such activities by the appropriate State of nationality. But if the State is prohibited from engaging in certain conduct, then it lacks the authority to license its nationals or other entities subject to its jurisdiction to engage in that prohibited activity.103 Other scholars make similar arguments. Virgiliu Pop, for instance, claims that “[a]ppropriation of land can exist outside the sphere of sovereignty, but its survival is dependent upon endorsement from a sovereign entity.”104 Because “the Outer Space Treaty prohibits the national appropriation of outer space and celestial bodies,” he argues “a State endorsement would be interpreted as a means of national appropriation, hence it would be unlawful.”105 Finally, approaching the question from a customary international law perspective, Deva Prasad emphasizes that both State practice and opinio juris “clearly support the fact that the non-appropriation principle is a customary international law,” noting “widespread acceptance [of the] non-appropriation principle by the States” as well as the absence of any persistent objectors.106 **Thus, even if Article II does not ban private individuals from owning land in and of itself, customary international law in the aggregate is enough to condemn private appropriation of land in space as illegal**. B. Emerging Theories of In Situ Property Rights in Space Despite the evidence that customary international law currently proscribes in situ appropriation of space property, I argue that a **nascent second shift in the interpretation of the non-appropriation principle, which would allow for such in situ ownership, is likely on the horizon**. The possibility of such a shift arises from the sheer magnitude of the economic incentives private corporations will have to urge such a recognition. And, if States seek to establish in situ ownership, they will have at their disposal emerging legal arguments pointing to cracks in the theories that the non-appropriation principle bars private ownership of in situ property. Although not yet the basis for any State action, **the increasing momentum of these theories portends a second shift in customary international law to allow for in situ ownership of space property.**

#### Clear guidelines in space law are key to collaborative space exploration [0:37]

Skibba 21 (Ramin Skibbais the space writer at Wired magazine. Previously an astrophysicist, his science writing has appeared in The Atlantic, Slate, Scientific American and Nature, among others. He is based in San Diego.), “Decolonising the cosmos”, Aeon, November 12th, 2021, <https://aeon.co/essays/we-need-a-more-egalitarian-approach-to-space-exploration> NT

Within four years, American astronauts will once again plant their feet and flags on the Moon’s dusty surface. They won’t be alone: Chinese, European and Russian space agencies have their sights on our nearest celestial body too, as do space companies such as Moon Express and Jeff Bezos’s Blue Origin. If their plans come to fruition, astronauts and their robots will claim the most valuable spots and mine the Moon for water, ice and other resources. Our lunar neighbour will never be the same again. The Moon is only a foothold, a first step on the edge of a vast landscape. Humanity stands on the brink of a new era of exploration, in which brief, intermittent and tentative space jaunts could be replaced by a multitude of cosmic activities conducted by many competing interests. Within 20 or 30 years, crewed missions could make giant leaps toward Mars – 500 times further away than the Moon – to map out the terrain and even establish colonies. Asteroids and other distant destinations will be next. With this new age dawning, we face a collective responsibility to consider the moral challenges before us, and to avoid committing the grave mistakes of the past. So far, attitudes to space that focus on power and profit appear worryingly similar to the mindset of European and American colonial powers. The billionaire Elon Musk’s company SpaceX has begun transforming the night sky – the cultural heritage of humanity – with its reflective constellations of satellites. Military space programmes and military space companies continue developing space weapons such as anti-satellite missiles, tests of which increasingly clog low-Earth orbit with debris. Meanwhile, if companies or anyone else carves pieces of the Moon as they please, it could irrevocably change its appearance to us, too. While NASA and other space agencies are more accountable and transparent than the space industry, they too lack a collective, long-term roadmap for what comes next. **Without clear guidelines for what can and cannot be done in space, the cosmos will become not a place for collaborative exploration and shared benefits but the site of conflicts, resource extraction and pollution.** If nothing changes, commercial and military interests will influence or even supplant collective ones; the quest for resources such as water, minerals and valuable space in orbit will create imperatives to despoil the commons of space and the night sky; and investment in space exploration will become a way for the powerful to escape accountability for social justice problems on Earth. A growing chorus of voices within the astronomy community is championing an alternative: a peaceful, sustainable and egalitarian vision of space, which keeps an eye on the injustices and inequalities on the ground. ‘The larger philosophical question is “Are other worlds there for human use or are they sovereign unto themselves?”’ Lucianne Walkowicz, an astronomer at the Adler Planetarium in Chicago, tells me. ‘The viewpoint of European colonisers has always been that everything exists for their use, and we’re witnessing the unsurprising outcome of centuries of that thinking.’ Walkowicz is driven by their longtime involvement in politics and activism, including opposition to the Iraq War and support for Black Lives Matter. After years of giving talks and raising awareness, Walkowicz and their colleagues recently formed the JustSpace Alliance – an organisation that advocates ‘for a more inclusive and ethical future in space, and to harness visions of tomorrow for a more just and equitable world today’, according to its mission statement. Other advocates and nonprofit organisations with aligned missions include Space Enabled, a research group at the MIT Media Lab, which promotes social and environmental sustainability in space, and applies space technology to foster justice on Earth; the Outer Space Institute, led by researchers at the University of British Columbia, which focuses on peace and sustainability in space, starting with the atmosphere; and the Secure World Foundation, a think-tank based in Broomfield, Colorado, aiming to reduce space conflicts and promote space diplomacy. With their overlapping objectives, these advocates and institutions want to spark a cultural shift that will reshape NASA’s and other space agencies’ priorities and rein in the burgeoning space industry. Can they succeed? Today, the cosmos is neither as distant nor as inscrutable as it used to be. Space agencies and space companies have designs on worlds well beyond Earth’s atmosphere. Within a couple of decades, humans could have an enduring presence on the Moon, engage in scientific studies, build outposts or colonies, mine for resources, and visit as space tourists. Mars will soon follow suit. We can expect to see more missions to asteroids too, especially if some turn out to harbour rare and lucrative platinum-group metals. Researchers at MIT, the University of Arizona and the University of Central Florida involved in current missions exploring near-Earth asteroids, Pluto and extrasolar planets have or had ties to asteroid mining companies such as Planetary Resources, Deep Space Industries and TransAstra Corporation. Past the asteroid belt, by the end of the century, we might even manage to send crewed expeditions to the moons of Jupiter and Saturn, uncovering the ocean worlds of Europa, Enceladus and Titan. But who decides where we go next, and who are ‘we’, exactly? Danielle Wood, the director of Space Enabled, argues that allowing the most powerful countries and companies to claim space property, territory or resources for themselves constitutes an imperial mindset. ‘If we just take the default view today, people will be going to these places with an extractive mindset that says: “I have the technology, money and power, and I’ll use these resources until I’m satisfied, and I will not be concerned with other countries and future generations,”’ she says. **The drive for resource extraction imperils the commons of space, including the Moon and the night sky – a process not so different from how human societies and natural ecosystems were recklessly plundered by colonial powers.** ‘When people in the space community, from Elon Musk to senators pushing for the commercialisation of space, are saying “We can mine the Moon,” it’s very reminiscent of extractivism from historical colonisation,’ Natalie Treviño, a space theoretician at the Western University in London, Ontario, tells me. Like an ancient forest that will never return, atmospheric and space resources can be quickly exhausted, and even lifeless places can be irrevocably transformed by environmental degradation. No one wants space activities to result in a Mars littered with abandoned dwellings and ice miners Thousands of active satellites orbit the Earth, but low-Earth orbit is clogged with many thousands more pieces of derelict spacecraft and debris. This belt of space-junk includes the countless bits of shrapnel and flotsam produced by anti-satellite weapon tests, such as the ones undertaken by China in 2007 and India in 2019. In the ocean, you can at least navigate a ship around the Great Pacific Garbage Patch, but it’s not so simple in the atmosphere. Even a single errant bolt hurtling in space can collide with a spacecraft and render it dysfunctional. **Yet no universal treaty exists to guarantee that no one will generate new space junk, and technologies for removing it are in their infancy.** Another problem is that lengthy space missions will often entail finding more resources along the way. Every litre of water and every piece of equipment launched from Earth takes up crucial space on a rocket, and demands extra fuel to escape our planet’s gravitational pull. Long-distance expeditions could involve wresting water from frigid lunar dirt, 3D printing rocket parts or infrastructure from materials on other worlds, or sifting for minerals on an asteroid. Still, no one wants the next few decades of space activities to result in a Moon pockmarked with excavations, or Mars littered with abandoned dwellings and ice miners. Furthermore, ice and other space materials are essentially fossil resources; they will not be replenished. Beyond space pollution or depletion, so-called ‘megaconstellations’ of many satellites coordinating together pose particular risks. SpaceX’s Starlink constellation will eventually build up to tens of thousands of spacecraft, a network that will be visible to the naked eye. While SpaceX attempted to develop a ‘DarkSat’ coating to minimise the issue, astronomers found that the tested satellite was only marginally fainter than its numerous brethren. If nothing changes, people will eventually see as many satellites as stars in the sky, according to a new paper by Aaron Boley, Samantha Lawler and colleagues. The night sky, which has looked roughly the same for people for millennia, could appear very different to our children and grandchildren. The oceans once appeared to our ancestors as a similarly vast and tantalising frontier, first broached by the boats of the Austronesian peoples and other ancient civilisations. But they were followed by the invention of military and cargo ships and navies, with empires such as the British, Spanish and Portuguese deploying fleets to control territories and trade routes. More recently, the United States, one of the leading space powers today, ruled over a more veiled empire, spanning from Latin America and the Caribbean to the Middle East and East Asia. The American empire funnelled, just as its predecessors did, minerals and other resources to the wealthy and powerful at home while leaving social inequality and environmental devastation in its wake. In his book Open Veins of Latin America (1971), the Uruguayan writer Eduardo Galeano observed: Everything, from the discovery until our times, has always been transmuted into European – or later United States – capital, and as such has accumulated on distant centres of power. Everything: the soil, its fruits and its mineral-rich depths, the people and their capacity to work and to consume, natural resources and human resources. Are things different in space in the 21st century? To answer this, we need to examine the logic and motivations of those organising space missions. The first deep-space travellers will need water to survive; they’ll need to construct shelters from space radiation; they’ll need fuel to return home. But the first European colonisers also claimed they were only looking for resources for survival, or advancing humanity’s shared interests, when they voyaged overseas or into Indigenous territories, Treviño points out. ‘There’s a lot of utopian thinking with space exploration,’ she says. Space contractors and military contractors are often one and the same The very terms we use when describing space exploration deserve more attention. **While NASA and other organisations years ago replaced ‘manned’ with ‘crewed’ or ‘human’ to describe space missions, we still frequently use other problematic terms, such as ‘settlers’, ‘colonies’ and ‘frontier’, which all have colonialist connotations.** We don’t yet have an alternative language for our new travels in space, Treviño says – at least outside of Afrofuturism and Indigenous science fiction, whose authors often emphasise sharing, ancestral knowledge and diverse, welcoming, resilient communities. As companies and space agencies prepare to colonise the Moon during the 2020s, Wood says, there’s a risk they’ll follow the same patterns: extracting and taking raw materials as quickly as possible. ‘If we don’t pause and disrupt that, I expect that in space, especially if you have large, Amazon-style companies, they would behave in the same way, because why wouldn’t they?’ she asks. Militaries, too, have always played major roles in space. The technologies required to build rockets are similar to those of missiles that deploy warheads; the same goes for space telescopes and reconnaissance satellites. Space contractors and military contractors are often one and the same, and there’s a revolving door for scientists between space research and companies such as Northrop Grumman, which plays a leading role developing technologies for the James Webb Space Telescope that’s aiming to launch in December. The new US Space Force has broad political support, and US presidential administrations of both parties frequently refer to space as a war-fighting domain. The Barack Obama administration’s Space Act of 2015 declared that the US would not claim any space territory, but it also enshrined the principle that space companies could own, use and sell any resources they obtain. Space lawyers continue to debate whether this violates the spirit of the Outer Space Treaty of 1967. Representatives of a handful of countries negotiated the more restrictive Moon Agreement in 1979, which states that natural resources in space ‘are the common heritage of mankind’. But space powers such as the US and the USSR did not become signatories of that treaty, so it carries little weight. **Fifty years ago, these competing views of space, prioritising science and shared benefits or enabling commercial and military goals, had already begun to surface** As humanity ventures beyond our atmosphere, two clear differences emerge compared with empires of the past. ‘There are no Indigenous populations to exploit, and no one’s allowed to annex territory,’ says Christopher Johnson, a space law advisor at the Secure World Foundation. But if we want to allow long-distance space exploration, it will almost certainly involve supplementing water and fuel supplies with limited quantities that astronauts can find in space. **This means we need a consensus about who has access and which activities are permitted.**

#### Colonial powers like the US and China exploit legal ambiguity about private appropriation to achieve space dominance [0:43]

* AT Space Mining DA – turns the private innovation link because it proves dominant purpose of private space mining is to enhance national soft power and acquire space resources for national use

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Envisaging appropriation concerns that might arise from the future extraction of space assets by spacefaring nations, Article II of the UN OST declared that: “Outer space is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means” (UN, 1967). **The emphasis on claims of national sovereignty were intimately tied to the Cold War context at the time, where space activities were under the exclusive monopoly of governmental agencies and initiated for goals of military dominance or national prestige** (Sachdeva, 2017: 210). However, the privatisation of the space industry that has occurred since the 1980s has meant that the legislation leaves an **enormous amount of legal ambiguity and interpretation** regarding the regulation of private resource mining in space. As Shaer (2016) demonstrates, the Article II provision fails to address either the exploitation of space for financial gain or the property claims of commercial enterprises (Shaer, 2016: 47). Nevertheless, Article VI of the UN OST asserts that: “States shall be responsible for national space activities whether carried out by governmental or non-governmental entities” (UN, 1967; own emphasis). Some scholars have suggested that this clause significantly restrains the activities of private space corporations by incentivising states to regulate their domestic organisations for fear of liability concerns (Abeyratne, 1998: 168). However, the US government recently enacted a piece of legislation which exploited this clause, in order to circumvent its own restrictions and strengthen US economic influence in space. The passage of the 2015 SPACE Act enabled US citizens to privately “possess, own, transport, use, and sell the resources” they obtain in outer space, whilst making careful consideration to deny national sovereign claims over such materials (Leon, 2018: 500). Yet, regardless of whether it is an American private company or public venture, **the US is still satisfying its geopolitical interests; by exclusively siphoning off extra-terrestrial resources for American gain, the nation’s soft power is thereby extended at the expense of spacefaring adversaries** such as China (Basu & Kurlekar, 2016: 65). Indeed NewSpace actors cleverly played on these strategic concerns prior to the bill’s passage, with billionaire space entrepreneur Robert Bigelow asserting that the biggest danger wasn’t private enterprises on the Moon, but that “America is asleep and does nothing, while China comes along… surveying and laying claim [to the Moon]” (Klinger, 2017: 222). **The US government’s support for private space companies is also likely to lead to the reinforcement of Earth-bound wealth inequalities in space. Many NewSpace actors frame their long-term ambitions in space with strong anthropogenic undertones, by offering the salvation of the human race from impending extinction through off-world colonial developments** (Kearnes & Dooren: 2017: 182). Yet, this type of discourse disguises the highly exclusive nature of these missions. Whilst they seem to suggest that there is a stake for ordinary citizens in the vast space frontier, the reality is that these self-described space pioneers are a member of a narrow ‘cosmic elite’ – “founders of Amazon.com, Microsoft, Pay Pal… and a smattering of games designers and hotel magnates” (Parker, 2009: 91). Indeed, private space enterprises have themselves suggested that they have no obligation to share mineral resources extracted in space with the global community (Klinger, 2017: 208). This is reflected in the speeches of individuals such as Nathan Ingraham, a senior editor at the tech site EngadAsteroid mining, who claimed that asteroid mining was “how [America is] going to move into space and develop the next Vegas Strip” (Shaer, 2016: 50). Such comments highlight a form of what Beery (2016) defines as ‘scalar politics’. **In similar ways to the ‘scaling’ of unequal international relations that has constituted our relationship with outer space under the guise of the ‘global commons’ (Beery, 2016: 99), private companies – through their anthropogenic discourse – are scaling existing Earth-bound wealth inequalities and social relations into space by siphoning off extra-terrestrial resources.** **By constructing their endeavours in ways that appeal to the common good, NewSpace actors are therefore concealing the reality of how commercial resource extraction serves the exclusive interests of their private shareholders at the expense of the vast majority of the global population.** Private Space Corporations and Orbital Surveillance: Dual-Use Satellite Technology Starting in 2013, the leaking of classified information by former US National Security Agency employee Edward Snowden revealed the extent to which American intelligence agencies were collaborating with the private sector in mass surveillance operations (Bauman et al., 2014). In what has been described as the ‘securitisation’ of society, contemporary states have shifted from “politics to policing and from governing to managing” the public, which has often occurred without the consent or knowledge of their citizens (Petit, 2020: 31). While such practices have conventionally been Earth-bound in nature, the space domain provides an entirely radical and strategically beneficial perspective for conducting surveillance through satellites. **Although many commercial US satellites provide an array of environmental and internet capabilities on Earth, they are also absolutely essential from a national security perspective of maintaining US space superiority** (Chatters IV & Crothers, 2009: 257). This is known as the “dual-use” nature of satellites, where civilian and military purposes are blurred into a single observational system and can be adapted for different functions when necessary (Lubojemski, 2019: 128-129). Dual-use satellite technology has been vital for the US military in offering a tactical edge on the battlefield, with 80% of its satellite communications needs being derived from commercial satellites (Hampson, 2017: 7). The reliance on these networks forms a component of the broader US military doctrine of ‘space control’, part of which aims to secure the transmission of commercial satellite data that will prevent the exposure of sensitive military tactics (Peña & Hudgins, 2002). Whilst the OST does not contain any clauses specifying the rules or regulations of data monitoring in space, any form of malicious or illegal surveillance can be seen to violate Article XI, which requires states to: “Inform the Secretary-General of the United Nations as well as to the public and international scientific community, to the greatest extent feasible and practical, of the nature, conduct, locations and results of [space] activities” (UN, 1967). Yet, legal scholars have claimed that this clause is significantly weak, since states can withhold vital information about their space activities on the basis that the dissemination of such information is neither ‘feasible’ nor ‘practical’ (Chatterjee, 2014: 31-32). The absence of any clear UN guidelines has also meant that American satellite corporations are increasingly capable of refusing to state their intentions, or who their customers are – with the US government being one of these elusive clients. The 1994 Presidential Decision Decree-23 authorised the US government to require firms to either limit or stop sales of certain satellite images through a process known as ‘shutter control’. It is controversial because it designates the US executive branch the ability to limit publicly accessible information in certain circumstances, possibly violating First Amendment rights (Livingston & Robinson, 2003: 12). During the 2001 War in Afghanistan, the US government bought the rights to all orbital images taken over the theatre of operations by GeoEye’s Ikonos satellite on the grounds of ‘national security’ (The Guardian, 2001). However, media groups accused the government deal of preventing them from informing the public about matters of critical importance that in no way implicated national security, including the independent verification of government claims concerning damage to civilian structures and possible casualties (Livingston & Robinson, 2003: 12). These measures therefore undermined the OST’s Article XI clause by concealing important information to the public when it was feasibly possible, through the guise of national security discourse. At the same time, it allowed the US government to manipulate media coverage of areas it deems to be essential for conditioning public war support in Afghanistan, whilst simultaneously strengthening its space control doctrine. In many ways this strategy can also be seen as facilitating a ‘global panoptical’ intelligence network (Backer, 2008). **By extending the private-public hybrid structure of surveillance into outer space, businesses and governments have the opportunity to observe millions of global citizens unknowingly at any one point – and with it – immense amounts of data.** Given that GeoEye received nearly two million dollars in contract-related fees from the US government for its Ikonos pictures (The New York Times, 2001), this could incentivise the commercial satellite industry to continue to restrict data that might serve the interests of citizens globally. As such, satellite imaging may turn into a form of orbital data-siphoning where companies conducting observations in space could sell off their data to the highest bidder, with a concerning disregard for privacy rights. Indeed, the revelations surrounding Cambridge Analytica and Facebook have underscored the extent to which private entities are monetising off the sensitive information of their consumers unknowingly (Balkin, 2018: 2050-2051).

#### Privatization escalates space conflict – ASAT strikes, space debris, and military confrontations cascade from space colonization [0:21]

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Discussion & Research Implications Conflict in the 21st Century If outer space can indeed be analyzed and predicted by realism, then **the 21st century will be characterized by intense competition to obtain space power** and/or inhibit other states from achieve it. **Conflict in space will be exacerbated by public and private ventures that international law could not conceive when created,** **such as space privatization and colonization**. Prominent scholars in the fields of international relations and astropolitics recognize the possibilities of conflict. Laura Grego, Senior Scientist at the Global Security Program at the Union of Concerned Scientists, writes:52 In recent decades, satellites have become increasingly important in the economic, civil, and military spheres. At the same time, space has become more crowded with satellites and the debris from their use, and many more states have become spacefaring. However, the legal and normative regime has not kept pace with these changes. Recent trends and events – including demonstrations of antisatellites (ASAT) capability, a **collision between satellites, and a dramatic increase in dangerous space debris** – make clear that the space environment needs more protection, that satellites face growing risks, and that space activities may be a potential source of mistrust and tension between countries. **While voluntary confidence-building and transparency measures can help solve some of these issues**, more substantive engagement is required to keep space safe and secure into the future. Moreover, **the US space program may be directing the world to confrontations in space**. The 2018 Defense authorization bill requires the Department of Defense (DoD) to establish a new Space Corps and a new Space Command by January 2019.53 Furthermore, General John E. Hyten, Commander, Air Force Space Command, stated space is vital and essential to joint warfare.54 Therefore, he contended implementing a new Space Mission Force that “move[s] beyond the status quo and adopt[s] new tactics, techniques and procedures (TTPs)” is necessary so that the US may execute “swift and deliberate action” when deterrence fails.55 The amount of factual knowledge available on parties involved, as well as **technology being developed increase uncertainty and fear among international actors**. Technology The technologies needed for human deep space travel and for humans to live on extraterrestrial bodies are designed to overcome human’s greatest technical drawback: humans evolved to live only on Earth. Deep space refers to distances at and/or past the moon.56 Many obstacles such as radiation poisoning and osteoporosis may find a technological solution in the forms of human enhancement. The issues that arise from developing and employing such technologies may affect institutions and public policy on Earth**. The main concern with human enhancement is that its use may not be just, it provides a new dynamic for equity and ethical dilemmas**: “’How will technology be developed, by whom and for whom?’ Will nanotechnology reach those in desperate need”.57 Due to the overly market-oriented and laissez-faire way in which technological development is carried out in the US, “there is a great amount of hubris in regard to how scientific and technological achievements are used in society”.58 At the same time, the technologies needed for are dual use – “can be used for both civilian and military purposes**”** – which allows both the US military and other domestic and foreign institutions to weaponized and militarize benign technologies**,** Bill Joy’s fear.59 Developing technologies such as human enhancement may expedite the goals of the new space era but the development and commercial adoption of the technologies needed raise numerous ethical and social issues, including, but not limited to: (**1) defining the distinction between therapy and enhancement, (2) concerns about “playing god”, (3) concerns about the return to eugenics, (4) concerns about the commodification of human life, and (5) issues around social justice and disparities in access to new technologies**.60 With the amount of public and private investment for human deep space travel, many disruptive and promising technologies will be developed. Combined with commercialization, scarcity, and absence and lack of public policy, those technologies may enable the future’s many critics of the new space era fear. At the very least, **standards for social justice, equity, and equality will be challenged**.

#### Space colonization makes nuclear space war inevitable given current geopolitical tensions [0:22]

Pethokoukis and Deudney 21 (James Pethokoukis Senior Fellow; Editor, AEIdeas Blog; and DeWitt Wallace Chair. Daniel H. Deudney teaches political science, international relations and political theory at Johns Hopkins University. He holds a BA in political science and philosophy from Yale University, a MPA in science, technology, and public policy from George Washington University, and a PhD in political science from Princeton University.), “Space expansionism, geopolitics, and the future of humanity: My long-read Q&A with Daniel Deudney”, AEI Ideas, 6-19-21, <https://www.aei.org/economics/space-expansionism-geopolitics-and-the-future-of-humanity-my-long-read-qa-with-daniel-deudney/> NT

Yeah. I think that the directions that we’re headed in are largely disaster-prone. And of course, one of the directions that we’re going in that never gets talked about is continuing to modernize, replace, and improve the nuclear weapon delivery system. That is, as I said earlier, this major space program that we don’t acknowledge as such. And the United States has, during the Trump era, declared the objective of dominating space. And this is something that has long been talked about by various military visionaries. But this was an important threshold that we have crossed. **The SpaceX** Corporation, as I’m sure everyone listening to this podcast knows, **has lowered significantly the cost of accessing near-Earth orbit** — by a kind of order of magnitude, perhaps. And they have these plans to build even larger rockets that they make claims about even further reducing the cost of accessing near-Earth orbit. And this is widely hailed as a great advance. I look at this, and I say, “Well, it’s going to lower the cost of doing stuff in space.” And the question then is: Which of this stuff is going to get done? And of course, **immediately the military is interested**. The idea that we can dominate space is going to depend upon having the capacity to put significant mass into orbital space. So I think that we have been misperceiving the overall character of this environment. **We’ve been misrepresenting the actual effects to date**. And when we get rid of this “Oh it’s going to all be so wonderful” mentality and critically examine what has happened, what is happening, and what is likely to happen, we have a very different picture. And I want to emphasize that I am not a Luddite. I am not opposed to technology generally, but humanity over the course of the 20th century has started to develop technologies that are extremely potent, double-edged swords. And the question that we have to confront is whether we have the ability to steer the use of these technologies so that we get the benefits without getting the downsides. And our record so far is not very promising. But we haven’t used nuclear weapons. In fact, the United States reached agreements with the Soviet Union to reduce nuclear weapons. And you could say we’ve even over-corrected because our fear of radiation has led us to abandon nuclear power. So hasn’t the record shown that we have been able to handle these weapons and that, if anything, we’ve been overly cautious when it comes to dealing with new technologies that could have a great benefit? Well, that would be a long conversation. And with regard to nuclear weapons, we have a fundamental epistemological problem here: What is the probability of nuclear war? During the Cuban Missile Crisis, John Kennedy said he thought it was between **one-in-three and one-in-two**. And knowing what we now know about the Cuban Missile Crisis, **it was clearly more likely than that**. So do we look at the Cuban Missile Crisis and say, “Hey, no problem here”? Or do we look at it and say, “We were really lucky”? There’s a fundamental disagreement about nuclear weapons that we really can’t resolve by appealing to the empirical evidence. And that fact alone should be very sobering to us. But I think that if you looked at this without any sort of theoretical presumptions and said, “Is it really a good idea to have thousands of high-yield thermonuclear weapons prepared for nearly instant use?” That strikes me as a bad idea. And, you know, some people say, “Well, that’s what saves us.” But look at this as a case study: The only way we can deal with nuclear weapons is by building large numbers of them and have them posed for immediate use? That strikes me as a very limited adjustment. So do you think that ultimately we’re going to have to get lucky again? There seems to be a lot more interest in space. And that interest is obviously among countries who have major disagreements and **who view space as both an economic opportunity and as a military necessity**. **So it seems like the scenario going forward is a multipolar space race with an uncertain conclusion.** That’s right. That’s clearly where we’re headed now.

### Plan Text [0:07]

#### Recognizing that the appropriation of outer space by private entities is unjust, states ought to extend the non-appropriation principle of the Outer Space Treaty of 1967 to private entities.

## Solvency [1:48]

#### Treaties are normal means for establishing necessary multilateral space iLAW [0:19]

* Space is historically unregulated because no country has a jurisdictional claim in space
* The only way states have made large multilateral legislation is through treaties to standardized norms
* Countries view multilateral norms as necessary to prevent space conflict

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The Five UN Space Treaties **As previously mentioned, a series of treaties adopted by the U.N. General Assembly (UNGA) form the foundation of the global space governance system**. The first and most significant of these treaties is the “Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space including the Moon and Other Celestial Bodies,” more commonly known as the Outer Space Treaty or OST for short (1967). The Outer Space Treaty is considered the most comprehensive space treaty and provides the basic framework for international space law, namely: the exploration and use of outer space for peaceful purposes by all States for the benefit of mankind (Art. I); the outlaw of national appropriation or claims of sovereignty of outer space or celestial objects (Art. II); a ban on the placement of weapons of mass destruction in orbit or on celestial bodies (Art. IV); that astronauts should be regarded as the envoys of mankind (Art. V); and that States are required to supervise the activities of their national entities (Art. VI). Although the Outer Space Treaty is the cornerstone of international space regulation (with 111 ratifications and 23 signatories), gaps in governance were evident immediately after its adoption. The primary weakness of the OST is that it only addresses the non-placement of weapons of mass destruction and not conventional weapons in space. While placing a weapon in space would be deemed an act of war universally, the OST’s lack of scope is particularly important in the modern-day context where ground-based weapons such as anti-satellite (ASAT) weapons exist to target space assets. The OST’s vague language about how states manage their space resources raises additional issues, as States have taken it upon themselves to define terms based on their own national priorities and interests. Besides competing national priorities and interests in space, many definitions of terms were written before space technologies advanced. Definitions of “space weapon,” “defensive” or “peaceful” use of outer space, and “astronaut” have all evolved and changed since the original treaty was written. To supplement these gaps, four additional treaties were created, but were largely unsuccessful in garnering enough support and mitigating the deficiencies of their predecessors. Expanding on Articles 5 and 8 of the OST, the second foundational U.N. space treaty “The Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space'', termed the Rescue Agreement (1968), states that States must take measures to rescue and assist astronauts in the event of an accident, distress, or emergency landing, and return them to their launching state in addition to assisting launching states with recovering space objects that return to the Earth outside the native state of launch. Even though the Rescue Agreement is clear on the status of astronauts as “envoys of mankind,” an opportunity for other States to test the Agreement’s efficacy—or assist an astronaut in distress has not yet occurred to help when one state’s astronauts or cosmonauts were in distress. The third foundational U.N. space treaty, “Convention on International Liability for Damage Caused by Space Objects,” termed the Liability Convention (1972), outlines the liability of Launching States for damage caused by their space objects both on the Earth or in space as well as procedures for the settlement of claims for damages endured. This means that states remain responsible for any space assets launched from their territory, which infers that the same states are liable for any damages should there be an accident. According to the Liability Convention, claims against damage or destruction are brought by a state against a state, irrespective of who caused the incident, whether it was a commercial actor or a State space agency. According to most national legal instruments, an individual or an industry could initiate a lawsuit against another individual or industry, but regarding international space law, the Liability Convention determined that states are ultimately responsible even if an incident is caused by a private actor. The Liability Convention has only been invoked one time, in 1978, when the USSR’s Cosmos 954 satellite accidentally reentered Earth’s atmosphere, scattering around 50 kg of radioactive uranium-235 over northern Canada. Although this area was sparsely populated, several residents were accidentally exposed to radiation before a major recovery campaign succeeded in sweeping a total area of 124,000 square kilometers over the course of almost one year (Karacalıoğlu, 2014). Since the 1950s, debris have been accruing in space. NASA estimates there are roughly 22,000 objects larger than 10cm in diameter in near-Earth orbit. The Liability Convention outlines the liability of Launching States for damage caused by their space objects both on the Earth or in space. Credit: NASA/JSC/Orbital Debris Program Office The fourth treaty, “Convention on Registration of Objects Launched into Outer Space,” termed the Registration Convention (1976), has a straightforward objective of registering space objects. Building on Article VIII of the OST which deals with the registration and jurisdictional aspects of launched outer space objects, the Registration Convention states that launching States must maintain a registry of their space objects and provide the U.N. with information on the objects they launch into outer space. This treaty is important from the standpoint of both the Rescue Agreement and the Liability Convention in that without the registration of space objects, no State could ever be held accountable should an incident occur. Its purpose, therefore, is to identify which State’s object it was, as well as to fix liability and compensation on states for damage or destruction. The fifth treaty, “The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies,” termed the Moon Treaty (1984), has received the least support by Member nations for its reaffirmation and elaboration of Outer Space Treaty provisions in the context of appropriating and exploring the Moon and exploiting its resources. The Moon Treaty states that the Moon shall be used by all states “exclusively for peaceful purposes,” and that “(A)ny threat or use of force or any other hostile act or threat of hostile act on the moon is prohibited.” Additionally, it prohibits the placement or use of weapons of mass destruction (WMD) on the Moon, as well as the “establishment of military bases, installations, and fortifications, the testing of any type of weapons and the conduct of military maneuvers” (U.N. Office for Disarmament Affairs, 1979).

#### Applying International Humanitarian Law (IHL) from the OST is key to resolving space conflict [0:25]

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Does IHL apply to warfare in space? There has been much debate as to whether the preamble and Article IV of the Outer Space Treaty, which both emphasize the use of outer space for “peaceful purposes,” prohibit all military operations in space. They do not, nor is there any such analogous customary international law prohibition. Indeed, it is now generally accepted that peaceful does not mean “non-military” but simply equates to “non-aggressive.” This fact is demonstrated by the extensive State practice of using space for military purposes. However, even if such a prohibition existed, it would have no bearing on the applicability of IHL to operations into, through, or from outer space. This is because IHL is never dependent on the lawfulness of the decision to employ force. Rather, its **applicability is a question of fact** — specifically, **whether the situation at hand amounts to an international armed conflict (IAC) or non-international armed conflict (NIAC)**. If an IAC or NIAC has begun, **all operations with a nexus to the conflict are subject to IHL’s obligations, prohibitions, and restrictions**. **This is clear from Article III of the Outer Space Treaty,** generally deemed to reflect customary law, which provides that States Party to the instrument must use outer space “in accordance with international law.” There is no cogent reason to suggest that the reference to international law was meant to exclude IHL. Further, the International Court of Justice (ICJ), in its 1986 Nuclear Weapons Advisory Opinion, confirmed that IHL applies to “all forms of warfare and to all kinds of weapons, those of the past, those of the present and those of the future.” The ICJ did so without proffering any distinction based on the domain of warfare in which hostilities occur or, indeed, the means or methods utilized therein. The position of the United States expressed in the Department of Defense Law of War Manual is in accord with the ICJ in this regard: [L]aw of war treaties and the customary law of war are understood to regulate the conduct of hostilities, regardless of where they are conducted, which would include the conduct of hostilities in outer space. In this way, the application of the law of war to activities in outer space is the same as its application to activities in other environments, such as the land, sea, air, or cyber domains. The International Committee of the Red Cross (ICRC) also takes this position. In its 2019 Challenges Report, the ICRC pointed to the 1949 Geneva Conventions’ reference to “any … armed conflict” in Common Article 2 to support its position that IHL would apply directly to armed conflicts in space. The ICRC further noted that while the 1977 Additional Protocol I (AP I) to the Geneva Conventions contains a geographic applicability limitation in Article 49(3), the rules therein specifically apply to any warfare affecting civilians on land. Accordingly, the ICRC rightly concludes that “IHL applies to any military operations conducted as part of an armed conflict, including those occurring in outer space.” Although the applicability of IHL to space operations carried out during an armed conflict triggered by terrestrial military force is indisputable, whether space operations can alone initiate a state of armed conflict is a more challenging question. This challenge is most pronounced with respect to NIACs. Indeed, for hostilities in space to rise to the level of a NIAC, a threshold of “intensity” must be met. By contrast, an IAC occurs whenever “hostilities” occur between the armed forces (or other organs) of States. As with cyber operations, this begs questions of both intensity and nature. The ICRC has long maintained that there is no intensity requirement for hostilities to qualify as an IAC, although that assertion is not universally accepted. Clearly, a space operation causing significant damage would qualify as hostilities, as in the case of a kinetic anti-satellite (ASAT) attack. Yet, it is uncertain whether incidents involving slight or no physical damage would ever initiate an IAC. In this regard, consider, for instance, a satellite rendezvous and proximity operation (RPO) that blinds a satellite used for missile early warning by positioning itself so as to obstruct sensors. Other examples might include a cyber operation that permanently or temporarily disrupts a key military communication satellite’s functionality, or the use of a space object to nudge a non-maneuverable navigational satellite out of its intended orbit. Whether and when States would treat such operations as hostilities in the IHL context remains to be seen. Of course, even if it did not cause damage directly, if the reasonably foreseeable consequence of a military space operation is physical harm, as in the case of interfering with a navigational satellite in a manner that results in maritime collisions or aircraft crashes, a putative IAC would be underway. The Term “Attack” in the Space Context In IHL, the concept of “attacks” is the fulcrum upon which many rules rest. For instance, civilian objects may not be “attacked,” all “attacks” must comply with the rule of proportionality, and an attacker must take precautions “in attack” to minimize harm to civilians and civilian objects. The applicability of these and many other IHL rules depends on the space operation in question qualifying as an “attack,” defined in Article 49(1) of AP I as an “act[] of violence against the adversary, whether in offense or in defence.” Undoubtedly, any military space operation that causes physical damage, whether in space or on earth, amounts to an attack where that damage surpasses a de minimis threshold. Nevertheless, difficult questions remain regarding where to draw the line between space operations qualifying as an attack and those that do not. It is instructive that the uncertainty pervading the issue in the cyber context applies mutandis mutatis to space operations. For instance, a general consensus exists that permanent interference with functionality qualifies as damage. This would be the case, for example, if a cyber operation permanently disabled a military satellite, even if no physical harm resulted to the satellite and it remained in orbit. Similarly, it is reasonable to conclude that taking full control of a satellite on a permanent basis, a technique that was demonstrated decades ago, would equate to a permanent loss of functionality and therefore be an attack. But beyond such relatively clear-cut cases, many legally ambiguous scenarios loom. For example, it is unclear whether temporarily jamming a civilian satellite’s downlink or uplink such that it could not perform its intended function would be an attack in violation of the rule against attacking civilian objects. Also unsettled is the issue of whether self-destruction of one’s own satellite (as China did in a 2007 ASAT test) would, during an armed conflict, amount to an attack. Though the position is far from settled, our view is that, standing alone, it would not. However, if such a self-destruction operation was designed to generate orbital debris that would likely result in catastrophic damage to enemy satellites, the operation would qualify as an attack to which IHL rules would apply. In such a scenario the damaged satellites would be the “object of attack” in IHL terms. Or consider regional denial of the GPS signal by the United States over enemy territory. Would denying GPS service, which is provided by a U.S. Department of Defense satellite constellation, be an attack if damage or injury resulted, as might be the case if a civilian emergency response system relies on GPS data? If not an attack as a matter of law, because the United States provides the service, the rules regarding indiscriminate attack and proportionality presumably would be inapplicable. If so, what rules would apply? As with cyber, the definition of attack in the space context will prove a determinative factor vis-à-vis IHL’s effectiveness in governing space conflict. The Principle of Distinction and Military Space Operations **At the core of IHL lies the principle of distinction**, according to which parties to an armed conflict must distinguish between combatants (fighters) and civilians, and between military objectives and civilian objects, when engaged in hostilities. Labelled a “cardinal principle” of IHL by the ICJ and given expression in treaty form through Articles 48, 51 and 52 of AP I, the principle of distinction undoubtedly reflects customary international law. Article 52(2) of AP I, which also echoes customary international law, further clarifies that objects may only be attacked if, “by their nature, location, purpose or use [they] make an effective contribution to military action and [their] total or partial destruction, capture or neutralization, in the circumstances ruling at the time, offers a definite military advantage” to the attacker. The ICRC’s official Commentary on the Additional Protocols notes that the text of Article 52(2) constitutes a valuable guide but also readily admits that its text will not always be easy to interpret for those who, in practice, have to decide on whether to proceed with an attack (para. 2016). This is a perceptive statement generally, but is especially apposite with respect to space warfare. **The common practice of using civilian launch systems to place military satellites into orbit offers a fairly straightforward case study of qualification as a military objective** under Article 52(2) and customary law. To illustrate, a United Launch Alliance Delta IV (i.e., civilian) rocket carried the Wideband Global SATCOM satellite into space for the U.S. Air Force in 2019. This satellite forms part of the U.S. military’s global satellite communications backbone, which provides high-capacity communications for U.S. military personnel. During an armed conflict, both the military satellite and the civilian launch system would clearly be targetable, the former because it is a military objective by nature, the latter due to its use by the armed forces. Yet, other cases are less straightforward. Of significance in this regard are “hosted payloads.” Technology carried aboard a satellite can be classified as either part of the “bus” or the “payload.” The bus refers to the metal or composite frame on which various subsystems are mounted. Typical subsystems include an attitude control system (to keep the satellite pointed in the right direction), power source (e.g., solar panels), and on-board computers. Satellites also carry mission-specific equipment to perform specialized tasks (payloads). For example, where a satellite’s mission is to take detailed images of the Earth’s surface, the satellite’s payload will likely be an optical camera or infrared sensor. A hosted payload “allows users, such as military forces, to add transponders or other equipment to a commercial satellite already scheduled for launch.” Such hosted payloads have missions that are distinct from those of the primary payloads aboard the bus. By way of example, in 2011 the U.S. Air Force launched the Commercially Hosted InfraRed Payload (CHIRP) as a hosted payload on a communications satellite owned by a commercial satellite operator. CHIRP was designed to test a new infrared sensor to be used by future missile warning systems. Despite some practical drawbacks, the use of hosted payloads is likely to continue and possibly proliferate. Indeed, in 2018, the U.S. Government Accountability Office recommended the use of commercial satellites to host government sensors or communications packages as one way the U.S. Department of Defense (DOD) can achieve on-orbit capability faster and more affordably. The initial IHL challenge posed by hosted payloads is identifying the “object” that qualifies as a military objective. One approach is to treat the satellite and all payloads thereon as a single object. This approach would mean that if any one payload makes an effective contribution to enemy military action, the entire satellite would become a military objective. This has the attractiveness of simplicity but, in certain circumstances, could have negative consequences for civilians because the rules on proportionality and precautions in attack would not apply to damage to the non-military aspects of the satellite. For some, however, the principle of distinction requires treating any civilian payload as a civilian object. This approach would require the attacking force to try and minimize harm to such a payload. Any damage to a civilian payload would also have to be considered as “collateral damage” when applying the rule of proportionality. In some circumstances, harm befalling civilian payloads might be “excessive,” thereby barring attack on the satellite altogether despite the presence of the hosted military payload. It bears mentioning that the satellite bus, however, would be a dual-use object relied on by the military payload (e.g., as a source of energy) and thus be targetable as a military objective; harm to the bus would not, therefore, influence the proportionality analysis. The experts who authored Tallinn Manual 2.0 on cyber operations occupy a middle ground in this regard. They opined that an attacker is required to consider any expected harm to “clearly distinguishable civilian components of the military objective” (Rule 101, para. 3). **If the civilian components are not clearly distinguishable, the entire object qualifies as a dual-use military objective.** Yet, in the space context, even this approach poses practical problems. For example, given that payloads aboard a bus rely on the bus to operate, for instance by providing power, and the bus clearly qualifies as a dual-use military objective, can such civilian payloads be unambiguously said to be distinguishable? As is apparent, the textual simplicity of Article 52(2) of AP I masks particular complexity in the space context. The law of neutrality exacerbates issues of space targeting. Consider the two satellites being built for Space Norway, each equipped with payloads for Inmarsat (a commercial entity), the Norwegian Ministry of Defense, and the U.S. Air Force. The U.S. Air Force payload will enable Extremely High Frequency (EHF) military communications. If the U.S. is party to a future IAC in which Norway is not a co-belligerent (i.e., fighting on the same side), could the satellites, which will be registered in Norway, be attacked by the forces fighting the United States? This scenario may further influence how States choose to deal with the hosted payload question. The practice of leasing or sharing bandwidth, exemplified by the Australian Defence Forces’ use of U.K. or U.S. military satellite communication systems, raises discrete but related issues. Clearly, the growing commercialization of space activities, reliance on commercial space systems by military forces, and dual-use nature of many space technologies will provide myriad challenges in identifying military objectives in order to apply the principle of distinction during armed conflict in outer space.

#### Treaties developing detailed principles let states facilitate increased IHL compliance. [0:20]

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The most consistent theme that emerges from these chapters is that ensuring respect for IHL is not a discrete requirement of the GCs and APs. It cannot be neatly compartmentalised and defined in isolation. To ensure respect, as an exter- nally facing obligation, a State needs to recognise that all actions taken to respect IHL within its own jurisdiction have a direct impact on its capacity and ability to ensure respect as a third State. Indeed, it is very difficult for a third State to ensure respect for IHL by other States or external actors, if that State does not undertake the measures recognised as essential within its own jurisdiction to respect IHL. A State’s individual actions to fully adopt and implement all aspects of IHL internally are critical for a State to enable it to look beyond its own borders and have the influence required to encourage other States to respect the law. For example, Pratt notes ‘[i]ncreasingly, legislative decisions which may at first appear to be internally focused necessarily acquire an external aspect’ (Chapter 4, p. 46). Lloydd points out, ‘[f]oreign fighting straddles both the internal and external components of the obligation’ (Chapter 15, p. 234). Ball and Zegenhagen conclude that ‘recommit- ting and reinforcing the importance of IHL within counter-terrorism legislation ... will serve to realise obligations of CA1 to both respect and ensure respect for humanitarian imperatives’ (Chapter 12, p. 194–195). Massingham discusses how when the internal military doctrine of third States reflects compliance with IHL they ‘can use their capacity and influence with other States – including in part- nered warfare operations – to improve IHL compliance through exporting military training and military manuals that are IHL compliant’ (Chapter 8, p. 124). The need to have “one’s own house in order” is particularly evident when looking at the aspects of IHL that pertain to interoperability – for example, detention opera- tions discussed by Thynne (Chapter 11), the coalition operations mentioned by Ste- phens (Chapter 7) and peacekeeping operations within Smith’s chapter (Chapter 10). Stephens, for example, points out that ‘the inevitable requirement for achieving maximum consistency in legal interpretations is one manifestation of ensuring respect that is achieved in the context of coalition operations’ (Chapter 7, p. 112–113). This clearly requires respect for IHL by the State itself such that their contribution to the coalition interpretations is itself compliant with IHL. As Massingham (Chapter 8) and Nasu (Chapter 9) conclude, with respect to both conventional and emerging technologies (in the case of Nasu specifically artificial intelligence) there is a need to meet the respect obligations, such as in relation to import and export control of weapons and weapons-related technology in order to be an influence over others. The diplomatic repercussions of failing to live up to the internal obligations to respect IHL, would ensure that any efforts to encourage compliance by other States would be disregarded. Smith points out that the implementation of IHL and international human rights law (IHRL) policies within UN Peacekeeping enables the UN to seek IHL compliant behaviour from troop contributing countries within their own jur- isdiction (expressly in relation to the prohibition against the recruitment of child sol- diers) (Chapter 10, p. 157–158). The capacity of a State to adopt and domestically recognise all the relevant aspects of the GCs and APs is important to enable it to be taken seriously in any outward-facing action. However, this does not preclude a State from operating in both areas simulta- neously. Whilst disseminating to groups identified within the State (armed forces, par- liamentarians and decision-makers, the population generally) and enacting and implementing the law through appropriate policy choices, a State is also able to encou- rage other States to respect the law. Demonstrating an ongoing capacity to act positively to support IHL domestically encourages other States to do the same and creates a ‘mutually reinforcing’ relationship whereby respecting IHL results in ensuring respect. Building respect through legal and normative frameworks Building an environment conducive to respect for IHL is the second category of activities States can and are taking to ensure respect. This applies to acceptance of and compliance with legally binding obligations, as well as the role of States in creating new normative frameworks or developments in “soft law”. It also applies to actions such as training, capacity-building and the sharing of knowledge and information. It is well accepted that creating an environment conducive to building respect for IHL includes support for international laws which recognise and further develop those principles within the GCs or APs. Given that all States have signed the GCs it would seem self-evident that States should encourage and support further treaty law which identifies specific aspects of the GCs and strengthens those aspects through more detailed provisions. Both Pratt (Chapter 4) and Mas- singham (Chapter 8) make the observation with respect to the Arms Trade Treaty, that supporting the ideal that (otherwise lawful) weapons should not be provided to those who are using such weapons to violate IHL is a way of ensuring respect for IHL. A number of authors highlight the United Kingdom case in which the government has been forced to suspend weapons export licences for failing to investigate, in accordance with the correct legal procedures whether Saudi Arabia was committing breaches of IHL/war crimes in Yemen

#### Extending the non-appropriation principle to private entities solves colonial logics and space conflict [0:24]

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SPECIAL NATURE OF THE NONAPPROPRIATION PRINCIPLE: CHARACTERISTICS OF A STRUCTURAL RULE OF INTERNATIONAL LAW The interpretation of the non-appropriation principle in terms of a rule of customary law has received a broad support in the legal literature. I fully agree with such interpretation. However, I suggest to goes further this classic interpretation and to give the non-appropriation principle a special character. Having in mind the fundamental role that the non-appropriation principle plays in the proper functioning of space activities and the numerous examples deriving from States practice which attest its importance, I think that the non-appropriation principle should be considered a rule holding a legal effect which is superior to that of a classic customary norm. In short words, along with the typical characteristics belonging to a customary rule, the non-appropriation principle incorporates some other elements which provides it with a peculiar status and that allow this author to collocate the nonappropriation principle in a intermediate position between a customary and a jus cogens rule. Using as a starting point the words of the ICJ, which in the North Sea Continental Shelf Case, affirmed the existence of a particular category of provisions of “a fundamentally norm-creating character…”18, I propose to classify the non-appropriation principle as a “structural” norm. The adjective structural 5 refers to the fact that this principle represents the essence of the space law system. In my opinion, in order to identify a principle as a “structural” norm, such principle needs to hold the following characteristics: 1) It must represent the basis of the legal framework regulating a field of international law, i.e., it must constitute the fundamental pillar on which such framework is built on. 2) Its presence ensures that the other principles constituting such legal framework can operate and fulfil the purpose for which they are set out. Thus, we may say that without this structural principle the other rules of the above mentioned legal system lose their significance. 3) There must be a historical and present evidence of the special status of the norm in question. 4) If the structural norm is abolished, the legal system of which such norm constitutes the basis will collapse. 5) Its violation generates a special regime of responsibility for the State involved. Let’s see now if the non-appropriation principle incorporates these features. 1) The non-appropriation principle: the basis of space law The non-appropriative nature of outer space is the basic concept of space law. Since the first satellite was launched States agreed to renounce to any sovereignty claim on outer space and to consider outer space as nonappropriable. The upcoming space era was seen as an unrepeatable opportunity for all mankind and as a possible instrument to improve the quality of live of all people on Earth. The non-appropriation principle represented the best guarantee that this “humanitarian” and idealistic approach to the management of the space environment was put in practice. Its presence, indeed, was a manifest promise that States were willing to base space activities on a cooperative basis and to carry out the exploration and use of outer space for the benefit of all. 2) Predominance of the non-appropriation principle over the other space law rules The non-appropriation principle constitutes the premise for the putting into practice and realization of the other principles set out in the Outer Space Treaty. First of all, the freedom of exploration and use by all States of outer space (Article I, par. 2 of the Outer Space Treaty) may exist only in the presence of the non-appropriation principle. If each State was allowed to acquire territorial rights over parts of outer space, the freedom to accede to and use outer space would be reduced or completely abolished. **The nonappropriation principle, indeed, is to be considered the crucial component of the res communis idea.** Secondly, if national appropriation in space was allowed, the preservation of outer space for peaceful purposes only would cease to exist (Article III of the Outer Space Treaty). As analysed, **the non-appropriative nature of outer space has prevented to transport terrestrial conflicts and rivalries into outer space so far.** Moreover, if States were free to “nationalize” parts of outer space I seriously doubt that the principle of cooperation and mutual assistance (Article IX of the Outer Space Treaty) would keep guiding the activities of States in outer space. 3) Evidences of the structural status of the non-appropriation principle It is possible to enumerate numerous examples which support and confirm the structural status of the non-appropriation principle. These examples come both form the past, namely from the process leading to the setting up of space law, and from the current practice of States and private operators in space. Therefore, I have classified such evidences as either historical or modern. 3.1) Historical evidences **The res communis omnium nature of outer space found support in legal theory and in official declarations since the beginning of the space era.** Already in 1947, D. Manuilsky, UN Delegate of the USSR, proposed to submit a resolution to the UN with the purpose to declare outer space “an international entity”19. Such proposal did not find any echo. However, in the literature of the pre and post satellite era there was a generally accepted view that outer space could not be subject to national appropriation. 6 For instance Prof. Jenks in 1965 stated “Space beyond the atmosphere is and must always be a res extra commercium incapable of appropriation by the protection into such space of any particular sovereignty based on a fraction of the earth’s surface”20, while M.S. Smirnoff in 1959 declared that “The right of occupation and discovery does not exist in space which is considered as res communis”21. The principle that outer space was non-appropriable was also affirmed in the 1960 Resolution of the International Law Association declaring “outer space may not be subject to the sovereignty or other exclusive rights of any State”22 and in the 1962 Draft Code of the David Davies Memorial Institute laying down: “Outer space , and the celestial bodies, therein, are recognized as being res communis omnium,…and neither outer space nor celestial bodies in it are capable of appropriation or exclusive use by any State”23. As to the official declarations, already in 1958 Senator Johnson addressed the United Nations by declaring that: “We of the United States have recognized and recognize, as most all men, that the penetration into outer space is the concern of all mankind. If nations proceed unilaterally, then their penetration into space becomes only extension of their policies on earth. Today outer space is free. It is unscarred by conflict. No nation holds a concession there. It must remain that way”. On 14 September 1959, the Soviet space device Lunik-2 crashed on the surface of the Moon by carrying metal emblems bearing the coat of arms of the Soviet Union and the Soviet Republics. Immediately after the Lunik’s reaching the Moon, the soviet academics L.I. Sedov and A.V. Topchiyev declared that the coat of arm did not symbolize any territorial claim24. This interpretation was confirmed by Premier Khruschev during his staying in the US. He stated: “The Soviet pennant as an old resident, will then welcome your pennant and they will live together in peace and friendship and as well as people should live who inhabit our common mother the earth…We regard the sending of the rocket into outer space and the deliverance of our pennant to the Moon as our achievement, and by this word ‘our’ we mean the countries the countries of the entire world, i.e. we mean that this is also your achievement and the accomplishment of all the people living on the earth”25. From the United States side, we can quote the significant declaration of President Eisenhower which on September 22, 1960, addressed the United Nations General Assembly by indicating some basic concepts that in his opinion had to constitute the basis for international space cooperation. Among those there were the following principles: “We agree that celestial bodies are not subject to national appropriation by any claims of sovereignty”26. Later, as we have seen, the non-appropriation principle was incorporate in UNGA Resolution 1721 and 1962. In June, 1966, both the United States and the Soviet Union submitted to the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS) drafts of an instrument that would become the Outer Space Treaty. These drafts were based on the nonappropriative nature of outer space. In 1967, the non-appropriation principle of outer space was formally laid down in Article II of the Outer Space Treaty. Nine years after the signature of the Outer Space Treaty, an international case took place confirming the importance and the general acceptance of the non-appropriative nature of outer space. In 1976, eight equatorial States which were not parties to the Outer Space Treaty, claimed, by means of the Bogotà Declaration, sovereignty rights on the part of the geostationary orbit above their territory27. These States affirmed their non-acceptance of the principles of the Treaty, especially regarding the principle of non-appropriation. Their claim was rejected by the overwhelming majority of States on the ground that the non-appropriative nature of outer space was a rule binding all States independently by their participation to the Treaty. 7 3.2 Modern evidences As indicated in the beginning of this paper, there is an increasing number of legal authors who consider the non-appropriation principle the major obstacle to the commercial development of outer space. With particular regard to the possibility to use and exploit extraterrestrial mineral resources, these authors affirm that the current space law regime, which prohibits the creation of property rights in outer space, fails to guarantee predictability for space entrepreneurs and to protect the rewards of their efforts. Therefore, private operators are discouraged to undertake missions to exploit such resources. In order to make these exploitative activities possible these authors propose the following theories: 1) To amend or simply to remove Article II of the Outer Space Treaty and to replace it with a clause allowing for the creation of titles of property rights in outer space28; 2) To extend the existing terrestrial regime of property rights in outer space. As a consequence, all individuals would be entitled to use, exclude and dispose of outer space and its resources29; 3) The United States should ignore the 1967 non-sovereignty provision and start to appropriate parts of outer space30; 4) The United States should recognise the claim of those who discover valuable mineral resources31. According to this theory the recognition of these claims would not constitute national appropriation, but rather the exercise of the US jurisdiction over its citizens. All these theories must be rejected because they lack a solid legal basis and because none of these proposals is able to prove that a system allowing the creation of property rights, would guarantee the orderly and coordinated development of space exploitative activities. The important consideration for this paper is that, in my opinion, all these attacks on the non-appropriation principle symbolize a confirmation of the special status of such principle within the context of space law. The more such authors attack the nonappropriation principle, **the more its importance and the need for keeping it as the basis of space activities emerge.** The fact that this authors only focus on this principle and not on the others, such as the one establishing that the exploration and use of outer space shall be carried out for the benefit and in the interests of all mankind, is an indication that it is the essence of the space law system. **Apart from these theories, the other major threat to the non-appropriation principle comes from companies which sell lunar and other celestial bodies’ acres**. Among these companies one of the most popular is Lunar Embassy. Lunar Embassy has established the practice of setting out twin companies and to nominate ambassadors from around the world. Recently a juridical controversy has emerged involving the so-called Lunar Embassy in China. The legal consequences of this controversy are particularly relevant for the purpose of this paper. In October 2005 Beijing industrial and commercial authorities suspended the license of Lunar Embassy in China for having engaged in speculation and profiteering and fined it 50,000 yuan. Lunar Embassy in China sued the Beijing Administration32. The Haidian District People’s Court ruled against the company in November 2005. Then, the company decided to appeal against the Court’s decision33. In March 2007 the Beijing First Intermediate People’s Court ruled against the company, stating that no individual or State could claim ownership of the Moon34. In its pronunciation the Court cited the fact that China was part of the Outer Space Treaty, which prohibits appropriation of outer space and its parts, since 1983. The ruling of the Chinese Court represents a very significant confirmation of the nonappropriative nature of outer space after forty years of its entry into force. It is a clear-cut indication of the fact that the nonappropriation principle holds a special status. Individuals are not allowed to act in contrast to it because its presence is vital for the safe management of outer space. **If violation to the non-appropriation principle were allowed, the consequences for the whole space law system would be catastrophic.** Another important re-affirmation of the importance of the non-appropriation principle 8 has been made in 2004 by the Board of Directors of the IISL by means of the “Statement of the Board of Directors of the International Institute of Space Law on Claims to Property Rights Regarding the Moon and Other Celestial Bodies35. The Statements reads: “The prohibition of national appropriation…precludes the application of any legislation on a territorial basis to validate a private claim. Hence, it is not sufficient for sellers of lunar deeds to point to national law, or the silence of national authorities, to justify their claims…”. The Statements also calls the States Parties to the Outer Space Treaty to: “comply with their obligation under Articles II and VI of the Outer Space Treaty…under a duty to ensure that, in their legal systems, transactions regarding claims to property rights to the Moon and other celestial bodies or parts thereof, have no legal significance or recognised legal effect”. The Statement on one side rejects those theories supporting the national registration of private claims to the Moon and other celestial bodies and on the other restates the special obligation relying on States to respect and to ensure the respect of the non-appropriative nature of outer space. 4) The abrogation of the non-appropriation principle will generate the collapse of the system of space law **If the non-appropriation principle was removed, it is very likely that the system of space law as we have know it so far would cease to exist.** In a future space scenario without the presence of the non-appropriation principle, conflicting claims among States would arise. This situation would engender international tension and increase the risk for armed conflict in outer space. Moreover, as soon as a State was able to gain control over an area of a celestial body, there would be nothing to prevent such a State to impose taxes and royalties for the acquisition of rights by private operators to use such area and its resources. As indicated by Sters and Tennen, in a similar scenario the costs for utilizing space resources and for carrying out exploitative missions would increase36. Therefore, the abrogation of the nonappropriation principle would prevent instead of favour, as it is suggested by some, the commercial development of outer space. Additionally, if States were allowed to acquire sovereignty rights over parts of outer space, obviously they would pursue their own purposes and interests. Thus, the idea that the exploration and use of outer space is the “province of all mankind” would lose its relevance. 5) Special responsibility and consequences for the violation of the non-appropriation principle As we have just seen, if the non-appropriation principle was removed, the risk for an armed conflict in outer space would be high. Therefore, States have a special duty to act in conformity with such principle. But what if a State should suddenly decide to violate such principle and to appropriate one part of outer space? What would be the legal consequences of such behaviour? Considering the fact that Article III of the OST makes international law, including the Charter of the United Nations, applicable to the exploration and use of outer space and having in mind that Article I (1) of the UN Charter lays down the obligation to maintain peace and security, and to prevent or remove threats to peace, the individual violation by a State of the principle contained in Article II of the OST should be considered a threat to international peace. Such a State should be seen as responsible for an act of particular gravity towards the whole community of States. Therefore, in a similar situation the other States would be entitled to act collectively through the United Nations to stop such behaviour and to remove this threat to peace. A joint effort and pressure in that direction should be likely to restore the status quo ante. The argument could be put forward that if a State should decide to withdraw from the Outer Space Treaty, it would be no longer bound by the provisions of Article II and thus it could appropriate parts of outer space. This argument should be rejected on the basis that even after that withdrawal, such a State would be obliged to respect the non-appropriation 9 principle in consideration of its structural and special status. CONCLUSION The non-appropriation principle represents the basic principle of space law. Considering its importance and its role in providing the conditions for the peaceful and orderly management and development of space activities, this paper has put forward the hypothesis of considering that principle a structural rule of international law. As it has been shown, there exist several historical and modern examples which confirm the peculiar status of the principle contained in Article II of the Outer Space Treaty. Having in mind the special characteristics of the non-appropriation principle, the theories proposing its abrogation or suggesting unilateral State actions against it are unacceptable. If these theories were put into practice, the use of outer space would evolve into a situation of chaos and, moreover, its commercial development would be hindered instead of favoured. Any hypothetical amendment of the nonappropriation principle should be carried out by all States acting collectively. This would be the only option to prevent the risk of war in outer space and to allow the harmonized management of space activities in the era of space commercialisation.

#### Amending space iLAW is an opportunity to reframe traditional IR discussions about sustainable use and security concerns [0:26]

Sutch and Roberts 19 (Peter Sutch Department of Politics, Cardiff University, Cardiff, UK and Department of Politics, University of the Witwatersrand, Johannesburg, South Africa, and Peri Roberts Department of Politics, Cardiff University, Cardiff, UK), “Outer space and neo-colonial injustice: Distributive justice and the continuous scramble for dominium”, International Journal of Social Economics, Vol 46, Issue 11, August 23rd, 2019, <https://www.emerald.com/insight/content/doi/10.1108/IJSE-03-2019-0152/full/html> NT

The global commons: a brief sketch At their heart, the remarkable early debates about global commons exploitation and management explored the ways in which we might order the regimes governing the deep sea bed and outer space to the benefit of all humankind, with special provision for the needs of less developed states, and with a view to avoiding the conflict and suffering associated with colonialism and war. While the negotiations of what we now know as common heritage regimes really got going in the late 1950s, as previously unavailable natural resource pools became a subject of international interest, it is worth setting the scene by thinking about the nature of property rights in general. This helps us understand the unique way in which the conventional commons sought to govern these resources. Property is a legal construct. There are a variety of ways in which property rights can be assigned but the developed global commons solution was distinctive. Christopher Joyner’s exploration of the legal implications of the common heritage regime that was to govern property rights in the global commons begins (as do many accounts) with the traditional roman law distinction between res nullius and res communis. These terms apply to property or to space that is not owned by anyone. If that space is res nullius then it is open to “appropriation and exploitation by anyone who is capable of carrying out those acts” ( Joyner, 1986, p. 194). Sovereignty is gained, and exclusive property rights established, by demonstrating control over that space by settling it or exercising jurisdiction over it. **On the other hand, if the area is considered res communis it is land owned by no one, open for use by all but not available for appropriation and so not available to become the exclusive property of any one person or any one nation** ( Joyner, 1986, p. 194). Here agents have free access but never gain exclusive title to the resources in question. International or global spaces, such as the sea and the resources therein, were traditionally thought of in res communis terms as, for example, “free seas”. However, when advances in scientific knowledge made it clear that the assumptions of inexhaustibility, the thought that resources were renewable and sustainable enough to provide for all indefinitely, that partly underpins the concept of free seas are problematic this (in addition to several other concerns about the consequences of establishing a res communis regime in the high seas) invited a different approach to at least some questions of property (Schrijver and Prislan, 2009). Under emerging and innovative global commons rules spaces designated as such could not be appropriated and access to the resources of that space had to be carefully managed to ensure sustainability of access for all, at present and in the future. The conception of unowned resources and property in a global commons regime is therefore distinct from res nullius regimes because it denies the right of appropriation and it is distinct from res communis regimes because it denies unfettered access, replacing it with some form of regulated access. The questions of what spaces or resource should be thought of in these terms, what the term implied (about distributive or intergenerational justice, for example), how the space and resources at stake were to be managed and administered, and what obligations the administrators had to humankind as a whole all formed part of the elaborate and often painstaking negotiations regarding property rights and benefit sharing underpinning the international conventions that emerged, and they continue to be hotbeds of legal, political and normative contention. The strongest or most redistributive approach to global commons governance is the notion that the resources at stake were to be treated as the “common heritage of mankind”. The central feature here is that these areas, and the resources therein, need to be managed for the common good. Common features of such regimes include pacific use, sustainable exploitation or conservation, shared scientific advancement, intergenerational justice and distributive justice, albeit to differing degrees across the range of regimes. **Important to the development of such regimes was the thought that the international community needed both to respond to the inequalities associated with colonialism and avoid the consequences for both security and justice of a scramble for dominium over these spaces that was explicitly likened to the colonial “scramble for Africa”** (Pardo, 1967). These were widely understood to be important, but not uncontentious, drivers in these debates. We should understand that the key parties often had differing aspirations for ad interpretations of the idea of the “common heritage of mankind”. The states advocating a NIEO in the aftermath of post-war decolonisation had a distinctive take on the commons ideal, very different from that of many of the more developed states. Socialist states took a different view to the liberal-capitalist states. Key states (perhaps most tellingly the USA) even took such contrasting views at different points in the debates over the period from the 1950s to the present day that it prompts at least one scholar to ask whether the USA’s initial, powerful support for the common heritage ideal is sufficient to make a case from the principle of estoppel that the more laissez faire or neo-liberal approach adopted in the later period is unlawful (Blaser, 1990, p. 87). Several alternative statements of the broad ideals have also been advanced and agreed, such as the idea that such resources might be considered the “common interest of mankind” (The Antarctic Treaty, 1959) or the “common province of all mankind” (Outer Space Treaty, 1967) and related but more general terms such as “the common concern of humanity” (Shelton, 2009). **Changing debates about how we ought to govern the commons have been primarily prompted by advances in science and technology that had important international ramifications for the potential exploitation of resources** rather than by the rise of a philosophical or conceptual notion of the commons. However, early interventions – direct in the case of Arvid Pardo’s (1967) speech to the UN General Assembly and indirect in the form of Garrett Hardin’s (1968) influential paper “The Tragedy of the Commons” in Science – led to some of the most fascinating debates in global politics. These debates about the commons of the sea, outer space and, in a slightly different fashion, the Antarctic all have their roots in the period after the Second World War. Whilst the prospect of immense mineral wealth on the ocean floor had been apparent from as early as 1873, with the “Challenger” voyage which had found polymetallic nodules on the sea bed (Deacon et al., 2001 in Schrijver and Prislan, 2009, p. 177), it was not until the 1960s and the 1970s, when further wealth in the form of polymetallic sulphides and ferromanganese crusts were discovered, that the estimated wealth from these rich mineral deposits became the subject of international concern and debate. Also, in 1957 the launch of “Sputnik I” galvanised the international community and the academic community to think seriously about the challenges and possibilities of space exploration. Finally, in 1958, disputed territorial claims, as well as concerns over sustainable whaling and access to other marine resource and associated security claims, led to the negotiation of the Antarctic regime (Buck, 1998, chapter 3). The designation and acceptance of each of these as “commons” was to be the subject of separate negotiations, but the shared political and historical context of scientific development, post-colonialism, and an emphasis on peace informed by the tragedy of two global conflicts meant that there was much cross-fertilisation between these negotiations. They also shared key drivers of debate in the prospect of incredible wealth that is not yet owned by anyone and in the security implications of these newly accessible spaces. **These were debates in which the values of security, economic exploitation and distributive justice were inextricably intertwined**. This is, perhaps, most straightforwardly illustrated with a closer look at the evolution of conventions and laws governing outer space. Global commons debates, outer space and the deep sea bed Prior to the 1957 launch of “Sputnik I” by the USSR there had been some growing interest among scholars in the prospect of space exploration and its implication for the global legal order. However, it was the success of the Soviet launch that placed the issues firmly on the agenda of the international community and pushed the USA to what President Eisenhower termed the “Sputnik crisis” triggering the “space race” between the two superpowers (Devine, 1993). The USA entered the race in 1958 with the launch of “Vanguard I” and, while the initial driver of the competition was security concerns (the possibility of Soviet missiles in orbit), the launch of commercial communications satellites and later the prospect of the commercial exploitation of extra-terrestrial resources has driven both the politics and conceptualisation of outer space in equally significant ways (Vogler, 2000, p. 95; Tronchetti, 2009). As early as 1952 Oscar Schachter, then Director of the United Nations Legal Department, referred to space as “common property of mankind over which no nation would be permitted to exercise its domination” (Blaser, 1990, pp. 80-81, see also Tronchetti, 2009, p. 91). Scholarly debates revisited the distinction between res nullius and res communis and, argues Tronchetti, “use the term res communis omnium to point out the fact that no state’s sovereignty can be exercised in outer space, because it represents an area of common interest of all mankind” (Tronchetti, 2009, p. 12). This idea, that property rights in outer space ought to be managed as res communis because space was an area of common interest to all mankind, was to have a very significant impact on the later evolution of space law. In 1958 the United Nations General Assembly passed resolution 1348 (XIII) on the peaceful uses of outer space. The resolution established an ad hoc committee which one year later, under UNGA resolution 1472 (XIV), became the permanent Committee on the Peaceful Uses of Outer Space (COPUOS). That resolution, and subsequent ones, retained the references to “the common interest of mankind” and when in 1963 the “Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space” was adopted by the General Assembly (UNGA res 1962 (XIII)) the phrase became a fixture in the debates (Tronchetti, 2009, p. 16). In fact, the declaration prefigured what is often referred to as the Magna Carta of space law, the Outer Space Treaty (OST – Treaty on the Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies 1967). The first four articles of the OST set the general tenor of all future debates: 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. Outer space […] shall be free for exploration and use by all States […] on a basis of equality […] and there shall be free access to all areas of celestial bodies. ARTICLE II Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty […] 1295 Outer space and neo-colonial injustice ARTICLE III States […] shall carry on activities in the exploration and use of outer space […] in the interest of maintaining international peace and security and promoting international co-operation and understanding. ARTICLE IV […] The moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes. (www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/outerspacetreaty.html, accessed 24 October 2018) The language is striking and focussed on both pacific use and shared benefits. The treaty establishes three rights ( free access, exploration and use) all of which are to be carried out for the benefit and interest of all countries. As Tronchetti notes: In general terms this provision means that the exploration and use of outer space, being the “province of all mankind”, is not aimed at serving only the interests of those states that have the technological capability to explore and utilize outer space, **but those of all states, no matter what their degree of economic and scientific development is**. Only mankind acting collectively, by way of international cooperation, has the right to enjoy the benefits derived from space activities and to establish how to share them among all nations. (Tronchetti, 2009, pp. 23-4) Much scholarly effort has been expended on the fascinating project of working through potential differences between the “common province of mankind” and the several related notions found in other treaties and conventions developed to deal with commons, such as the “common heritage of mankind”, “common interest of mankind” and “common concern of mankind”. However, the normative key may lie in trying to understand what follows from the idea that such spaces are common to mankind, regardless of the precise phraseology. Indeed, whilst this variety in concepts could be regarded as a weakness (Blaser, 1990, p. 80) it can also be seen as a strength because it becomes clear that a radical set of ideas have developed and been cemented into the past, current and potentially future discourses. **It demonstrates that each 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.** It is worth emphasising that each iteration of the diplomatic, scholarly and institutional conversation has had to return again to the core questions of what the fact that the commons are “common to mankind” means in moral and practical terms and, importantly, it has not seemed fully appropriate to just set these values aside. Facing the contemporary challenge posed by US policy is no different and our debates must, once again, return to these questions.

# Extra

#### Colonial powers are using the privatization of space as a play for space dominance – illusions of colonial exceptionalism extend to space [0:30]

**Duke 20** (Sgt Joshua E, Sergeant Duke served as a US Army intelligence analyst, including 24 months in Iraq in support of Operation Iraqi Freedom I, II, III, and IV. He holds a BA in intelligence studies with a concentration in counterintelligence from American Military University and is now serving in the United States Marine Corps. Sergeant Duke’s research focus is on national security and intelligence, including new approaches to counterterrorism using counterintelligence-based models; autonomous weaponry developments and their applications to international law, armed conflict, and US national security; and the future impacts of the space domain on global economics, intelligence operations, and US national security. He is also the author of “From Missiles to Microchips: Nation-States, Non-State Actors, and the Evolution of Intelligence” (Global Security Review, 2020); “Paid to Kill: An Examination of the Evolution of Combatants for Hire” (Global Security Review, 2020); and “Cyber World War: The People’s Republic of China, Anti-American Espionage, and the Global Cyber Arms Race” (Global Security Review, 2020, forthcoming).) Conflict and Controversy in the Space Domain: Legalities, Lethalities, and Celestial Secur," Air University (AU), <https://www.airuniversity.af.edu/Wild-Blue-Yonder/Article-Display/Article/2362296/conflict-and-controversy-in-the-space-domain-legalities-lethalities-and-celesti/> KD

Space is becoming the next frontier for human conflict. The Russian Federation (RF), People’s Republic of China (PRC), and United States are the three most powerful nations on Earth, and each is deeply invested in a new kind of space race to gain and maintain control over space. Each of these nations has plans for lunar bases and the colonization of Mars. Each is also developing a variety of space-based weapon systems and spacecraft capable of maneuvering in zero gravity, the combination of which can and will be used to control space and potentially the future of mankind. **Existing international laws** and treaties, notably the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (Outer Space Treaty), **lack sufficient legally binding language when applied to today’s space-based technologies and concepts for developments**. There are few international recourses available to prevent a nation from developing a variety of space weaponry or exploiting space resources. This article assumes the inevitability of space exploration—including celestial body resource exploitation, weapon research and developments, and the human colonization of Mars—**in an attempt to answer the question of how important the role is for American leadership of human expansion into space**. The author explores the technologies available in today's space race environment, including potential future energy resources available in space, weapon systems designed for space warfare, the legal implications of each, and some potential consequences of different nations gaining the upper hand in the heavens. Part 1 outlines recent space-relevant technological developments. Part 2 examines lunar exploitation and resources, particularly Helium-3, and the potential for future fusion energy developments. Part 3 explores the potential benefits of exploring, exploiting, and colonizing Mars. Part 4 underscores the severity of the potential and actuality of space weaponization, including an overview of existing and theoretical weaponry and legal implications. Finally, Part 5 concludes with an analysis of the potential implications of recent developments and control over space and celestial bodies with regard to global economic stability and space superiority, emphasizing the absolute need of American leadership as humans expand into the space domain. Part 1: Space Tech of Today Advancements in space technology are quickly leading to an inevitable conflict over control in space, which includes control over the Moon through lunar bases and potentially control over the colonization of Mars. The PRC has added the capability to "physically attack satellites using antisatellite [ASAT] interceptors, miniature space mines, and ground-based lasers" into its military space program.1 These capabilities fall under the guise of the Outer Space Treaty’s permission to destroy militarized satellites.2 These technologies could easily be used offensively to create a decision advantage in combat. Some analysts believe that the deliberate collision of PRC satellites with older satellites shows that the PRC has experimented with "parasitic satellites" designed to lie dormant in the vicinity of a target until activated, potentially for hacking purposes.3 The PRC even "reportedly launched a hypersonic 'prototype space fighter' " in 2010. It continues to be locked in an intense space race with the rest of the space-savvy international community—particularly Russia, the United States, and India—with a short-term goal of controlling the Moon with a lunar base and a longer-term goal of populating Mars under the rule of the PRC.4 **The development of maneuverable space planes and lunar bases is not unique to the PRC.** The National Aeronautical and Space Administration (NASA) developed the X-37 and X-37B space planes, and the Russian Federation is developing a maneuverable space plane using nuclear technology for power.5 All of these nations (as well as several others, including India and Japan) intend to establish lunar bases within the next 20 years.6 Despite the array of international treaties and agreements promoting peaceful global development of space resources in the name of science and humanity, it is unlikely that space will remain weapon free and **likely that it will become the next frontier of global combat**. Space weapons in development may use robotics, nanotechnology, and directed energy such as microwaves and lasers.7 With the establishment of a lunar base, a nation with advanced laser technology, advanced cyber weaponry, maneuverable space planes, satellite targeting capabilities, nano-science stealth technology, artificial intelligence, and self-guiding nanotechnology bullets would undoubtedly have the capacity to rule the Earth as it sees fit. All of these technologies already exist or are in development phases, and they are the future of intelligence and warfare.

#### Space exploration in the squo privileges wealthy, spacefaring nations, allowing them to steamroll historically marginalized nations, seizing their orbital space for monetary gain [0:31]

Thornburg 18 (Matthew Thornburg, Associate Editor of Volume 40 of the Michigan Journal of International Law, Associate Professor of Political Science at University of South Carolina Aiken and Director of the USCA Social Sciences and Business Research Lab), “Are the Non-appropriation Principle and the Current Regulatory Regime Governing Geostationary Orbit Equitable for All of Earth’s States?”, Michigan Journal of International Law, November 2018, <http://www.mjilonline.org/are-the-non-appropriation-principle-and-the-current-regulatory-regime-governing-geostationary-orbit-equitable-for-all-of-earths-states/> NT

Notions of fairness and common benefit ring throughout the body of international law governing outer space. Indeed, the very preamble of the Outer Space Treaty (“OST”) declares that: [T]he 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…”[1] However, such noble, egalitarian ideas for the future use of outer space may actually create unequal outcomes down on Earth. This blog seeks to briefly highlight just one example of the unfair limits on the use of outer space for less-developed countries as a result of the Outer Space Treaty’s (“OST”) non-appropriation principle. As the law currently stands, geostationary orbit – a constant orbital position above Earth’s equator – is governed by the OST and is therefore subject to the treaty’s attendant ban on national appropriation. Spaces, or slots, in geostationary orbit[2] are desired because they are exceedingly convenient for communicating with earth. They are highly limited and as a consequence, highly valuable. **Moreover, these spaces are allotted on a first-come-first-served basis[3] making them virtually unattainable by less scientifically and economically advanced states[4], or those that are just plain late to the game.** The ban on national appropriation is enumerated in the Second Article of the OST, which states: “Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by other means.”[5] The geostationary orbital position is generally agreed upon by experts[6] as part of “outer space” and consequently, forbidden from appropriation. The OST is clear in prohibiting claims of sovereignty, but the subsequent clauses leave much to interpretation when considering what other acts constitute “national appropriation.” In other words, the question surrounding geostationary orbital slots is “whether the continued exclusive occupation by a geostationary satellite of the same physical area is a violation of the ban on national appropriation”[7] by use, occupation, or other means. In his article, Major Legal Issues Arising from the Use of the Geostationary Orbit, Stephen Gorove says that, “it is not clear that a satellite in geostationary orbit would be able to maintain its exact position and occupy the same area over a period of time…” so as to “appropriate” and thus violate Article II of the OST. The analysis should not turn on whether the satellites in geostationary orbit maintain their exact position. Instead, it is the continual use of the orbital slot that should be examined in light of the OST prohibition. **The average lifespan of a geostationary satellite is 15-20 years,[8] effectively shutting out any other state’s use of that slot for at least that long.** A time frame of this nature seems to be the exact type of “use or occupation” the treaty seeks to foreclose because of the consequent unequal access to the use of space, and the consequent potential to cement the economic interests of certain nations and firms. Compounding this concern is the fact that operators of the geostationary satellites need only refile with the International Telecommunications Union (“ITU”) to “renew” a slot and replace old satellites with new ones.[9] Essentially, such operators keep the orbital slot indefinitely. In light of the OST – a treaty dominated by goals of fair and equitable use and access to space – endless use of these valuable slots should rise to the level of national appropriation by means of use, occupation, or other means. The system of geostationary orbital space allocation has elicited several responses, the most famous of which was the Bogotá Declaration (“Declaration”), drafted in resistance to the non-appropriation principle. This was a proclamation by eight equatorial states, which claimed that the geostationary orbit directly above their borders was an integral part of the land over which they exercised complete and exclusive sovereignty.[10] Accordingly, each state claimed that its sovereignty had been breached by the presence of foreign satellites. This argument failed to garnish much support and the Declaration was not signed by a single space faring nation. The Declaration’s opponents refused to entertain the idea of sovereignty over geostationary orbit as it would be an affront to the non-appropriation principle. Though according to the Declaration, this principle is exactly what “enabled the de facto sovereignty [over geostationary orbit] of dominant, global north states”[11] in the first place. By simply appealing to the non-appropriation principle, scientifically and economically advanced states can reject arguments similar to the Bogotá Declaration out of hand while maintaining their own unfettered use of space. **The non-appropriation principle makes orbital slots available to “all” states by law, but in reality they are only available to states with the scientific and economic means to use them.** In a world where the non-appropriation principle has become customary international law,[12] less developed states have attempted to benefit from outer space in other ways. For example, in 1991 the ITU granted Tonga six orbital positions, but shortly thereafter, its national satellite company began renting and auctioning its spaces to other satellite companies, including a Colorado firm.[13] There were various rebukes of Tonga’s actions by both states and private companies, describing the practice as “a transparent attempt to secure as many orbital slots as possible to trade as a commodity for pecuniary gain.”[14] It was also viewed as a violation of the fundamental principle of non-appropriation. In an effort to avoid such situations occurring again in the future, the ITU now conducts rigorous reviews in an effort to ensure that there are genuine intentions for orbital slots.[15] Following Tonga, it’s clear that states cannot trade an orbital slot granted to them as a pseudo-commodity claim. Based on the lukewarm response to the Bogotá Declaration, it also seems that the international community will not recognize orbital slights by virtue of a nation’s sovereign right to the space over its territory. Of course, there are valid arguments supporting the international rejection of the Bogota Declaration, especially since the national-appropriation principle constitutes international law. But as shown by Tonga, **under the current system, even if a less-developed state is afforded geostationary slots, the non-appropriation principle prevents the financial benefit from the sale or lease of such slot.**[16] In contrast, private communications firms, and by proxy their home states, are able to benefit financially by selling a stable stream of satellite transmissions to consumers. If the non-appropriation principle allows such private financial gain, why shouldn’t it allow a state to gain in any way it sees fit from the allocation of orbital slots? **The principle’s net effect is maintaining the status quo for those states that won the race of placing satellites in geostationary orbit.** Effectively then, orbital slots are only valuable for one reason: their use. Only those states with the capabilities to support government space programs, or the economic stability to support space-capable private firms, will be able to place satellites into geostationary orbit. **It seems that the non-appropriation principle has had the effect of replicating in space the global financial imbalance on Earth.** While the non-appropriation principle has appeared to create disproportionate results regarding the use of outer space, such results do appear to be the unintended consequences of an optimistic treaty governing space. **Nevertheless, it is critical that the international community begins to reconsider the effects of that treaty, and the legal regime as a whole, on the equitable use of space.** As the economic potential of outer space is further unlocked, the function of the non-appropriation principle may have become outdated. Certainly, any change to longstanding international law – namely a revision of the ban on national appropriation – would have significant unintended consequences of its own. **However, with the increasing exploitation of outer space for financial gain, the effect of the non-appropriation principle on geostationary orbital allotment will be one of many examples of less developed states being foreclosed from participating in, and benefiting from, the use of space.**

#### Space colonization by private entities makes conflict and exploitation inevitable [0:26]

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Company-states were predicated on an understanding of sovereignty as divisible and delegatory, defying what we today consider “public” and “private” power. Compared to company-states at their zenith, even the largest modern-day multinational corporation—and certainly SpaceX and Blue Origin—has significantly less authority, with absolutely no military might to speak of. The monarchies that first granted monopoly charters to these voyaging companies, having evolved into modern states, have also consolidated sovereign authority and gained far more power than their antecedents in previous centuries. Today states, not corporations, are perceived to be the truly dangerous actors in space exploration. Particularly in the context of worsening U.S.-China relations, the militarization of space by states is often posited as the most likely way that celestial encounters may become violent. On this view, if private U.S. companies were to extract commercial resources from asteroids, it would be a much more peaceful prospect than the U.S. Space Force establishing a military base on the moon. However, **this framing ignores corporations’ violent histories and the deep connection between private commercial pursuits and systems of capitalism and colonialism.** Moreover, though states may help create and participate in these systems, they do not always control the forces they unleash. For example, there was nothing inevitable about the fact that the East India Company came under the control of the British state. Even when it did, it caused devastating impacts on both the places it claimed to “rule” as well as the state that had chartered and owned it, ushering in the age of the British Empire. As historian William Dalrymple, author of The Anarchy: The Relentless Rise of the East India Company (2019), noted, “It was not the British government that seized India at the end of the 18th century, but a dangerously unregulated private company. . . [that] executed a corporate coup unparalleled in history: the military conquest, subjugation and plunder of vast tracts of southern Asia. It almost certainly remains the supreme act of corporate violence in world history.” **As contemporary companies set out to colonize space, we should ask whether modern states have a better grasp on how to control corporations and the violence that may result from battles over who ought to rule these settlers and resources.** Though Blue Origin and SpaceX are indebted to the U.S. government for funding, U.S. regulators’ ability to manage these corporations—especially Musk’s—already appears limited. Musk’s remarks toward U.S. regulators, even those investigating him, are infamous for being outrageous and crude—and his behavior is no less intransigent. For instance, in December of last year, SpaceX refused to comply with Federal Aviation Association (FAA) orders to abort a high-altitude test launch of its Starship rocket after the agency revoked its launch license due to atmospheric conditions. And this was not the first time Musk defied government authority. In May 2020 he re-opened his Tesla factory despite an Alameda county health order to shelter in place due to the COVID-19 pandemic, requesting on Twitter that police “only arrest him” if law enforcement took action. His companies have been repeatedly investigated and fined for various other regulatory and safety violations. (Reports have claimed that the Tesla factory does not have proper hazard signage because Musk “does not like the color yellow.”) Is it simply the case that Musk, like many powerful men before him, receives preferential treatment from the state? Or are the state and its regulatory agencies truly unable to control him? Musk, for his part, does not seem particularly cowed. After the December rocket launch incident, the FAA announced that additional measures, including having an FAA inspector on site, will be imposed on SpaceX during future launches. In response Musk tweeted on January 28 that the FAA “rules are meant for a handful of expendable launches per year from a few government facilities. Under those rules, humanity will never get to Mars.” For Musk, becoming an inter-planetary species is an existential matter for human civilization, far more important than rules and regulations. Both Bezos and Musk use the language of moral imperative when talking about space colonization: humanity must not merely explore space, but settle it, too. The two engineers can easily explain the technical dimensions of their plans to colonize the cosmos. Though these plans differ—Bezos wants to establish artificial tube-like structures floating close to Earth, whereas Musk wants to terraform Mars—the political philosophies underpinning them are remarkably similar. **Both offer utopian visions of humanity in space that attempt to provide technological solutions to the political problems that colonialism and capitalism have caused.** In 1982 Bezos said in his high school valedictorian speech that “the Earth is finite and if the world economy and population is to keep expanding, space is the only way to go.” His views have not changed much since then. “[Within a few centuries] we’ll be using all of the solar energy that impacts the Earth,” he told a crowd at an event hosted by Blue Origin. “That’s an actual limit.” This Malthusian logic underpins his arguments about the inevitability of humanity’s growth and the necessity of expanding into space. There are short-term problems, he explains, such as poverty and pollution, and there are long-term problems, such as running out of energy. If we do not want to become “a civilization of rationing and stasis,” Bezos warns, we must expand to the stars where “resources are, for all practical purposes, infinite.” For Musk space colonization is also a means to preserve human civilization, albeit as a hedge against eventual extinction. “I don’t have an immediate doomsday prophecy,” he told an international conference in 2016, “but history suggests that there will be some extinction event. The alternative is to become a space-faring civilization and multi-planetary species.” Whereas Bezos emphasizes the cyclical logic of capitalist growth—we must expand, in order to keep expanding—Musk is more explicit in his plans for colonial settlement. One of his proposals—to allow individuals to purchase one-way tickets to Mars which can be paid off through promised jobs in the new colony— has been called **Martian indentured servitude**. “Mars would have a labor shortage for a long time,” Musk explained, so “jobs would not be in short supply.” And while Bezos imagines that humans will be able to travel between Earth and space often, Musk contends that the Mars colony should be self-sufficient, able “to survive if the resupply ships stop coming from Earth for any reason.” For two entrepreneurs whose businesses have been lauded as exceptionally visionary, their celestial utopias stand out for their lack of political creativity and awareness. **Bezos’s notion that imperial expansion is the only way to support an ever-growing population is an old colonialist appeal, now repackaged for the stars**. The infinite need for resources, as well as the “poverty and pollution” that Bezos dismisses as short-term problems, are deeply enmeshed in capitalism’s cycles of extraction and are currently causing Earth’s climate crisis.

#### The Bogotá declaration changes the conception of space from a global commodity to one bound by laws of national sovereignty, disrupting the dominant regime of the colonial powers

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Postcolonial Unrest in Outer Space Arendt’s speculative ruminations about the authoritative limitations of the laws governing outer space vaguely anticipated fundamental dilemmas in space law today. Just as Arendt worried about the unfettered free use of territory and property in space, several contemporary controversies in space law concern limitations on territoriality and property rights in space. These disagreements tend to fall along fault-lines between global north and south nations, between colonial or imperial states and their former subjects. Historically, such disagreements arose out of national liberation movements and postcolonial unrest in the mid to late twentieth century. This has led to an ongoing history that continues as one of postcolonial struggle. **Prominently, due to the unique relationship between equatorial territories and geostationary orbit, such territories are particularly useful for rocket launches. Thus, since the mid twentieth century, global north nations have exploited these territories for this purpose, resulting in various ongoing environmental and labor concerns.** For example, only last April, protestors blockaded the European space industry at the Guiana Space Center, formed in the 1960s after French colonization, as Peter Redfield describes in Space in the Tropics. Protestors at the Guiana Space Center last April. Credit: AP Photo/Pierre-Olivier Ray. A Global Uprising? **The Bogotá Declaration is an intriguing example of an anti-imperial struggle about outer space that appears more intrinsically global** than the revolutions discussed in 3/13. **This is by virtue of its attempt to reconstruct state authority in outer space by employing limitations on territory**, much as Arendt might have envisioned. In the Declaration, a coalition of equatorial states (Colombia, Congo, Ecuador, Indonesia, Kenya, Uganda, Zaire, and Brazil) **attempted to resist the OST’s non-appropriation principle—which prevents claims of sovereignty in outer space**—by asserting that each of their national territories extends to geostationary orbital slots overhead. The Declaration claims these slots as natural resources connected to the equatorial status of the territories below, thus allowing these states to “call on the jus cogens principle that States have absolute control over their natural resources to exercise sovereignty over the geostationary orbit.”[10] Because such orbits were and remain valuable for telecommunications satellites, the postcolonial nations that signed the Declaration were **concerned that global north states would occupy these slots before the developing world could achieve the technological and economic means to do so.** Although the Declaration has failed because no spacefaring nation signed it, remnants of this legal uprising continue into the present day. The Constitution of Colombia still contains a provision reiterating the country’s sovereignty over geostationary orbit above Colombian territory.[11] Colombia and the Republic of Congo have signed but not ratified the OST. And, although the International Telecommunication Union (ITU) regulates orbital slots, out of 427 satellites in geostationary orbit, “**only a few belong to technologically developing States**.”[12] The Declaration’s global character is distinct from those discussed in 3/13. Although the Arab Spring and OWS uprisings were responses to the neoliberal, capitalist, imperial order that has emerged from the global north, they manifested in practice as struggles resisting particular domestic circumstances, no doubt influenced by those broader grievances and influences. **By contrast, the Declaration is a fascinating case in which the struggle is inherently over the constitution of “the global.”** Various states did not merely share broad concerns about the global north’s abuses of force and capital, but came together to specifically respond to these concerns in a single, concerted action: a claim about the physical connection between their equatorial territories and geostationary orbital slots above them. **Their legal uprising was a reimagining of the fundamental scientific, natural, and legal relationship between space, Earth, and the state.** Restated in Arendtian terms, the Declaration was a claim about fundamental authority rooted in a conception of nature and the globe—the relation between outer space and equatorial territory—at odds with the conception formulated by global north states in the OST. In this conception, the Declaration proclaims, “geostationary orbit is a physical fact linked to the reality of our planet because its existence depends exclusively on its relation to gravitational phenomena generated by the earth.” Perhaps this attempt to limit orbits as extensions of territory on Earth is an attempt to impose Arendt’s “geocentric” limitations onto territoriality in space. Or, an Uprising Against the Global? Although the Declaration’s legal uprising is about the global, perhaps it is not necessarily global itself. **There is a sense in which the Declaration is not inherently about the global at all but is an attempt to rupture the global as a concept that arose in the global north’s space regime and to ground questions about legal sovereignty back onto national territoriality, rather than de facto power, in domains with ambiguous arrangements of sovereignty like that under the OST’s non-appropriation principle.** Indeed, the Declaration complicates the truly “global” character of international law. It is one of several legal conflicts about space governance that fall along fault lines between how states in the global north and south conceive of limitations on territory that are either “geocentric” (linked to earth) or “anthropocentric” (commonly owned by humankind). **Even if the Declaration has no legal effect, its mere existence is one of resistance: It lodges a crack in the legitimacy of dominant regimes** that use their purportedly global character to produce the semblance of authority. **These fault lines generate alternative internationalisms, or, more bluntly, conflicting international orders**: the OST as one interpretation of the space regime shared by many nations and enforced by the global north, against regimes like the Declaration as legal orders shared by alternative coalitions of nations. In fact, discussing the Declaration and the complex history of negotiations over the governance of the deep seabed, Surabhi Ranganathan has gone so far as to argue that **a coalition of states can resist dominant international order by forming conflicting treaty regimes**.[13] The Declaration’s rupturing of the global would match with the history in which the concept of Earth as the “Blue Marble” (alternatively, “World Picture,” “Whole Earth,” “Gaia,” or “Rocketship Earth”) emerged as a “political and cultural object.”[14] There is a significant body of historical, sociological, philosophical, and anthropological scholarship pointing toward Blue Marble as exhibiting a cybernetic, colonial worldview about control over people and nature.[15] Notably, Heidegger and Arendt, against philosophers like Hans Blumenburg or Frank White, viewed the image of Earth from space as alienating.[16] More recently, Sara Pritchard describes “Black Marble”—the image of city lights on Earth at night—as a phenomenon emerging from Blue Marble. She argues that, rather than exposing global economic inequality by displaying the absence of lights in the developing world, Black Marble revives age-old imperialist perspectives of Africa as the “dark continent.”[17] This **history is particularly important to our discussion** of legal uprisings in space because the Blue Marble **concept has blatantly influenced legal conceptions of space as related to a borderless, non-appropriable, or commonly-inhabited globe rather than one defined by national territories**.[18] **In this context, the Declaration’s intervention into the OST’s legal prescription of space as a non-appropriable global domain—a regime without borders—appears all the more radical.**

#### Undoing colonial power relations between emerging and established space powers is the only way to level the playing field in outer space and Earth.

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The GSO is the orbit around the Earth's equator at an altitude of approximately 35,785 km (22,236 miles); the orbit takes twenty-four hours to complete." From this position, an orbiting satellite can "see" about one third of the planet's surface at a time." According to NASA, this altitude allows for a "broad view" that, when combined with "the ability to hover over a single equatorial location," has made the GSO very popular for communications relay and weather monitoring spacecraft." Satellites in the GSO that appear to remain stationary in the sky when viewed from the ground are called "geostationary."" This is an especially desirable position for telecommunications satellites since they can maintain a constant link with their contact point on the Earth from these parking spots."89 Satellite communications is an immensely profitable enterprise. There is a long queue for access to the GSO, comprised of "companies proposing new services (such as direct-to-home broadcast television and mobile communications for trucking or airline fleets) and representing newcomers, particularly developing countries, now entering the market for satellite services."" This queue is administered by the Space Services Department of the International Telecommunication Union (ITU) under the auspices of the UN. 91 It is no surprise, then, that the "commodification" of these vantage points in space and their relative allocation among the various countries is a point of international dispute.' Even the drawing of a boundary between the air and outer space has been controversial because the classification could potentially push the GSO into the province of air law rather than space law. Imposition of an internationally recognized, definitive boundary between air and space could cause a shift in the treaties applicable to the GSO.3 You will recall that the basic premise of space law is to promote the exploration and exploitation of outer space for the benefit of humankind, free from the normative notion of sovereignty.4 This proposition is rather different from that of air law, which (like the law of the sea) is based on the Westphalian model of sovereign nation-states. The Paris Convention of 1919 on international air law was premised on the idea that **"[p]arties recognize that every Power has complete and exclusive sovereignty over the airspace above its territory**."5 Exclusive sovereignty over airspace is now the norm, and has been codified by many countries: in 1920, for example, the United Kingdom Parliament declared, "[t]he full and absolute sovereignty and rightful jurisdiction of His Majesty extends, and has always extended, over the air."96 Similarly, in 1957 the US Congress declared that "[t]he United States Government has exclusive sovereignty of the airspace of the United States."" For our purposes, we will think of the GSO as part of space rather than the air," but some countries have already (and may again) challenge this definition and attempt to assert sovereignty over the GSO as their "territorial outer space" under international air law.9 A. **The Bogotá 8 Controversy over ownership rights and sovereignty over this finite space resource has not been entirely lacking. Up to now, the United States, Russia, and a few other developed countries have enjoyed the most "space" in the GSO."**0 The U.S. has about 339 satellites in the GSO,' six of which, for example, served DirecTV satellite television company as of 2004.'0 **During the decolonization wave of the 1970s, developing countries became cognizant that their former colonizers' use of the GSO for telecommunications could hinder their ability to access this resource in the future.** 103 Lawrence D. Roberts writes that, "[o]f even greater concern to the developing states were the uses to which communication technologies were being put. Distribution of news and other information to developing populations was perceived as former colonial powers foisting inappropriate and dangerous perceptions and values on the citizens of developing states."" **In other words, the former colonies were foreshadowing the threat to their sovereignty by Western cultural imperialism, which has now ironically become an established byproduct of globalization.**o10 By 1976, a group of eight equatorial countries led by Colombia (the "Bogotá 8") sought to secure the rights to the geostationary positions directly over their territories'0 by extending their sovereignty to "outerspace."0' The 1976 Bogotá Declaration encapsulated their aspirations, though it was difficult for the equatorial group to make their claim of sovereignty given the Outer Space Treaty's express abrogation of national sovereignty over outer space.t os A further problem was that since none of the Bogotá 8 countries were space-capable at the time, a legal violation of the Outer Space Treaty on their part would have probably prompted the space-faring countries to take advantage of the opportunity and assert their own claims of sovereign rights over other parts of space.1ta To elude this possibility, the group of eight argued for a special exception for the GSO: Reasoning that the orbital arcs above each declaring nation were fixed, the declarants argued that those arcs should not be considered a part of outer space at all, but rather should be considered a natural resource arising directly out of terrestrial gravitational phenomena. Since each nation has a right of control over its own natural resources, they argued, the portions of geostationary arc should be controlled by those nations having territory directly underneath."o As discussed earlier, commentators have long pointed to a loophole in the Outer Space Treaty caused by the lack of a clear line of demarcation between airspace and outer space. The Bogotá 8's argument that the GSO arises directly from the Earth's gravity implied that everything that lies in Earth's gravitational field is airspace and hence should not be governed by space law but rather by air law."' **This reasoning allowed the Bogota 8 to make claims of sovereignty without contravening international law, and without prompting space-capable countries to follow suit.** In the Bogota Declaration of 1976, the equatorial countries asserted that the placement of satellites in their respective portions of the GSO required "express authorization on the part of the concerned State." 1 2 The Bogota 8 restated their claims to geostationary sovereignty at the 1977 World Radio Conference held in Geneva, Switzerland, and later that same year at the UN Outer Space Legal Subcommittee.'13 In a statement by the Colombian delegate E. Gaviria, the group maintained that their proclamation of sovereignty over their respective segments of the GSO was not in conflict with the Outer Space Treaty and that this Treaty "did not take account of the interests of developing countries.", 4 During the meeting, Kenyan delegate J. Simani pointed to the need for a definition of the boundary between the air and space that was sensitive to "the special position of equatorial countries with respect to the GSO forming part of their natural resources."" Essentially, Mr. Simani argued that the GSO should be considered a part of airspace, and hence, immune from the Outer Space Treaty regime. Not surprisingly, the equatorial countries' arguments did not go over well at the Outer Space Legal Subcommittee. The Soviet delegate, Mr. B.G. Maiorski, argued that the GSO was part of outer space and that the coincidental location of the equatorial countries did not create any rights in the orbit."'6 In the end, the overwhelming consensus at the Subcommittee was that claims of sovereignty over the GSO or any other part of outer space are incompatible with the express and implied spirit of the Outer Space Treaty and should be dismissed."7 However, to deflate the situation and bring temporary resolution to the issue, the ITU agreed to set aside certain GSO "parking spaces" for future use by non-space-faring countries." **Nonetheless, the question of whether the GSO is part of outer space or the air remains unanswered.** Professor Andrej Gorbiel, who was the Polish delegate at the Outer Space Legal Subcommittee in 1977, has written that the main objective of the Outer Space Treaty was to promulgate rules to govern the activities of countries in their outer space adventures." 9 He argues: [t]his use encompasses objects launched into outer space and in particular artificial earth satellites placed in orbit around the earth. Therefore, the implementation of the [Outer Space Treaty] is possible on the assumption that its provisions concern those regions of space in which the . . . satellites are placed.12 Gorbiel concludes that to argue otherwise would deprive the Outer Space Treaty of the reason for its existence.121 In 2001, at its 44th session, UNCOPUOS agreed that "[t]he GSO, characterized by its special properties, is part of outer space."12 2 In line with our assumption that space law governs the GSO, it would seem that, thus far at least, the orbit is immunized from dissection by equatorial sovereigns. B. The Bogotá \_?123 You may question the relevance of the events of 1976 in today's rapidly changing world, but the issue of the ownership of the GSO is not likely to fade away anytime soon. While from a Western perspective the failure of the Bogotá 8 to garner support for their Declaration may appear to be in the best interest of humanity, the current system lacks an element of fairness for the developing world. **In this sense, the Bogotá Declaration may be thought of as not only a demand for sovereignty over portions of the GSO, but as a symbolic disapproval of the current "first come, first served" 24 arrangement in space, where wealthy countries disproportionately enjoy the benefits of new space technologies.**125 At present, developing countries are more reliant on telecommunications satellites than the developed world because they have limited telephone networks and less infrastructure. 6 Wealthier countries, on the other hand, have an abundance of networks that serve their robust mobile telephone and broadband Internet markets. These services are delivered mainly via less expensive low Earth orbit satellites and terrestrial networks rather than geostationary sources.127 As demand for information services increases in developing countries, the spirit of the Bogotá Declaration is likely to linger. In 1991, Colombia, the principal actor of the Bogotá 8, promulgated its new constitution. In defiance of international law, article 101 sets out the regions over which Colombia enjoys sovereignty. Paragraph 4 of the article reads: Also part of Colombia is the subsoil, the territorial sea, the contiguous zone, the continental shelf, the exclusive econ-omic zone, the airspace, the segment of the GSO, the electromagnetic spectrum and the space in which it operates, in accordance with international law or the laws of Colombia in the absence of international regulations.28 This constitutional declaration illustrates that Colombia still disputes the existence of international regulations applicable to the GSO or, that the GSO falls within the ambit of the Outer Space Treaty. This assertion enables Colombia to claim that its declaration of sovereignty over the GSO is "in accordance with international law. ,129 Arguably, it is not just developing countries that wish to acquire territorial rights in the space above their land. Despite having ratified the Outer Space Treaty in 1983,130 an "increasing number of publications by influential Chinese authors (are) advancing the principle that China's sovereignty extends through outer space," reasoning that there is still no legal line of demarcation that would prevent such an extension. 13 1 **With the continuing classification of the GSO as res extra commercium and the resulting advantage to wealthy space-faring countries, it is likely that the Bogotá 8 will grow and make a comeback** as the Bogotá \_ [blank]. Thomas Gangale argues that many "entities have contracted with [satellite] launching States to place their own satellites in the [GSO], and this number will only grow as more States develop the need for positions in the [orbit]." 32 **However, if countries must rely on a contractual relationship to benefit from satellite technology, this may exacerbate access and sovereignty issues in relation to the GSO, and may be viewed as a form of space neocolonialism.** To avoid this scenario, it is necessary to find an alternative classification for the GSO.