### 1 – Extra-T

#### 1] Interp – Affirmative’s may only Affirm that “The appropriation of outer space by private entities is unjust”. The Affirmative can only fiat a Plan that renders Appropriation unjust – anything beyond that is external to the scope of the Resolution and Extra-Topical.

#### Unjust means against the Law.

Black Laws No Date "What is Unjust?" <https://thelawdictionary.org/unjust/> //Elmer

Contrary to right and justice, or to the enjoyment of his rights by another, or to the standards of conduct furnished by the laws.

#### 2] Violation – “Establishing a Public Trust Doctrine” involves establishing a completely new governance regime that makes the Government a “trustee” over the Outer Space Environment which is beyond rendering Appropriation Unjust.

Batcheller 10, G. R., et al. "The public trust doctrine: implications for wildlife management and conservation in the United States and Canada." Technical review (2010): 10-01. (New York State Division of Fish, Wildlife and Marine Resources)//Elmer

The Public Trust Doctrine (PTD), with its origin in Roman civil law, is an essential element of North American wildlife law. The Doctrine establishes a trustee relationship of government to hold and manage wildlife, fish, and waterways for the benefit of the resources and the public. Fundamental to the concept is the notion that natural resources are deemed universally important in the lives of people, and that the public should have an opportunity to access these resources for purposes that traditionally include fishing, hunting, trapping, and travel routes (e.g., the use of rivers for navigation and commerce).

#### 1AC Babcock specifically says the Plan would give the Government the ability and obligation to “preserve resources” which is an active action.

Babcock 19 — Hope M. Babcock, Professor of Law, Georgetown University Law Center, B.A., Smith College, L.L.B., Yale University; (2019; “ARTICLE: THE PUBLIC TRUST DOCTRINE, OUTER SPACE, AND THE GLOBAL COMMONS: TIME TO CALL HOME ET”; University of Michigan Libraries, Nexis Uni; *Syracuse University Law Review*, Vol. 69; //LFS—JCM – Recutish like diff section ISEE)

[\*259] The doctrine also appears to be infinitely malleable. Original uses of the doctrine were restricted to only that "aspect of the public domain below the low-water mark on the margin of the sea and the great lakes, the waters over those lands, and the waters within rivers and streams of any consequence," 520and covered only traditional uses of those lands, like fishing and navigation. 521 Over time, the scope and application of the doctrine broadened to protect more public resources and different uses. 522 Thus, the doctrine expanded to protect new trust resources, such as dry sand beaches, inland lakes, groundwater, dry riverbeds, and wildlife, 523and passive uses of those resources, like scientific study. 524The original link to navigable water and tidelands disappeared. 525 Supporters of the [\*260] doctrine successfully advocated that it be applied to "wildlife, parks, cemeteries, and even works of fine art," 526 while arguing more recently its application to the atmosphere. 527 A doctrine that imposes a perpetual duty on the sovereign to preserve trust resources, prevents their alienation for private benefit, assures public access to them, and can be invoked by anyone seems particularly useful as a management tool in outer space. 528The fact that public access to trust resources is so central to the doctrine makes it reflective, not contradictory, of international space law's bar against appropriation of outer space and of the principle of space being the "province of all mankind." 529 It avoids the problems of alienation and exclusion associated with any of the management approaches associated with some form of private property and requires neither the creation of a new administrative authority nor the presence of a close-knit group of like-minded people. 530 Members of the public, both rich and poor, can invoke and enforce the doctrine as easily as the sovereign. 531 It is cost effective to the extent that no separate apparatus is required to implement it, and the doctrine has shown itself to be highly adaptable and innovative as different needs arise. 532 It could also fill the gap in international law with respect to managing celestial property. Therefore, of all the management approaches studied here, the PTD seems the most suited to keep order in space until a regulatory regime is imposed. However, the doctrine provides no incentives for development of trust resources; rather, it might be used to limit or curtail that development, making it an imperfect, perhaps even counter-productive solution by itself to the extent that such development might be [\*261] beneficial. 533Modifying the doctrine to allow limited use of private property management approaches, like tradable development claims, might buffer that effect - a form of overlapping hybridity between one type of property, a commons, and a management regime from another, private property, enabled by application of the PTD. Conclusion "Only a legal system that accommodates both the human need for resources and the necessary preservation of mankind's common heritage can fulfill these criteria."534 The future is now with regard to the development of outer space and its resources - it is no longer a question of whether humans will engage in these activities, but how soon they will. Technically advanced countries and private commercial enterprises are probing outer space and preparing for landing on an asteroid or the moon to extract their resources. 535Speculators are selling deeds to the moon's surface and preparing to exploit the tourism potential that space offers. 536 But, the legal framework for managing these initiatives is almost nonexistent. 537International treaties came into being before all this activity began in earnest and national laws that might apply are stunted by jurisdictional quandaries like the absence of national boundaries in outer space. 538Thus, there is an urgency to figure out how to control what happens in outer space before its resources are irreparably damaged or permanently monopolized by powerful countries and individuals. In the absence of regulation, much of the current debate centers on what property regime should be applied in outer space. 539The assumption is that by only allowing private property rights in space, countries and commercial enterprises will undertake the risks and costs of space development. 540However, unless international space law changes, it may prevent this from happening. If it changes, strong management controls will be necessary to prevent destruction or over-consumption of celestial resources, as well as monopolization and competitive behavior by participants, which could lead to hostilities and inequities. [\*262] This Article examines various private property regimes, including those of less than full fee ownership, to see if any would avoid the conflict with the international prohibition on appropriation of outer space and its resources. It concludes that none will because each retains the right to exclude and each is insensitive to the treaties' equity concerns. In contrast, considering outer space to be common is consistent with international space law in both respects. Hypothesizing that private property in outer space may yet prevail, this Article investigates different private property management approaches, such as the right of first possession, lotteries, and tradable development rights, to see if any would be cost effective, easy to implement and equitable, and would also prevent over-consumption, monopolization or the slide into rivalrous behavior. The Article concludes that each comes up short in some respect. Social norms as a management tool for property held in common, although compliant with international law, are also not up to the task. Instead, although ancient, the PTD, with its malleability, easy and cost-effective implementation and enforcement, non-consumption principle, and consistency with the goals that animate international space treaties, seems best suited to the task of protecting the public's interests in the global commons that is outer space as it has done for centuries in Earth-bound commons. But, as its principal terrestrial use has been to protect trust resources from development, the doctrine needs some modification to encourage development of celestial resources. Hence, this Article suggests that modifying the PTD to allow the application of private property management tools, like tradable development rights, will not only allow development, but also will assure that when it happens, it will not be just profitable for a few, but will also be sustainable and equitable.

#### 3] The Standard is Extra-T - it establishes a new governance regime which goes past just saying “appropriation is unjust” since it imposes an active duty of the Government to manage and take care of Outer Space Resources – that wrecks Predictability since the Aff can claim different Advantages off of the process of the PTD which exists outside the core topic question of Appropriation Good/Bad that also allows them to spike DA links by saying they don’t apply under the PTD.

#### 4] Paradigm Issues:

#### a] Topicality is Drop the Debater – it’s a fundamental baseline for debate-ability.

#### b] Use Competing Interps – 1] Topicality is a yes/no question, you can’t be reasonably topical and 2] Reasonability invites arbitrary judge intervention and a race to the bottom of questionable argumentation.

### 2 – Non-Ownership CP

#### CP Text - States should declare that public guardianship obligations created by the non-ownership doctrine necessitate a reduction in private actor appropriation of Outer Space.

#### Implementation of public trust doctrine protection will be arbitrary and capricious which ensures ecological harm. The counterplans application of non-ownership solves better and competes.

Adler 05, Dean College of Law at Utah (Robert, The Law at the Water's Edge: Limits to ""Ownership"" of Aquatic Ecosystems, in Wet Growth: Should Water Law Control Land Use?, pg. 244)

There are several other ways in which the non-ownership doctrine as applied to aquatic ecosystem resources and values differs from the existing public trust doctrine and is likely to be a superior tool to protect those resources and values. First, while some courts have endeavored to "unshackle" the public trust doctrine from its historic limits, the doctrine is, for the most part, constrained by those artificial geographic boundaries, and litigants seeking to enforce the public trust face a significant burden to overcome those presumed boundaries. The non-ownership doctrine and its implied government guardianship is defined not by artificial geographic limits but by actual determinations of the degree to which aquatic ecosystem values and services exist. Second, as explained above, the nature of the guardianship duty is a more logical model for government control of resources that cannot be owned and suggests that those resources must be protected and cannot be conveyed either for private economic gain or for public economic gain at the expense of ecological harms. Third, and most importantly, relative to the public trust doctrine the burden of proof should be flipped. Rather than requiring the government to prove that it owns or otherwise controls a resource under the public trust doctrine in order to justify protection, a landowner presumptively has no rights to impair ecosystem components, values, or services in a significant way, meaning the burden of proof is on the landowner to demonstrate ownership rights, and not vice versa. Like the public trust doctrine, of course, the "non-ownership" doctrine could suffer the fate of other efforts to develop rules of resource protection through a state-by-state and case-by-case approach, with the possibility of the same type of doctrinal fragmentation among states. For several reasons, however, the legal doctrine of "non-ownership" could avoid this common-law odyssey. First, the non-ownership doctrine was pronounced by the Court in Hughes as a matter of federal law in the context of a constitutional ruling. If the Court were to apply that same doctrine in the context of a constitutional takings challenge, it could achieve national status without the need for an uncertain crosscountry journey. While the public trust doctrine often is attributed to the Court's rulings in cases like Illinois Central and Shively v. Bowlby, in fact it had its origins in earlier state cases, and the Court has ruled that the geographic reach and other aspects of the public trust doctrine are a matter of state law. It was this perhaps unfortunate conclusion that has relegated the public trust doctrine to such an uncertain fate. Second, with due respect to the tremendous innovation and influence of the modern rejuvenation of the public trust doctrine, in addition to the inherent limitations discussed above, its application to a larger geography and a broader scope of trust resources relies heavily on a somewhat subjective, amorphous set of judgments about what advances public trust values and how those values should be balanced against other resources and values, both public and private. To be sure, application of the "non-ownership" doctrine will require sometimes difficult case by case judgments, as do virtually all efforts to protect ecological resources, whether judicial or regulatory in method. The core governing principle of non-ownership, however, is amenable to a far greater degree of uniformity. As a matter of law, once it is recognized that private-property rights do not include the right to destroy or degrade aquatic ecosystem resources, the role of government as guardian of those resources, whether through judicial or regulatory action, is less open to the type of discretion that characterizes the public trust doctrine. Under the guardianship principle, the government's role is to protect, not to choose from among a large number of potentially competing uses.

#### The counterplan and the plan are mutually exclusive – application of the public trust doctrine establishes ownership while the counterplan is explicitly non-ownership. Severance permutations should be rejected because they eliminate all counterplan net benefits and disprove desirability of the plan

Adler 05, Dean College of Law at Utah (Robert, The Law at the Water's Edge: Limits to ""Ownership"" of Aquatic Ecosystems, in Wet Growth: Should Water Law Control Land Use?, pg. 244)

4. "Non-Ownership" of Wildlife: Consequences and Implications Several legal implications flow from the realization that states do not own wildlife populations but can regulate their use under inherent police power authority. First, and most obviously, if the sovereign cannot "own" wildlife species or populations (as opposed to individual members of a species when lawfully captured or killed under relevant federal and state laws and regulations), a fortiori neither do private landowners. This corollary, of course, is entirely consistent with the traditional "capture" doctrine in wildlife law, but for different and more fundamental reasons. Under traditional principles, individuals cannot own wildlife until it is reduced to physical possession, and hence control, through lawful kill or capture. Under the non-ownership doctrine as announced in Hughes and its predecessors, wildlife in its natural state is inherently incapable of ownership. Indeed, such ownership would then be inconsistent with the state's more appropriate status as a legal guardian of wildlife resources. If the state "owned" wildlife in the sense that one can own a mineral, presumably it would have the power to deplete it entirely if it determines that it is in the state's (and society's) best economic or other interests to do so. 207 If it only has the authority to regulate and protect the resource "as between a State and its inhabitants," it does so more in the position of a legal guardian rather than as a trustee "owner" with the rights normally attendant thereto. The guardianship analogy is still imperfect, but it is superior to the public trust notion with respect to the nonhuman values inherent in wildlife and other ecosystem resources and to the extent that those natural objects are viewed as having rights of their own. As a matter of property law, a "trustee ... has title to trust property; a guardian of property does not have title to the property, but has only certain powers and duties to deal therewith for the benefit of the ward, the ward having title to the property. "208 The state as guardian cannot confer on private individuals, through its system of property law or otherwise, an ownership interest in what it is guarding. Nor can it simply dispose of that "property." ln contrast, dispositions of trust property are restricted.

### 3 – Judicial Activism DA

#### Expanding PTD shatters the entire legal-regulatory balance

Huffman 15 [James L. Huffman is Dean Emeritus of Lewis & Clark Law School and a Visiting Fellow at the Hoover Institution. He holds degrees from Montana State University (BS), The Fletcher School of Tufts University (MA) and the University of Chicago (JD). "WHY LIBERATING THE PUBLIC TRUST DOCTRINE IS BAD FOR THE PUBLIC." https://law.lclark.edu/live/files/19611-45-2huffman]

Since the beginning of the modern environmental movement in the 1960s, environmental advocates have been in search of ways to circumvent the twin obstacles of political compromise and vested property rights. In a 1970 article, Professor Joseph Sax suggested that the common law public trust doctrine might provide an avenue for judicial intervention in the name of claimed public rights in a wide array of natural resources. Because the traditional doctrine was narrowly limited in terms of both public rights and affected resources, Sax published a second article ten years later, calling for courts to liberate the public trust doctrine from its historical parameters. While a few judges responded with generally limited extensions of the doctrine, Sax’s plea has been ignored by most courts—but not by academics. A flood of law review articles have resorted to shoddy history, retrospective theorizing about the origins and purposes of the doctrine, appeals to higher law and moral imperatives, and confusion of the idea of public trust in representative government with the public rights protected by the public trust doctrine in efforts to persuade courts to liberate the doctrine. Implicit, if not explicit, in all of these arguments is the claim that the common law origins of American law and the American judicial system vest courts with authority to amend old law and make new law. At risk in this vast and imaginative effort to liberate the public trust doctrine from its common law confines are the constitutional separation of powers, the rule of law, due process and secure property rights, and the economic prosperity on which environmental protection ultimately depends.

#### Expanding PTD beyond precedent allows for unchecked judicial activism across the law – the plan applies it everywhere on earth, which ensures circumvention, authoritarianism, and shocks global rule of law

Huffman 15 [James L. Huffman is Dean Emeritus of Lewis & Clark Law School and a Visiting Fellow at the Hoover Institution. He holds degrees from Montana State University (BS), The Fletcher School of Tufts University (MA) and the University of Chicago (JD). "WHY LIBERATING THE PUBLIC TRUST DOCTRINE IS BAD FOR THE PUBLIC." https://law.lclark.edu/live/files/19611-45-2huffman]

Modern progressives, like their early twentieth century predecessors, tend to be skeptical of democratic policymaking. They prefer to rely on experts, scientific management and expeditious executive action to implement policies they know to be right and good. Democracy, the separation of powers, constitutional rights, and the rule of law all get in the way. It was early frustration with these traditional American principles that led Professor Sax to call for liberating the public trust doctrine from its historical shackles. He recognized that if courts could be persuaded to expand and extend the doctrine, environmentalists could revolutionize American property law while claiming the mantle of the rule of law. Courts would rule for environmentalist claims not because it was the right thing to do but because the law required it.

That barely a handful of courts have even acknowledged Sax’s invitation to liberate the public trust doctrine underscores that most judges, most of the time, do their best to interpret and apply the law as those affected by the law would reasonably expect them to. Most judges understand that people rely on those expectations in their interactions with others and in the risks they assume and to which they expose others. If it were otherwise, people would soon lose confidence in the courts as objective arbiters of disputes.

This does not mean that the law is stuck in the past. The common law has always evolved. But it has evolved in a way that respects rather than undermines expectations. One of the great strengths of the common law method is in “serving the rule of law by adapting legal rules to the demonstrated needs and wishes of those who rely on law to bring at least a degree of certainty to their day-to-day lives.”226

Perhaps the best indication of widespread commitment to the rule of law is that judges seduced into lawmaking of the kind urged by public trust liberationists, like the liberationists themselves, invariably appeal to precedent in seeking to justify their rulings. This does not mean that the lawmaking judges shy away from explaining the policy benefits of their decisions, but one would be hard pressed to find a case in which a court acknowledges that its new rule has no basis in preexisting law. Rather, lawmaking judges follow the path advocated by Judge Richard Posner in his commentary on the Supreme Court’s decision in Bush v. Gore.227 Posner explains that what he calls pragmatic judges should cover their lawmaking tracks by providing “legal-type judgment” as justification.228

Anyone who believes in the rule of law as a necessary principle of government in every free society should be troubled by this ends-driven, whatever-it-takes approach to judging in particular, and government in general. Even accepting, for the sake of argument, that we face a global environmental crisis as Professor Wood and many others assert,229 experience demonstrates that compromising the rule of law will harm rather than help efforts to meet any serious challenge. Saving a failing planet will require innovative thinking and creativity of the highest sort. History demonstrates that individual liberty and the rule of law are essential to such innovation and problem solving. Absent the rule of law, many a nation has failed to solve much lesser challenges.230

#### Rule of law solves war

Feldman ‘8 [Noah; September 28; Professor of Law at Harvard University School of Law; New York Times, “When Judges Make Foreign Policy,” lexis]

Why We Need More Law, More Than Ever

So what do we need the Constitution to do for us now? The answer, I think, is that the Constitution must be read to help us remember that while the war on terror continues, we are also still in the midst of a period of rapid globalization. An enduring lesson of the Bush years is the extreme difficulty and cost of doing things by ourselves. We need to build and rebuild alliances — and law has historically been one of our best tools for doing so. In our present precarious situation, it would be a terrible mistake to abandon our historic position of leadership in the global spread of the rule of law.

Our leadership matters for reasons both universal and national. Seen from the perspective of the world, the fragmentation of power after the cold war creates new dangers of disorder that need to be mitigated by the sense of regularity and predictability that only the rule of law can provide. Terrorists need to be deterred. Failed states need to be brought under the umbrella of international organizations so they can govern themselves. And economic interdependence demands coordination, so that the collapse of one does not become the collapse of all.

From a national perspective, our interest is less in the inherent value of advancing individual rights than in claiming that our allies are obligated to help us by virtue of legal commitments they have made. The Bush administration’s lawyers often insisted that law was a tool of the weak, and that therefore as a strong nation we had no need to engage it. But this notion of “lawfare” as a threat to the United States is based on a misunderstanding of the very essence of how law operates.

Law comes into being and is sustained not because the weak demand it but because it is a tool of the powerful — as it has been for the United States since World War II at least. The reason those with power prefer law to brute force is that it regularizes and legitimates the exercise of authority. It is easier and cheaper to get the compliance of weaker people or states by promising them rules and a fair hearing than by threatening them constantly with force. After all, if those wielding power really objected to the rule of law, they could abolish it, the way dictators and juntas have often done the world over.

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#### SOP decline causes global nuke war

Dr. G. John Ikenberry 15, PhD in Political Science from the University of Chicago, Albert G. Milbank Professor of Politics and International Affairs at Princeton University in the Department of Politics and the Princeton School of Public and International Affairs, “Getting Hegemony Right”, in Korean Attitudes Toward the United States: Changing Dynamics, Ed. Steinberg, p. 17-18

A critical ingredient in stabilizing international relations in a world of radical power disparities is the character of America itself. The United States is indeed a global hegemon, but because of its democratic institutions and political traditions it is--or can be--a relatively benign one. Joseph Nye's arguments on "soft power" of course come to mind here, and there is much to his point. But, in fact, there are other, more significant aspects of the American way in foreign policy that protect the United States from the consequences of its own greatness.

When other major states consider whether to work with the United States or resist it, the fact that it is an open, stable democracy matters. The outside world can see American policymaking at work and can even find opportunities to enter the process and help shape how the overall order operates. Paris, London, Berlin, Moscow, Tokyo and even Beijing--in each of these capitals officials can readily find reasons to conclude that an engagement policy toward the United States will be more effective than balancing against U.S. power.

America in large part stumbled into this open, institutionalized order in the 1940s, as it sought to rebuild the postwar world and to counter Soviet communism. In the late 1940s, in a pre-echo of today's situation, the United States was the world's dominant state--constituting 45 percent of world GNP, leading in military power, technology, finance and industry, and brimming with natural resources. But America nonetheless found itself building world order around stable and binding partnerships. Its calling card was its offer of Cold War security protection. But the intensity of political and economic cooperation between the United States and its partners went well beyond what was necessary to counter the Soviet threat. As the historian Geir Lundestad has observed, the expanding American political order in the half century after World War II was in important respects an "empire by invitation." The remarkable global reach of American postwar hegemony has been at least in part driven by the efforts of European and Asian governments to harness U.S. power, render that power more predictable, and use it to overcome their own regional insecurities. The result has been a vast system of America-centered economic and security partnerships.

Even though the United States looks like a wayward power to many around the world today, it nonetheless has an unusual ability to co-opt and reassure. Three elements matter most in making U.S. power more stable, engaged and restrained. First, America's mature political institutions organized around the rule of law have made it a relatively predictable and cooperative hegemon. The pluralistic and regularized way in which U.S. foreign and security policy is made reduces surprises and allows other states to build long-term, mutually beneficial relations. The governmental separation of powers creates a shared decision-making system that opens up the process and reduces the ability of any one leader to make abrupt or aggressive moves toward other states. An active press and competitive party system also provide a service to outside states by generating information about U.S. policy and determining its seriousness of purpose. The messiness of a democracy can, indeed, frustrate American diplomats and confuse foreign observers. But over the long term, democratic institutions produce more consistent and credible policies--policies that do not reflect the capricious and idiosyncratic whims of an autocrat.

### 4

#### We endorse the entirety of the 1AC minus their use of the term ‘Wild West’ in 1AC Babcock

#### Their invocation of a ‘Wild West’ that needs to be controlled and avoided is the same justification used to tame the ‘wild, savage native’ to justify colonialism

Deondre **Smiles**, 10/26/**20**, "The Settler Logics of (Outer) Space," No Publication, <https://www.societyandspace.org/articles/the-settler-logics-of-outer-space> //SR

‍“In reaffirming our heritage as a free nation, we must always remember that America has always been a frontier nation. Now we must embrace the next frontier. America’s Manifest Destiny in the stars…The American nation was carved out of the vast frontier by the toughest, strongest, fiercest and most determined men and women ever to walk on the face of the Earth… Our ancestors braved the unknown, tamed the wilderness, settled the Wild West…This is our glorious and magnificent inheritance. We are Americans. We are pioneers. We are the pathfinders. We settled the New World. We built the modern world.” -President Donald J. Trump, 2020 State of the Union address To most scholars, and certainly to the virtual majority of Indigenous peoples on Turtle Island, it is no secret that the country we call the United States of America was built upon the brutal subjugation of Indigenous people and Indigenous lands. Fueled by the American settler myths of terra nullius (no man’s land) and Manifest Destiny, the American settler state proceeded upon a project of cultural and physical genocide, with lasting effects that endure to the present day. The ‘settler myth’ permeates American culture. Words such as ‘pioneer’, the ‘West’, ‘Manifest Destiny’ grab the imagination as connected to the growth of the country in its early history. America sprang forth from a vast open ‘wilderness’. Of course, for Indigenous people, we know differently—these lands had complex cultural frameworks and political entities long before colonization. Words like ‘pioneer’ and ‘Manifest Destiny’, have deep meanings for us too, as they are indicative of the very real damage dealt against our cultures and nations, damage that we have had to work very hard to undo. Trump’s address raises key insights into the continuing logics of settler colonialism, as well as questions of its future trajectories. Trump’s invocation of ideas such as the ‘frontier’ and ‘taming the wilderness’ draws attention to the brutal violence that accompanied the building of the American state. Scholars such as Greg Grandin (2019) make the case that the frontier is part of what America is—whether it is the ‘Wild West’, or the U.S.-Mexican border, America is always contending with a frontier that must be defined. Language surrounding ‘frontier’ is troubling because it perpetuates the rationale of why the American settler state even exists—it could make better use of the land than Native people would, after all, they lived in wilderness. This myth tells us that what we know as the modern world was built through the hard work of European settlers; Indigenous people had nothing to offer or contribute. For someone like Mr. Trump, whose misgivings and hostility towards Native people have been historically documented, this myth fits well with his narrative as President—he is building a ‘new’ America, one that will return to its place of power and influence.

#### Language matters and overdetermines the consequences of the plan

Joelle **Renstrom**, 3-25-**2021**, "We Shouldn't Invoke Colonialist Language To Justify Missions To the Cosmos," Wire Science, <https://science.thewire.in/the-sciences/why-should-we-invoke-colonialist-language-to-justify-missions-to-the-cosmos/> //SR

Last month, NASA’s Perseverance rover landed on the surface of Mars to much fanfare, just days after probes from the UAE and China entered orbit around the Red Planet. The surge in Martian traffic symbolises major advancements in space exploration. It also presents an opportune moment to step back and consider not only what humans do in space, but how we do it – including the words we use to describe human activities in space. The conversation around the language of space exploration has already begun. NASA, for instance, has been rooting out the gendered language that has plagued America’s space program for decades. Instead of using “manned” to describe human space missions, it has shifted to using gender-neutral terms like “piloted” or “crewed.” But our scrutiny of language shouldn’t stop there. Other words and phrases, particularly those that invoke capitalism or colonialism, should receive the same treatment. To some extent, language influences the way we think and understand the world around us. A dramatic example comes from the Pirahã tribe of the Brazilian Amazon, whose language contains very few terms for describing numbers or time. A capitalist culture in which time equals money likely wouldn’t make sense to them. Similarly, language likely affects humans’ thoughts and beliefs about outer space. The words scientists and writers use to describe space exploration may influence who feels included in these endeavours – both as direct participants and as benefactors — and alter the way people interact with the cosmos. Take, for example, John F. Kennedy’s 1962 Moon Speech, in which he three times used the words “conquer” and “conquest.” While Kennedy’s rhetoric was intended to bolster U.S. morale in the space race against the USSR, the view of outer space as a venue for conquest evokes subjugation and exploitation and exemplifies an attitude that has resulted in much destruction on Earth. By definition, conquering involves an assertion of power and mastery, often through violence. Similarly, former President Donald Trump is the most recent American president to use the term “Manifest Destiny” to describe his motives for exploring space, tapping into a philosophy that suggests humanity’s grand purpose is to expand and conquer, regardless of who or what stands in the way. In a recent white paper, a group comprising subject-matter experts at NASA and other institutions warned of the hazards of invoking colonial language and practice in space exploration. “The language we use around exploration can really lead or detract from who gets involved and why they get involved,” Natalie B. Treviño, one of the paper’s coauthors, told me. Treviño, who researched decolonial theory and space exploration for her PhD at Western University in Canada, is a member of an equity, diversity and inclusion working group that makes equity-related recommendations in the planetary science research community. She notes that certain words and phrases can be particularly alienating for Indigenous people. “How is an Indigenous child on a reserve in North America supposed to connect with space exploration if the language is the same language that led to the genocide of his people?”

### Case

#### Debris:

#### 1] No Kessler

Drmola and Hubik 18 [Jakub Drmola, Division of Security and Strategic Studies, Department of Political Science at the Faculty of Social Sciences of Masaryk University. Tomas Hubik, Department of Theoretical Computer Science and Mathematical Logic, Faculty of Mathematics and Physics, Charles University. Kessler Syndrome: System Dynamics Model. Space Policy Volumes 44–45, August 2018, Pages 29-39. https://www.sciencedirect.com/science/article/pii/S0265964617300966?via%3Dihub]

The baseline scenario represents a continuation of the current trends, which are simply extended into the future. An average 1% growth rate of yearly launches of new satellites (starting at 89) is assumed, together with constant success rate in satellites’ ability to actively avoid collisions with debris and other satellites, constant lifetime, and failure rate. This basic model lacks any sudden events or major policy changes that would markedly influence the debris propagation. However, it serves both as a foundation for all the following scenarios and as a basis of comparison to see what the impact would be. Given high uncertainty regarding future state of the satellite industry (how many satellites will be launched per year, of what type and size, etc.), we elected to limit our simulations to 50 years. The model can certainly continue beyond this point, but the associated unknowns make the simulations progressively less useful. Running this model for its full 50 years (2016–2066) yields the expected result of perpetually growing amount of debris in the LEO. One can observe nearly 2-fold increase in the large debris (over 10 cm) and 3-fold increase in small debris (less than 1 cm) quantities (Fig. 5). The oscillations visible in the graph are caused by the aforementioned solar cycles which influence the rate of reentry for all simulated populations except the still active (i.e. powered) satellites. Also please note that throughout the article, the graphs use quite different scales for debris populations because of the considerable variations between scenarios. Using any single scale for all graphs would render some of them unintelligible. We can see that this increase in numbers still does not result in realization of the Kessler syndrome as most of the satellites being launched remain intact for their full expected service life. However, it comes with a considerable increase in risk to satellites, which is manifested by their higher yearly losses, making satellites operations riskier and more expensive for governments and private companies alike. This increased amount of debris in LEO combined with the larger number of active satellites makes it approximately twice as likely that an active satellite will suffer a disabling hit or a total disintegration during its lifetime. It should be noted that this risk might possibly be offset by future improvements in satellite reliability, debris tracking, and navigation [17].

#### No Escalation over Satellites:

#### 1] Planning Priorities

Bowen 18 Bleddyn Bowen 2-20-2018 “The Art of Space Deterrence” <https://www.europeanleadershipnetwork.org/commentary/the-art-of-space-deterrence/> (Lecturer in International Relations at the University of Leicester)//Elmer

Space is often an afterthought or a miscellaneous ancillary in the grand strategic views of top-level decision-makers. A president may not care that one satellite may be lost or go dark; it may cause panic and Twitter-based hysteria for the space community, of course. But the terrestrial context and consequences, as well as the political stakes and symbolism of any exchange of hostilities in space matters more. The political and media dimension can magnify or minimise the perceived consequences of losing specific satellites out of all proportion to their actual strategic effect.

#### 2] Military Precedent

Zarybnisky 18, Eric J. Celestial Deterrence: Deterring Aggression in the Global Commons of Space. Naval War College Newport United States, 2018. (Senior Materiel Leader at United States Air Force)//Elmer

PREVENTING AGGRESSION IN SPACE While deterrence and the Cold War are strongly linked in the public’s mind through the nuclear standoff between the United States and the Soviet Union, the fundamentals of deterrence date back millennia and deterrence remains relevant. Thucydides alludes to the concept of deterrence in his telling of the Peloponnesian War when he describes rivals seeking advantages, such as recruiting allies, to dissuade an adversary from starting or expanding a conflict.6F 6 Aggression in space was successfully avoided during the Cold War because both sides viewed an attack on military satellites as highly escalatory, and such an action would likely result in general nuclear war.7F 7 In today’s more nuanced world, attacking satellites, including military satellites, does not necessarily result in nuclear war. For instance, foreign countries have used highpowered lasers against American intelligence-gathering satellites8F 8 and the United States has been reluctant to respond, let alone retaliate with nuclear weapons. This shift in policy is a result of the broader use of gray zone operations, to which countries struggle to respond while limiting escalation. Beginning with the fundamentals of deterrence illuminates how it applies to prevention of aggression in space.

#### 3] Collision risk is very small

Fange 17 Daniel Von Fange 17, Web Application Engineer, Founder and Owner of LeanCoder, Full Stack, Polyglot Web Developer, “Kessler Syndrome is Over Hyped”, 5/21/2017, http://braino.org/essays/kessler\_syndrome\_is\_over\_hyped/

The orbital area around earth can be broken down into four regions. Low LEO - Up to about 400km. Things that orbit here burn up in the earth’s atmosphere quickly - between a few months to two years. The space station operates at the high end of this range. It loses about a kilometer of altitude a month and if not pushed higher every few months, would soon burn up. For all practical purposes, Low LEO doesn’t matter for Kessler Syndrome. If Low LEO was ever full of space junk, we’d just wait a year and a half, and the problem would be over. High LEO - 400km to 2000km. This where most heavy satellites and most space junk orbits. The air is thin enough here that satellites only go down slowly, and they have a much farther distance to fall. It can take 50 years for stuff here to get down. This is where Kessler Syndrome could be an issue. Mid Orbit - GPS satellites and other navigation satellites travel here in lonely, long lives. The volume of space is so huge, and the number of satellites so few, that we don’t need to worry about Kessler here. GEO - If you put a satellite far enough out from earth, the speed that the satellite travels around the earth will match the speed of the surface of the earth rotating under it. From the ground, the satellite will appear to hang motionless. Usually the geostationary orbit is used by big weather satellites and big TV broadcasting satellites. (This apparent motionlessness is why satellite TV dishes can be mounted pointing in a fixed direction. You can find approximate south just by looking around at the dishes in your northern hemisphere neighborhood.) For Kessler purposes, GEO orbit is roughly a ring 384,400 km around. However, all the satellites here are moving the same direction at the same speed - debris doesn’t get free velocity from the speed of the satellites. Also, it’s quite expensive to get a satellite here, and so there aren’t many, only about one satellite per 1000km of the ring. Kessler is not a problem here. How bad could Kessler Syndrome in High LEO be? Let’s imagine a worst case scenario. An evil alien intelligence chops up everything in High LEO, turning it into 1cm cubes of death orbiting at 1000km, spread as evenly across the surface of this sphere as orbital mechanics would allow. Is humanity cut off from space? I’m guessing the world has launched about 10,000 tons of satellites total. For guessing purposes, I’ll assume 2,500 tons of satellites and junk currently in High LEO. If satellites are made of aluminum, with a density of 2.70 g/cm3, then that’s 839,985,870 1cm cubes. A sphere for an orbit of 1,000km has a surface area of 682,752,000 square KM. So there would be one cube of junk per .81 square KM. If a rocket traveled through that, its odds of hitting that cube are tiny - less than 1 in 10,000.

#### 4] Active debris removal coming now – solves debris

Chow 18 [Brian G. - PhD in physics from Case Western Reserve University, “Space Arms Control: A Hybrid Approach,” p. 115, *Strategic Studies Quarterly*, Volume 12, Number 2, JSTOR]

There are three reasons the United States **should not attempt to ban debris removal** and servicing spacecraft to deal with space stalking threat. First, ADR spacecraft are necessary in the emerging era **to prevent the space debris population from increasing and hindering the peaceful uses of space.** Also, as space technologies continue to become more capable and less expensive, it is highly advantageous to have some satellite services performed in space. Second, as noted earlier, China will likely deploy both ADR and OOS spacecraft in the early 2020s and Russia is likely to follow suit in the 2020s. Even if the United States wanted to delay ADR and OOS deployment for the benefit of preventing space stalker threat, it could not dissuade China and Russia from such a deployment. Third, and most importantly, there is a way to both deter and defend against space stalkers and still be able to benefit from the presence of ADR and OOS spacecraft.

#### 5] Uncertainty from debris collisions creates restraint not instability.

MacDonald 16, B., et al. "Crisis stability in space: China and other challenges." Foreign Policy Institute. Washington, DC (2016). (senior director of the Nonproliferation and Arms Control Project with the Center for Conflict Analysis and Prevention)//Elmer

In any crisis that threatens to escalate into major power conflict, political and military leaders will face uncertainty about the effectiveness of their plans and decisions. This uncertainty will be compounded when potential conflict extends to the space and cyber domains, where weapon effectiveness is largely untested and uncertain, infrastructure interdependencies are unclear, and damaging an adversary could also harm oneself or one’s allies. Unless the stakes become very high, no country will likely want to gamble its well-being in a “single cosmic throw of the dice,” in Harold Brown’s memorable phrase. 96 The novelty of space and cyber warfare, coupled with risk aversion and worst-case assessments, could lead space adversaries into a situation of what can be called “hysteresis,” where each adversary is restrained by its own uncertainty of success. This is conceptually shown in Figures 1 and 2 for offensive counter-space capabilities, though it applies more generally. 97 These graphs portray the hypothetical differences between perceived and actual performance capabilities of offensive counter-space weapons, on a scale from zero to one hundred percent effectiveness. Where uncertainty and risk aversion are absent for two adversaries, no difference would exist between the likely performance of their offensive counter-space assets and their confidence in the performance of those weapons: a simple, straight-line correlation would exist, as in Figure 1. The more interesting, and more realistic, case is notionally presented in Figure 2, which assumes for simplicity that the offensive capabilities of each adversary are comparable. In stark contrast to the case of Figure 1, uncertainty and risk aversion are present and become important factors. Given the high stakes involved in a possible large-scale attack against adversary space assets, a cautious adversary is more likely to be conservative in estimating the effectiveness of its offensive capabilities, while more generously assessing the capabilities of its adversary. Thus, if both side’s weapons were 50% effective and each side had a similar level of risk aversion, each may conservatively assess its own capabilities to be 30% effective and its adversary’s weapons to be 70% effective. Likewise, if each side’s weapons were 25% effective in reality, each would estimate its own capabilities to be less than 25% effective and its adversary’s to be more than 25% effective, and so on. In Figure 2, this difference appears, in oversimplified fashion, as a gap that represents the realistic worry that a country’s own weapons will under-perform while its adversary’s weapons will over-perform in terms of effectiveness. If both countries face comparable uncertainty and exhibit comparable risk aversion, each may be deterred from initiating an attack by its unwillingness to accept the necessary risks. This gap could represent an “island of stability,” as shown in Figure 2. In essence, given the enormous stakes involved in a major strike against the adversary’s space assets, a potential attacker will likely demonstrate some risk aversion, possessing less confidence in an attack’s effectiveness. It is uncertain how robust this hysteresis may prove to be, but the phenomenon may provide at least some stabilizing influence in a crisis. In the nuclear domain, the immediate, direct consequences of military use, including blast, fire, and direct radiation effects, were appreciated at the outset. Nonetheless, significant uncertainty and under-appreciation persisted with regard to the collateral, indirect, and climatological effects of using such weapons on a large scale. In contrast, the immediate, direct effects of major space conflict are not well understood, and potential indirect and interdependent effects are even less understood. Indirect effects of large-scale space and cyber warfare would be virtually impossible to confidently calculate, as the infrastructures such warfare would affect are constantly changing in design and technology. Added to this is a likely anxiety that if an attack were less successful than planned, a highly aggrieved and powerful adversary could retaliate in unanticipated ways, possibly with highly destructive consequences. As a result, two adversaries facing potential conflict may lack confidence both in the potential effectiveness of their own attacks and in the ineffectiveness of any subsequent retaliation. Such mutual uncertainty would ultimately be stabilizing, though probably not particularly robust. This is reflected in Figure 2, where each side shows more caution than the technical effectiveness of its systems may suggest. Each curve notionally represents one state’s confidence in its offensive counter-space effectiveness relative to their actual effectiveness. Until true space asset resilience becomes a trusted feature of space architectures, deterrence by risk aversion, and cross-domain deterrence, may be the only means for deterrence to function in space.

#### I’ll turn their mining adv. Commercial mining solves extinction from scarcity, climate, terror, war, and disease. Private companies key.

Pelton 17—(Director Emeritus of the Space and Advanced Communications Research Institute at George Washington University, PHD in IR from Georgetown).. Pelton, Joseph N. 2017. The New Gold Rush: The Riches of Space Beckon! Springer. Accessed 8/30/19.

Are We Humans Doomed to Extinction? What will we do when Earth’s resources are used up by humanity? The world is now hugely over populated, with billions and billions crammed into our overcrowded cities. By 2050, we may be 9 billion strong, and by 2100 well over 11 billion people on Planet Earth. Some at the United Nations say we might even be an amazing 12 billion crawling around this small globe. And over 80 % of us will be living in congested cities. These cities will be ever more vulnerable to terrorist attack, natural disaster, and other plights that come with overcrowding and a dearth of jobs that will be fueled by rapid automation and the rise of artifi cial intelligence across the global economy. We are already rapidly running out of water and minerals. Climate change is threatening our very existence. Political leaders and even the Pope have cautioned us against inaction. Perhaps the naysayers are right. All humanity is at tremendous risk. Is there no hope for the future? This book is about hope. We think that there is literally heavenly hope for humanity. But we are not talking here about divine intervention. We are envisioning a new space economy that recognizes that there is more water in the skies that all our oceans. Th ere is a new wealth of natural resources and clean energy in the reaches of outer space—more than most of us could ever dream possible. There are those that say why waste money on outer space when we have severe problems here at home? Going into space is not a waste of money. It is our future. It is our hope for new jobs and resources. The great challenge of our times is to reverse public thinking to see space not as a resource drain but as the doorway to opportunity. The new space frontier can literally open up a “gold rush in the skies.” In brief, we think there is new hope for humanity. We see a new a pathway to the future via new ventures in space. For too long, space programs have been seen as a money pit. In the process, we have overlooked the great abundance available to us in the skies above. It is important to recognize there is already the beginning of a new gold rush in space—a pathway to astral abundance. “New Space” is a term increasingly used to describe radical new commercial space initiatives—many of which have come from Silicon Valley and often with backing from the group of entrepreneurs known popularly as the “space billionaires.” New space is revolutionizing the space industry with lower cost space transportation and space systems that represent significant cost savings and new technological breakthroughs. “New Commercial Space” and the “New Space Economy” represent more than a new way of looking at outer space. These new pathways to the stars could prove vital to human survival. If one does not believe in spending money to probe the mysteries of the universe then perhaps we can try what might be called “calibrated greed” on for size. One only needs to go to a cubesat workshop, or to Silicon Valley or one of many conferences like the “Disrupt Space” event in Bremen, Germany, held in April 2016 to recognize that entrepreneurial New Space initiatives are changing everything [ 1 ]. In fact, the very nature and dimensions of what outer space activities are today have changed forever. It is no longer your grandfather’s concept of outer space that was once dominated by the big national space agencies. The entrepreneurs are taking over. The hopeful statements in this book and the hard economic and technical data that backs them up are more than a minority opinion. It is a topic of growing interest at the World Economic Forum, where business and political heavyweights meet in Davos, Switzerland, to discuss how to stimulate new patterns of global economic growth. It is even the growing view of a group that call themselves “space ethicists.” Here is how Christopher J. Newman, at the University of Sunderland in the United Kingdom has put it: Space ethicists have offered the view that space exploration is not only desirable; it is a duty that we, as a species, must undertake in order to secure the survival of humanity over the longer term. Expanding both the resource base and, eventually, the habitats available for humanity means that any expenditure on space exploration, far from being viewed as frivolous, can legitimately be rationalized as an ethical investment choice. (Newman) On the other hand there are space ethicists and space exobiologists who argue that humans have created ecological ruin on the planet—and now space debris is starting to pollute space. Th ese countervailing thoughts by the “no growth” camp of space ethicists say we have no right to colonize other planets or to mine the Moon and asteroids—or at least no right to do so until we can prove we can sustain life here on Earth for the longer term. However, for most who are planning for the new space economy the opinion of space philosophers doesn’t really fl oat their boat. Legislators, bankers, and aspiring space entrepreneurs are far more interested in the views of the super-rich capitalists called the space billionaires. A number of these billionaires and space executives have already put some very serious money into enterprises intent on creating a new pathway to the stars. No less than five billionaires with established space ventures—Elon Musk, Paul Allen, Jeff Bezos, Sir Richard Branson, and Robert Bigelow—have invested millions if not billions of dollars into commercializing space. They are developing new technologies and establishing space enterprises that can bring the wealth of outer space down to Earth. This is not a pipe dream, but will increasingly be the economic reality of the 2020s. These wealthy space entrepreneurs see major new economic opportunities. To them space represents the last great frontier for enterprising pioneers. Th us they see an ever-expanding space frontier that offers opportunities in low-cost space transportation, satellite solar power satellites to produce clean energy 24h a day, space mining, space manufacturing and production, and eventually space habitats and colonies as a trajectory to a better human future. Some even more visionary thinkers envision the possibility of terraforming Mars, or creating new structures in space to protect our planet from cosmic hazards and even raising Earth’s orbit to escape the rising heat levels of the Sun in millennia to come. Some, of course, will say this is sci-fi hogwash. It can’t be done. We say that this is what people would have said in 1900 about airplanes, rocket ships, cell phones and nuclear devices. The skeptics laughed at Columbus and his plan to sail across the oceans to discover new worlds. When Thomas Jefferson bought the Louisiana Purchase from France or Seward bought Alaska, there were plenty of naysayers that said such investment in the unknown was an extravagant waste of money. A healthy skepticism is useful and can play a role in economic and business success. Before one dismisses the idea of an impending major new space economy and a new gold rush, it might useful to see what has already transpired in space development in just the past five decades. The world’s first geosynchronous communications satellite had a throughput capability of about 500 kb / s. In contrast, today’s state of the art Viasat 2 —a half century later— has an impressive throughput of some 140 Gb/s. Th is means that the relative throughput is nearly 300,000 greater, while its lifetime is some ten times longer (Figs. 1.1 and 1.2 ). Each new generation of communications satellite has had more power, better antenna systems, improved pointing and stabilization, and an extended lifetime. And the capabilities represented by remote sensing satellites , meteorological satellites , and navigation and timing satellites have also expanded their capabilities and performance in an impressive manner. When satellite applications first started, the market was measured in millions of dollars. Today commercial satellite services exceed a quarter of a billion dollars. Vital services such as the Internet, aircraft traffi c control and management, international banking, search and rescue and much, much more depend on application satellites. Th ose that would doubt the importance of satellites to the global economy might wish to view on You Tube the video “If Th ere Were a Day Without Satellites?” [ 2 ]. Let’s check in on what some of those very rich and smart guys think about the new space economy and its potential. (We are sorry to say that so far there are no female space billionaires, but surely this, too, will come someday soon.) Of course this twenty-fi rst century breakthrough that we call the New Space economy will not come just from new space commerce. It will also come from the amazing new technologies here on Earth. Vital new terrestrial technologies will accompany this cosmic journey into tomorrow. Information technology, robotics, artificial intelligence and commercial space travel systems have now set us on a course to allow us humans to harvest the amazing riches in the skies—new natural resources, new energy, and even totally new ways of looking at the purpose of human existence. If we pursue this course steadfastly, it can be the beginning of a New Space renaissance. But if we don’t seek to realize our ultimate destiny in space, Homo sapiens can end up in the dustbin of history—just like literally millions of already failed species. In each and every one of the five mass extinction events that have occurred over the last 1.5 billion years on Earth, some 50–80 % of all species have gone the way of the T. Rex, the woolly mammoth, and the Dodo bird along with extinct ferns, grasses and cacti. On the other hand, the best days of the human race could be just beginning. If we are smart about how we go about discovering and using these riches in the skies and applying the best of our new technologies, it could be the start of a new beginning for humanity. Konstantin Tsiokovsky, the Russian astronautics pioneer, who fi rst conceived of practical designs for spaceships, famously said: “A planet is the cradle of mankind, but one cannot live in a cradle forever.” Well before Tsiokovsky another genius, Leonardo da Vinci, said, quite poetically: “Once you have tasted flight, you will forever walk the earth with your eyes turned skyward, for there you have been, and there you will always long to return.” The founder of the X-Prize and of Planetary Resources, Inc., Dr. Peter Diamandis, has much more brashly said much the same thing in quite diff erent words when he said: “The meek shall inherit the Earth. The rest of us will go to Mars.” The New Space Billionaires Peter Diamandis is not alone in his thinking. From the list of “visionaries” quoted earlier, Elon Musk, the founder of SpaceX; Sir Richard Branson, the founder of Virgin Galactic; and Paul Allen, the co-founder of Microsoft and the man who financed SpaceShipOne, the world’s first successful spaceplane have all said the future will include a vibrant new space economy. Th ey, and others, have said that we can, we should and we soon shall go into space and realize the bounty that it can offer to us. Th e New Space enterprise is today indeed being led by those so-called space billionaires , who have an exciting vision of the future. They and others in the commercial space economy believe that the exploitation of outer space may open up a new golden age of astral abundance. They see outer space as a new frontier that can be a great source of new materials, energy and various forms of new wealth that might even save us from excesses of the past. Th is gold rush in the skies represents a new beginning. We are not talking about expensive new space ventures funded by NASA or other space agencies in Europe, Japan, China or India. No, these eff orts which we and others call New Space are today being forged by imaginative and resourceful commercial entrepreneurs. Th ese twenty-fi rst century visionaries have the fortitude and zeal to look to the abundance above. New breakthroughs in technology and New Space enterprises may be able to create an “astral life raft” for humanity. Just as Columbus and the Vikings had the imaginative drive that led them to discover the riches of a new world, we now have a cadre of space billionaires that are now leading us into this New Space era of tomorrow. These bold leaders, such as Paul Allen and Sir Richard Branson, plus other space entrepreneurs including Jeff Bezos of Amazon and Blue Origin, and Robert Bigelow, Chairman of Budget Suites and Bigelow Aerospace, not only dream of their future in the space industry but also have billions of dollars in assets. These are the bright stars of an entirely new industry that are leading us into the age of New Space commerce. These space billionaires, each in their own way, are proponents of a new age of astral abundance. Each of them is launching new commercial space industries. They are literally transforming our vision of tomorrow. These new types of entrepreneurial aerospace companies—the New Space enterprises—give new hope and new promise of transforming our world as we know it today. The New Space Frontier What happens in space in the next few decades, plus corresponding new information technologies and advanced robotics, will change our world forever. These changes will redefi ne wealth, change our views of work and employment and upend almost everything we think we know about economics, wealth, jobs, and politics. Th ese changes are about truly disruptive technologies of the most fundamental kinds. If you thought the Internet, smart phones, and spandex were disruptive technologies, just hang on. You have not seen anything yet. In short, if you want to understand a transition more fundamental than the changes brought to the twentieth century world by computers, communications and the Internet, then read this book. There are truly riches in the skies. Near-Earth asteroids largely composed of platinum and rare earth metals have an incredible value. Helium-3 isotopes accessible in outer space could provide clean and abundant energy. There is far more water in outer space than is in our oceans. In the pages that follow we will explain the potential for a cosmic shift in our global economy, our ecology, and our commercial and legal systems. These can take place by the end of this century. And if these changes do not take place we will be in trouble. Our conventional petro-chemical energy systems will fail us economically and eventually blanket us with a hydrocarbon haze of smog that will threaten our health and our very survival. Our rare precious metals that we need for modern electronic appliances will skyrocket in price, and the struggle between “haves” and “have nots” will grow increasingly ugly. A lack of affordable and readily available water, natural resources, food, health care and medical supplies, plus systematic threats to urban security and systemic warfare are the alternatives to astral abundance. The choices between astral abundance and a downward spiral in global standards of living are stark. Within the next few decades these problems will be increasingly real. By then the world may almost be begging for new, out of- the-box thinking. International peace and security will be an indispensable prerequisite for exploitation of astral abundance, as will good government for all. No one nation can be rich and secure when everyone else is poor and insecure. In short, global space security and strategic space defense, mediated by global space agreements, are part of this new pathway to the future.

#### Their own manufacturing 20 evidence says that PRIVATE COMPANIES are the ones mining REMs—doing the aff stops that which turns their scenario.

#### Impey has no warrant- it says that companies will compete- but nowhere does it say escalation. We say competition is good to foster innovation. Crossapply our defense to space escalation here.

#### Turn- they haven’t defined what public trust is- if Russia decided that letting their companies do whatever they want was good for the common good, they could do that under the aff which would cause much more backlash, instability, and war.

#### Russia and China say no, or the plan gets watered down.

**Bahney and Pearl 19** [Benjamin Bahney and Jonathan Pearl, 3-26-2019, "Why Creating a Space Force Changes Nothing," BENJAMIN BAHNEY and JONATHAN PEARL are Senior Fellows at the Lawrence Livermore National Laboratory’s Center for Global Security Research and contributing authors to [Cross Domain Deterrence: Strategy in an Era of Complexity](https://archive.md/o/Hlbi1/https:/www.amazon.com/Cross-Domain-Deterrence-Strategy-Era-Complexity/dp/0190908653). Foreign Affairs, [https://www.foreignaffairs.com/articles/space/2019-03-26/why-creating-space-force-changes-nothing accessed 12/10/21](https://www.foreignaffairs.com/articles/space/2019-03-26/why-creating-space-force-changes-nothing%20accessed%2012/10/21)] Adam

As Russia and China continue to push forward, U.S. policymakers may be tempted to use treaties and diplomacy to head off their efforts entirely. This option, although alluring on paper, is simply not feasible. Existing treaties designed to limit military competition in space have had little success in actually doing so. The 1967 Outer Space Treaty bans parties from placing nuclear weapons or other weapons of mass destruction in space, on the moon, or on other celestial bodies, but it has no formal mechanism for verifying compliance, and places no restrictions on the development or deployment in space of conventional antisatellite weapons. Even if it were possible to convince Moscow and Beijing of the benefits of comprehensive space arms control, existing technology makes it extremely difficult to verify compliance with the necessary treaty provisions—and without comprehensive and reliable verification, treaties are toothless. Moreover, regulating the development and deployment of antisatellite weapons is extremely difficult, both because they include such a broad and diverse range of technologies and because many types of antisatellite weapons can be concealed or explained away as having some other use. Unsurprisingly, Russia and China’s draft Treaty on the Prevention of Placement of Weapons in Space, which they have been pushing for several years now, has an unenforceable definition of what constitutes a “weapon” and does nothing at all to address ground-based antisatellite weapons development.

#### Circumvention – there’s 0 enforcement mechanisms – treaty rulings aren’t binding, lack of uniformity, UNCOPUOS inefficiency

Christina **Isnardi**, Articles Editor for the Columbia Journal of Transnational Law and a founding member of the Columbia Air & Space Law Association, 4/2/**20**, "Problems with Enforcing International Space Law on Private Actors — Columbia Journal of Transnational Law," Columbia Journal of Transnational Law, <https://www.jtl.columbia.edu/journal-articles/problems-with-enforcing-international-space-law-on-private-actors>

Even if private actors did fall under the purview of international space law, international space law has inadequate enforcement mechanisms to actually implement these laws. Much like how the treaties generally were intended to outline a framework for the rights and obligations of States Parties specifically, the enforcement mechanisms of these treaties also intend that states be the only entities allowed to submit or defend claims. The five international space treaties for the most part lack any sort of dispute resolution organ at all. The two treaties that do have these organs are riddled with inadequacies that allow private actors to avoid being subject to these dispute resolution frameworks. Part B.1 discusses the dispute resolution framework within the international space law treaties themselves. Part B.2 analyzes the regulatory enforcement mechanisms established outside the treaties, with a focus on UNCOPUOS and other key intergovernmental organizations. Part B.3 evaluates the adjudicative and arbitral enforcement mechanisms that exist outside of the treaties, with a particular focus on the Permanent Court of Arbitration and the adjudicative capabilities of key intergovernmental organizations. Finally, Part B.4 focuses on domestic space law and its enforcement capabilities upon private actors. 1. Enforcement Infrastructure within the Space Treaties Only two of the five treaties explicitly list enforcement authorities provided for by the treaty: the Liability Convention and the Registration Convention. The remaining three treaties (the Outer Space Treaty, the Rescue Convention, and the Moon Agreement) provide that states retain legal authority over persons and objects launched into space from their territory and provide jurisdiction to the respective states.135 It is the responsibility of the states to provide courts or tribunals to adjudicate any matters that arise from violations of these treaties. The Liability Convention and the Registration Convention’s enforcement capabilities, or their lack thereof, are described in turn below. a. The Liability Convention’s Claims Commission The Liability Convention’s Claims Commission provides for the only outer-space specific means of alternative dispute resolution.136 Articles IX through XX establish the dispute settlement system. The system mandates a diplomatic stage before providing for an arbitration stage before the Claims Commission, which is the body that makes decisions regarding the merits of the claim and the compensation awarded.137 Since the Convention entered into force in 1972, this conflict resolution procedure has only been invoked once (in the Soviet Cosmos 954 crash, explained supra). This case was resolved in the mandatory diplomatic phase, so the Claims Commission has yet to preside over any conflicts.138 However, even if the Claims Commission does have the opportunity to hear claims, the conflict resolution system is inhibited by major shortcomings. First, the Convention does not provide the Claims Commission with the same authority of a judicial court.139 One effect of this quasi-judicial structure is that the Commission’s decisions are not binding unless both parties have agreed otherwise.140 Without such an agreement, the decision is only advisory.141 This allows the launching state that is hostile to the victim state a simple way to avoid repercussions for injuries caused by its space object.142 Second, the dispute resolution system provided in the Convention only allows for the participation of states.143 Consequently, the dispute resolution framework has been “highly criticized and rendered useless”144 as it provides no direct enforcement authority over private actors. b. The Registration Convention’s International Registry The Registration Convention does provide some international involvement in enforcement, but it is not nearly as robust as in the Liability Convention. The Registration Convention requires that “[t]he Secretary-General of the United Nations . . . maintain[s] a Register in which the information furnished [by the launching States] shall be recorded.”145 However, this register is compiled based on records provided by states, so state involvement in enforcement is crucial to this international registry. The ability to enforce the provisions of the Registration Convention on a private actor is therefore only as strong as the enforcement efforts of the state that holds jurisdiction over that private actor. Even if these state enforcement efforts were strong, only sixty-four states have ratified the Registration Convention (as of December 2017), making it the second least ratified treaty of the space treaties.146 Because this Convention has not solidified its regulations into customary international law, its lack of widespread ratification undoubtedly reduces the ability to enforce its provisions even if it had the requisite enforcement mechanisms. Looking at all of the international space treaties collectively, there is a notable absence of regulatory and licensing provisions that states must follow to enforce law domestically. As the Outer Space Treaty requires that states retain responsibility over all activity launched from their state, it is peculiar that the treaty does not explicitly designate how states should authorize and supervise these activities.147 Allowing states to take complete control over the manner in which they authorize and supervise the launch of space activities has allowed a wide range of enforcement levels between states. For instance, some states issue a single license for all space activities while other states issue a single license for only specific space activities.148 National laws regarding the scope of jurisdiction have also varied across states. Some states assert jurisdiction over where an object is launched, while other states assert jurisdiction over the nationality of the private actor that launched the space object.149 This lack of uniformity in national space law may incentivize private actors to choose a state to launch their space objects from based on the enforcement policies that are most beneficial to it. 2. Regulatory Enforcement Capabilities of UNCOPUOS and Other Intergovernmental Bodies Outside of the flawed enforcement mechanisms drafted in the Liability Convention and the Registration Convention, the U.N. intergovernmental body that oversees them, UNCOPUOS, may be seen to bring private actors in conformity with international space law. However, UNCOPUOS lacks true enforcement abilities, described in Part II.B.2.a below. Also, other international organizations that are involved in the regulation of space activities, namely the World Trade Organization (“WTO”), the International Telecommunication Union (“ITU”), the World Intellectual Property Organization (“WIPO”), the U.N. Educational, Scientific and Cultural Organization (“UNESCO”), and the International Institute for the Unification of Private Law (“UNIDROIT”), provide only marginally stronger enforcement over specific space activity matters and provide little assistance in regulating private actors specifically.150 a. UNCOPUOS Since its establishment in 1959, UNCOPUOS remains the only committee of the General Assembly that deals exclusively with “international cooperation in the peaceful uses of outer space” and with “monitor[ing] . . . developments related to the exploration of outer space.”151 The Committee has ninety-two members, making it one of the largest Committees in the United Nations.152 It consists of two subcommittees: the Scientific and Technical Subcommittee (“STSC”) and the Legal Subcommittee.153 The STSC meets every year for two weeks to discuss issues concerning the scientific and technical aspects of space activities.154 The Legal Subcommittee also meets every year for two weeks, but to discuss legal issues concerning the same topic.155 UNCOPUOS is overseen by a bureau that consists of five offices: Chair, Vice-Chair, Rapporteur, Chair of the STSC, and Chair of the Legal Subcommittee.156 While this infrastructure may be seen as robust, it has little legal effect. UNCOPUOS works to (1) encourage more countries to accede to the five space treaties and (2) encourage more members of the five treaties to implement the treaties’ obligations through national space law. As such, the only way in which UNCOPUOS can enforce the provisions of space treaties that do not possess internal enforcement authorities is to conduct “diplomatic maneuvering.”157 To encourage more countries to accede to the treaties, UNCOPUOS formed a working group in 2012 that established a report to strengthen international mechanisms for cooperation with international space law.158 To encourage national legislation that complies with the international space treaties, UNCOPUOS consulted with UNGA for it to adopt a resolution concerning recommendations on national legislation.159 However, it is the prerogative of the states to follow through with these recommendations to actually create enforceable law. Even UNCOPUOS’s strongest enforcement capability, diplomatic maneuvering, is inhibited by a number of factors. First, UNCOPUOS is governed by strict procedural rules that stunt its ability to produce resolutions.160 Resolutions require unanimous approving or abstaining votes from all voting members in order to pass.161 In some instances, this vote by consensus has taken UNCOPUOS almost a decade to pass resolutions on crucial issues.162 For instance, UNCOPUOS took nearly ten years to settle principles concerning direct broadcasting and remote sensing163—an obstructive delay for the rapidly developing industry. Second, UNCOPUOS is further constrained by the political motives of its voting members, who have voted against credible proposals simply because they were introduced by a political rival.164 These factors serve as impediments for the only committee on international cooperation relating to outer space to implement real legal change.