# Palm R6

## 1

**Interp – Unjust refers to a negative action – it means contrary.**

**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.

**Violation – The Aff is a positive action – it creates a new concept for Space i.e. the treating of Space as a “Global Commons”.**

**Standards –**

**1] Limits – making the topic bi-directional explodes predictability – it means that Aff’s can both increase non-exist property regimes in space AND decrease appropriation by private actors – makes the topic untenable.**

**2] Ground – wrecks Neg Generics – we can’t say appropriation good since the 1AC can create new views on Outer Space Property Rights that circumvent our Links since they can say “Global Commons” approach solves.**

**Independently - the Plan is both Extra-T - since it establishes a new property rights regime AND Effects-T - since the Global Commons ISN'T INTRINSICALLY a reduction on Private Property in Space, it involves actions like creating a governance system AND redistribution/cooperation which is the I/L to their Colonialism Advantage - both of which are voters for Limits and Predictability**

**Drop the debater–severance kills 1NC strat construction—1AR restart favors aff since it’s 7-6 time skew and they get 2 speeches to my one**

**No rvi–shouldn’t win for being fair and causes baiting/chilling**

**Competing interps–reasonability is arbitrary and causes a race to the bottom–finding the best model of debate is key to preserve the most substantive norms in the long terms but no frivolous race to the top since limited words in the res mean limited interps**

**NC theory first–NC abuse was reactive so they were the root cause and T uniquely first since only 2 months to discuss it–can discuss 1ar theory any time**

## 2

**Interp: The affirmative must define appropriation with a delineated text in the 1AC**

**Pershing 19**, Abigail D. "Interpreting the Outer Space Treaty's Non-Appropriation Principle: Customary International Law from 1967 to Today." Yale J. Int'l L. 44 (2019): 149. (Robina Fellow at European Court of Human Rights. European Court of Human Rights Yale Law School)//Elmer

Though the Outer Space Treaty flatly prohibits national appropriation of space,150 it leaves unanswered many questions as to what actually counts as appropriation. As far back as 1969, scholars wondered about the implications of this article.151 While it is clear that a nation may not claim ownership of the moon, other questions are not so clear. Does the prohibition extend to collecting scientific samples?152 Does creating space debris count as appropriation by occupation? While the answers to these questions are most likely no, simply because of the difficulties that would be caused otherwise, there are some questions that are more difficult to answer, and more pressing. As commercial space flight becomes more and more prevalent,153 the question of whether private entities can appropriate property in space becomes very important. Whereas once it took a nation to get into space, it will soon take only a corporation, and scholars have pondered whether these entities will be able to claim property in space.154 Though this seems allowable, since the treaty only prohibits “national appropriation,”155 allowing such appropriation would lead to an absurd result. This is because the only value that lies in recognition of a claim is the ability to have that claim enforced.156 If a nation recognized and enforced such a claim, this enforcement would constitute state action.157 It would serve to exclude members of other nations and would thus serve as a form of national appropriation, even though the nation never attempted to directly appropriate the property.158 Furthermore, the Outer Space Treaty also requires that non-governmental entities must be authorized and monitored by the entities’ home countries to operate in space.159 Since a nation cannot authorize its citizens to act in contradiction to international law, a nation would not be allowed to license a private entity to appropriate property in space.160 While this nonappropriation principle is great for allowing free access to space, thereby encouraging research and development in the field, it makes it difficult to create or police a solution to the space debris problem. A viable solution will have to work without becoming an appropriation. There is, however, very little substantive law on what actually counts as appropriation in the context of space.161 So, the best way to see what is and is not allowed is to look both at the general international law regarding appropriations and to look at the past actions of space actors to see what has been allowed (or at least tolerated) and what has been prohibited or rejected.

**The net benefit is shiftiness – vague plan wording wrecks Neg Ground since it’s impossible to know which arguments link given different types of appropriation like mining, space col, satellites, and tourism – the 1AR dodges links by saying they don’t affect particular types of appropriation, or they don’t reduce private appropriation enough to trigger the link. Cx doesn’t check–it’s non verifiable and skews preround prep–they get away with abuse no risk justifying infinite abuse BUT no regress since the interp is grounded in the lit and limited words in the res mean limited interps**

## 3

**Reforms spurred by popular backlash are critical to Russian growth and coming now, but the plan stops them by giving Putin a foreign policy win that secures legitimacy**

Andrew **Wood 19**, Associate Fellow in the Russia and Eurasia Program of Chatham House, Former British Ambassador to Belgrade and Moscow, “Putinist Rule Minus Putin?”, The American Interest, 7/29/2019, https://www.the-american-interest.com/2019/07/29/putinist-rule-minus-putin/

The Russian tradition of top-down rule has a long history, but Vladimir Vladimirovich Putin was not condemned to follow it over the past couple of decades. It was Putin who made the crucial decision to reinforce it further on his return to the Kremlin in 2012 by choosing repression over the cautious economic reforms that had been mooted in the Medvedev presidential interlude. He it was who seized Crimea in 2014 and invaded eastern Ukraine. He has overseen the decline in the Russian economy since 2008 and the continuing rise in corruption that has gone along with it. He is responsible for the servility of the Duma and the courts to the diktat of the executive branch, and for the predatory conduct of Russia’s various enforcement agencies. The questions for Russia now are how, and whether, present political structures can in due course cope without Putin. “Putinism” is a convenient shorthand for describing the way Russia is ruled, but that is the result of a personalized process intended to enforce the unity of the Russian state and the obligation of its citizens to obey its requirements, not a construct defined in detail from the start. Its principal achievement has been that it has both protected and enhanced the role of the center. Putin’s re-election as President in 2018 confirmed authoritarianism as a process in continuing advance, its overriding purpose being to retain power in the interests of those already wielding it, and bound by loyalty to its central figure, at present Putin. Putin does not of course literally rule alone. He cannot in the nature of things decide everything in Russia by himself. He could not, even if he wished it, prevent those holding some degree of power at any level from using it to their cumulative advantage without regard to the law, or to what most outsiders would see as common decency, for that matter. He is most immediately dependent on the support of a narrowing set of long-term collaborators, whether political-, security-, or business-related, whose interests are also dependent on the present disorder of things, together with the mutual and complicit trust among those collaborators essential to its preservation. Putin is the linchpin that holds them together. Hang together or hang separately is the English language proverb. There is no doubt a Russian one. Stability? Putin’s present term ends in May 2024. He cannot under Russia’s Constitution stand again that year. But the personalized and repressive logic of Putinism implies that a way to allow him to remain in command must nevertheless be found. As Grigory Yavlinsky rightly put it in his updated and newly translated study of what he calls peripheral authoritarianism, in Russia and in other states similarly governed: signs have become more pronounced that Russia’s autocracy is developing along the lines of long-term usurpation of power by a very close circle of people that see politics in terms of highly personal power play rather than as a mechanism to ensure the long-term survival of Russian statehood. Yavlinsky concludes that the spectrum of remaining opportunities for change has narrowed, at least for the next decade. If that proves to be so, preserving a lasting claim to continuing legitimacy without addressing Russia’s external or internal problems would in effect, if it succeeded, be to freeze those problems in place. The shadow of unknown and so far unpredictable change in 2024 has now fed into a shift in public attitudes since Putin’s re-election in 2018. Putin himself has become somewhat tarnished, losing in the process his image of being beyond politics, and of being Russia’s necessary savior. Putin is now held personally responsible for domestic problems that he could once deflect onto his Prime Minister’s shoulders. The argument that the Kremlin is the defender of “traditional values” on behalf of the Russian people has lost some of its force. The perception that Russia’s leaders are concerned for their own interests and those of their privileged dependents, rather than those of Russia’s ordinary citizens, is becoming the norm. Polls show that about 27-30 percent of the population are now ready, or at least say they are ready, to take part in street protests. These are becoming more common, not least outside Moscow, provoked for the most part by local issues and the misdeeds of local or regional office holders. But they all nevertheless reflect to some degree or another on the standing of the Kremlin. None of this is to suggest that widespread public disturbance is imminent. What triggers that in any society is always unpredictable. There are, moreover, neither widely accepted ideas for better government nor public figures of sufficient standing to articulate them in Russia, for now at least, around whom such disturbances might crystallize on a nation-wide scale. But the existing and potentially developing shift in public attitudes does indicate that, if Putin chooses to stay in effective power after 2024, then continuity in the Kremlin will be dependent on popular resignation rather than enthusiasm. Russia’s economic prospects up to and beyond 2024 are poor, and neither Putin nor his authoritarian minded supporters have serious proposals for improving them. The “National Projects” he has put forward are similar in principle to others that have been tried in vain before. Assertions that innovative investment in the defense sector will pay off in promoting diversity across the economy as a whole have proved false. Per capita income has declined over the past five years and may not easily recover. Putin and his colleagues can no longer rely, as the Kremlin did ten or more years ago, on growing income from natural resources, however ill-managed, to bolster its popular appeal and to pay off its political allies. Around three-quarters of Russia’s GDP is by now state owned, meaning run by Putin sanctioned beneficiaries. Significant capital flight has continued and is a clear marker of distrust of the authorities. So too is the less widely noted emigration of well educated and enterprising Russians to the Western democracies since 2000, whose rate rose significantly after Putin’s return to the Kremlin in 2012. The total over the past 19 years is estimated to be 1.6–2 million. The Internal Backstop Economic difficulties, a sense that Putinism has exhausted its political capital and resentment at the enforcement of top down control may perhaps make a further Putin term after 2024 troublesome to implement without some sort of domestic or foreign event to make it seem necessary. There are however significant numbers of Russians able to benefit from the complexities of the present state of affairs, or unsettled enough at the thought of Putin going without a clear and reasonably trusted successor in prospect to make Putin’s continuance in effective control seem by 2023 both inevitable and acceptable. Continued stagnation from 2024 on and uncertain relations with the outside world would, on the other hand, seem likely to fuel more and more discontent. There is at present no sign of an aging Putin or his collaborators having anything fresh to offer on his home front, either before or after 2024. But he has a telling reserve of force at his disposal for the purpose of ensuring the survival of the regime in case of domestic violence. The National Guard is comparable in numbers to the Russian Armed Forces. Its declared purpose is to ensure public order, meaning in practice keeping Russian citizens in order by force, however violent. There are other internal agencies with similar powers. The extent of the network expresses ruthlessness but is also a mark of fear within the regime as to the committed loyalty of the Russian people in general. The same is true of the persistent effort made by Kremlin supporters to confine public discussion to their approved agenda of how Russia should develop, politically, economically or with regard to the rest of the world. The effect is that Russia at present exists in a state of limbo, with its governing authorities incapable of addressing the issues of most importance to its citizens, its domestic concerns. The large share of the Russian budget devoted to domestic and international security gets in the way, along with the interest of privileged state contractors in using every opportunity to pursue and price projects designed to fill their pockets rather than benefit the public as a whole. Great Power? Stephen Kotkin records in his magisterial history of the Stalin years that, by 1937, “Perceived security imperatives and a need for absolute unity once again turned the quest in Russia to build a strong state into personal rule.” Stalin has of course been restored to eminent repute in Russia under Putin, and Putin has been influenced by Stalin’s train of thought, as well as borrowing his language from time to time. But I do not quote Kotkin to show that Putin is a Stalin clone, merely to point to the fact that Putin’s aim from the beginning has been, like Stalin’s and others’ before him, to build a strong state in Russia by means of a “vertical of power,” and that the end result is, once again, personal rule. Security imperatives, as Putin would see them, have been a driving force, with the need for absolute unity in meeting them as the inescapable corollary. Like Stalin before him, Putin does not draw a distinction between what he sees as threatening at home or abroad. The two shade into one another. The tragedy of Beslan in September 2004, for instance, was by any normal criteria an internal affair, with the school seized by Chechen terrorists and the threat resolved with brutal slaughter by Russian forces. For Putin, it was also an attempt by unspecified foreign forces to seize a “juicy piece” of Russian territory, and a reason to abolish the autonomous standing of Russia’s Governors. He and his colleagues saw the 2004-05 Orange Revolution in Ukraine not as an internal crisis in that state, but as the result of foreign interference directed at Russia. He responded at home with increasingly stringent measures against non-governmental organizations in Russia, starting with any that had any form of external financial aid and the introduction and extension of measures directed against “extremism.” He argued that the street protests of 2011-12 were provoked and planned by Hillary Clinton. And so on, to the need to protect Fortress Russia today from internal Fifth Columnists and from hostile foreign powers determined to destroy it. There are of course complexities in this process of hardening attitudes in official Russia as to its relationship with its own people, with its ex-Soviet neighbors, with former members of the Warsaw Pact, and with the West in general over the Putin years, but one strain is constant: Nothing is ever Russia’s fault. Moscow is always sinned against. Putin’s historic mission is to restore his country’s status as a great power, with the right to establish and protect its hegemony over its neighbors. Those neighbors have no right to object, let alone to look to outside powers to support their independence. Putin and his colleagues have public support in Russia for such a stance, as did their tsarist predecessors in analogous circumstances. But the Russian public would at the same time by now prefer there to be a less fraught relationship with the rest of Europe, and the United States too. The euphoria provoked by the Kremlin’s bloodless seizure of Crimea in 2014 has faded. The idea that their country has a special mission to defend itself, and that this has to be done by cowing its neighbors into effective submission, is still there as a general assumption, but not as an immediate aspiration.

**The plan masks the need for economic modernization**

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Today, the Russian Federation is a major actor in space and outer space governance. Its presence in space is second only to that of the US. Meanwhile, the challenges of keeping outer space ‘secure’ is growing in importance and complexity in the current context of globalisation, rapid technological change, and the increasing access to space for state and non-state actors. Russia considers outer space as a strategic region to enhance its military capabilities on earth, provide intelligence and communication functions, and achieve international status and prestige as a space power. It is sensitive to US strategy and actions and has developed counter-space technologies (e.g. electronic weapons that can jam satellites) to provide Russia with an asymmetrical edge to offset US military advantages. However, Russia’s outer space rhetoric and policy are also driven by domestic and identity issues. Outer space strategy is an instrument through which Russia pursues its goal to be a ‘great power’ and to shape the international system more closely to the new multipolar world as it sees it. It may also bring Russia economic benefits and mask internal challenges. President Vladimir Putin has taken both symmetric and asymmetric actions in outer space and increased Russia’s investment in new technologies (satellites, electronic warfare,1 strategic offensive weapon, etc.) and simultaneously pursued diplomatic initiatives to control weapons in space. During the Cold War, despite military tensions and serious concern about a possible arms race in outer space, Russia and the US negotiated internationally binding agreements related to the governance of space activities. Today, both powers are again warning of a new arms race in outer space while continuing to strengthen the roles of their militaries in the field. Since 2000, Russia has actively pursued both binding laws and non-binding norms to ban and control weapons in outer space and has advocated for non-binding, voluntary transparency and confidence-building measures (TCBMs). Sometimes it has done this in cooperation with other states, sometimes in opposition to them. This diplomatic endeavour may seem somewhat at odds with Russia’s growing militarisation; however, the dual role on outer space fits well within Russia’s overall foreign and security strategy which is both reactive to US policy and simultaneously pro the United Nations (UN) and consensus-based multilateral negotiations. Russia is strengthening its comprehensive power, including military, diplomatic and normative global influence, in order to make its voice heard on the international stage. Russia’s diplomatic activism is that of an aspirational great power, but it also reflects the limits of its current economic and military weaknesses. International negotiations enable Russia to be recognised as a key player in global affairs, while also benefiting from an opportunity to highlight the US/West’s declining influence and the rise of a multipolar world. This chapter examines why outer space is so important for Russia. Then, it shows how and why the Russian government’s outer space strategy and capabilities have evolved since the 1990s. The paper concludes with an appraisal of Russia’s recent diplomatic initiatives on outer space governance.2 No longer economically competitive in the race for control of outer space, Russia has attempted several strategies to enable it at least to keep in the running. It has placed its space strategy in the context of defence requirements and state military control. It is using diplomacy – working with international organisations affiliated with the UN – to discuss, cooperate on and influence the race for the militarisation of space. It works with disarmament organisations to influence and promote a collective approach to the problem, rather than one dominated by the richer and more powerful states. Russia’s securitisation of outer space: threats and opportunities The Russian state defines threats largely in traditional terms of territorial protection from military challenges and views space assets as vital for military communication and defence. Russia’s geography highlights the need to protect its extensive borders and military and economic assets and infrastructure scattered over its vast territory (Barvinenko, 2007). The state has traditionally assessed that it is surrounded by hostile powers and thus needs ‘buffers’ or a ‘sphere of influence’ to protect itself. Today, Russia has expanded this rhetoric of vulnerability to include attacks from outer space. Russians use the term ‘aerospace’ rather than outer space because of the interrelatedness of airspace and outer space in the context of contemporary threats and conflicts, and because there is no distinct boundary between the two concepts (Kupriyanov, 2005). Russia’s rhetoric on outer space broadly mirrors that of the US, stressing urgency to prepare for a possible future war there. In 2017, US Navy Vice Admiral Charles Richards, deputy commander of US Strategic Command, argued that ‘With rapidly growing threat of a degraded space environment, we must prepare for a conflict that extends into space’ (quoted in Daniels, 2017). Rapid technological advancements in the space industry have influenced perceptions that there are economic benefits from being a space power. At the same time, they have given rise to concerns about threats stemming from the militarisation of space. For example, the development of cheap miniature satellites promises speedy replacement of disabled satellites in the event of attack. Theoretically, this could allow the US military (or other actors) to use such space constellations to support operations during a conflict.3 Through technology outer space has become integrated with other domains – land, sea, air and cyber. Most recently, the first generation of hypersonic weapons has ‘set the conditions for the merger of air and missiles defence and the air and outer space domains’ (Charron and Fergusson, 2018). Of course, a healthy space industry also provides strategic resources for a state’s military and economy. In Russia’s case, the announcement of new technological developments also masks unaddressed structural and systemic weaknesses and confers domestic and international legitimacy on Russia’s aspiration to be a ‘great power’.

**Space cooperation massively boosts prestige for authoritarian regimes**

**Juul, 19** - Senior policy analyst at the Center for American Progress

Peter Juul, “Trump’s Space Force Gets the Final Frontier All Wrong,” Foreign Policy. March 20, 2019. https://foreignpolicy.com/2019/03/20/trumps-space-force-gets-the-final-frontier-all-wrong/

But funding isn’t everything, and in the new geopolitical context, democracy must be seen to work effectively. When it comes to space exploration, that means ratcheting back U.S. space cooperation with Russia as well as forgoing any equally intimate cooperation with China and its secretive space agency. The fact that the head of Russia’s space agency remains under U.S. sanctions for his role in Moscow’s military intervention in Ukraine illustrates the hazards involved in working with autocracies in space. Deep cooperation with autocratic powers in space gives autocracies a major point of diplomatic leverage over the United States, and more generally allows them to poach unearned international prestige by working on goals set and largely carried out by the United States. In today’s world, there’s no reason for the United States to give Russia or China this sort of standing by association. Cooperation between the United States and Russia won’t grind to an immediate halt, though. With the International Space Station in orbit until at least 2024—if not longer—it will take time to disentangle the web of functional ties that have bound NASA and its Russian counterpart over the last quarter century. Significant cooperation with China should be avoided altogether, especially given its notoriously opaque and military-run space program. The space programs and agencies of other nations—NASA, the European Space Agency and its member-nation agencies, the Japan Aerospace Exploration Agency, and even Russia’s Roscosmos—remain led and run by civilians.

**Extinction**

Bruce **Blair 19**, Co-founder of Global Zero, nuclear security expert and a research scholar at the Program on Science and Global Security at Princeton University's Woodrow Wilson School of Public and International Affairs, with; Clifford Gaddy; 2019, “Russia’s Aging War Machine,” https://www.globalzero.org/wp-content/uploads/2019/03/BB\_Russias-Aging-War-Machine\_1999.pdf

The Stakes for the United States Should Americans and their government care about Russia’s nuclear posture and its dissolution? The answer is an emphatic yes. American security is bound up in Russia’s destiny, and our immediate security depends crucially on ironclad Russian control over its nuclear arsenal. If we are very lucky, the Russian nuclear arsenal and control system will atrophy without incident, coming to a safe instead of deadly end. In such a happy scenario, this atrophy will also encourage Russia to ratify the START II arms reduction treaty and negotiate even deeper bilateral reductions, lowering the ceiling on strategic deployments from 3,500 (START II) to 2,500 (START III) or fewer.Within a decade or so Russia’s aging force could easily shrink to 500 or fewer, creating enormous latitude to negotiate vast reductions in deployments. But this scenario is wishful thinking loaded with untenable assumptions. The START process has stalled and may not be revived any time soon, leaving in place increasingly decrepit and hazardous forces that Russia might not retire after all. The decay of the Russian arsenal is certain to run growing risks of proliferation and to erode safety along with basic offensive capability. For example, a degraded early warning network is less able to detect an actual attack—but also less able to screen out false indications of attack. Similarly, failure in the nuclear command link between the General Staff in Moscow and the launch crews in the field would disrupt not only the ability of the General Staff to quickly transmit the go code, but also the feedback loop from the missiles to the General Staff that detects and prevents an unauthorized launch attempt at any subordinate level of command. Finally, the departure of security guards from their posts at weapons depots to forage for food or escape inclement weather may not only impede the authorized dispersal of those weapons during a crisis but also increase the vulnerability of the weapons to theft. And the danger is not merely theoretical. A 1996 CIA report noted that broken locking devices on some Russian nuclear weapons had not been repaired for lack of spare parts. In short, progressive nuclear deterioration in Russia increases the risks of mistaken, illicit, or accidental launch, and the loss of strict central control over Russia’s vast nuclear complex bodes ill for nonproliferation. If Russia’s nuclear designers, producers, and custodians surrender to economic pressure, they could open the floodgates to the illicit transfer of nuclear materials, weapons, and delivery technologies to America’s adversaries. A meltdown of Russian nuclear control could be catastrophic for Americans. Securing Russia’s nuclear weapons and materials and strengthening safety and control over operational deployments deserve top billing among the security priorities of the U.S. government. To alleviate the immediate danger, Russian and U.S. strategic missiles should be taken off hair-trigger alert so that none could be fired on a moment’s notice. “De-alerting” our arsenals, ideally by detaching the warheads from missiles, would reduce their susceptibility to illicit or mistaken launch.Today it takes only minutes to prepare those forces for launch. Reducing the interval to days or longer would provide a far larger margin of safety against many scenarios, ranging from the temporary loss of legitimate civilian control over Russian weapons to false warning in Russia’s early warning system—both more plausible dangers than a deliberate, cold-blooded attack by Russia or the United States against each other. The challenge of deterrence today pales beside the challenge of operational safety. But even a comprehensive nuclear stand-down falls short over the long run. As long as Russia remains mired in economic, political, and military despair, the nuclear threat will continue. Russia will not be able to reduce its reliance on nuclear weapons until it can afford an adequate conventional military force. It will not be able to ensure control over its nuclear weapons and materials until it has a strong state, one based on a healthy economy and a civil society. The West’s vital stakes in this process of nation-building have not diminished, despite all the failures and frustrations of the past decade. If anything, those stakes have grown—as have the cost and effort needed to stabilize and transform Russia.

## 4

**The plan requires clarifying international space law---causes strategic bargaining to extract concessions**

Alexander William **Salter 16**, Assistant Professor of Economics, Rawls College of Business, Texas Tech University, "SPACE DEBRIS: A LAW AND ECONOMICS ANALYSIS OF THE ORBITAL COMMONS", 19 STAN. TECH. L. REV. 221 (2016), https://law.stanford.edu/wp-content/uploads/2017/11/19-2-2-salter-final\_0.pdf

V. MITIGATION VS. REMOVAL Relying on international law to create an environment conducive to space debris removal initially seems promising. The Virginia school of political economy has convincingly shown the importance of political-legal institutions in creating the incentives that determine whether those who act within those institutions behave cooperatively or predatorily.47 In the context of space debris, the role of nation-states, or their space agencies, would be to create an international legal framework that clearly specifies the rules that will govern space debris removal and the interactions in space more generally. The certainty afforded by clear and nondiscriminatory48 rules would enable the parties of the space debris “social contract” to use efficient strategies for coping with space debris. However, this ideal result is, in practice, far from certain. To borrow a concept from Buchanan and Tullock’s framework,49 the costs of amending the rules in the case of international space law are exceptionally high. Although a social contract is beneficial in that it prevents stronger nation-states from imposing their will on weaker nation-states, it also creates incentives for the main spacefaring nations to block reforms that are overall welfare-enhancing but that do not sufficiently or directly benefit the stronger nations. 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 (more commonly known as the Outer Space Treaty) is the foundation for current international space law.50 All major spacefaring nations are signatories. Article VIII of this treaty is the largest legal barrier to space debris removal efforts. This article stipulates that parties to the treaty retain jurisdiction over objects they launch into space, whether in orbit or on a celestial body such as the Moon. This article means that American organizations, whether private firms or the government, cannot remove pieces of Chinese or Russian debris without the permission of their respective governments. Perhaps contrary to intuition, consent will probably not be easy to secure. A major difficulty lies in the realization that much debris is valuable scrap material that is already in orbit. A significant fraction of the costs associated with putting spacecraft in orbit comes from escaping Earth’s gravity well. The presence of valuable material already in space can justifiably be claimed as a valuable resource for repairs to current spacecraft and eventual manufacturing in space. As an example, approximately 1,000 tons of aluminum orbit as debris from the upper stages of launch vehicles alone. Launching those materials into orbit could cost between $5 billion and $10 billion and would take several years.51 Another difficulty lies in the fact that no definition of space debris is currently accepted internationally. This could prove problematic for removal efforts, if there is disagreement as to whether a given object is useless space junk, or a potentially useful space asset. Although this ambiguity may appear purely semantic, resolving it does pose some legal difficulties. Doing so would require consensus among the spacefaring nations. The negotiation process for obtaining consent would be costly. Less obvious, but still important, is the 1972 Convention on International Liability for Damage Caused by Space Objects, normally referred to as the Liability Convention. The Liability Convention expanded on the issue of liability in Article VII of the Outer Space Treaty. Under the Liability Convention, any government “shall be absolutely liable to pay compensation for damage caused by its space objects on the surface of the Earth or to aircraft, and liable for damage due to its faults in space.”52 In other words, if a US party attempts to remove debris and accidentally damages another nation’s space objects, the US government would be liable for damages. More generally, because launching states would bear costs associated with accidents during debris removal, those states may be unwilling to participate in or permit such efforts. In theory, insurance can partly remediate the costs, but that remediation would still make debris removal engagement less appealing. A global effort to remediate debris would, by necessity, involve the three major spacefaring nations: the United States, Russia, and China.53 However, any effort would also require—at a minimum—a significant clarification and—at most —a complete overhaul of existing space law.54 One cannot assume that parties to the necessary political bargains would limit parleying to space-related issues. Agreements between sovereign nation-states must be self-enforcing.55 To secure consent, various parties to the change in the international legal-institutional framework may bargain strategically and may hold out for unrelated concessions as a way of maximizing private surplus. The costs, especially the decision-making costs, of changing the legal framework to secure a global response to a global commons problem are potentially quite high.

#### Russia uses negotiations to push the PPWT---erodes US space dominance

Michael **Listner 18**, JD, Regent University School of Law, the founder and principal of the legal and policy think-tank/consultation firm Space Law and Policy Solutions, Sept 17 2018, "The art of lawfare and the real war in outer space", The Space Review, www.thespacereview.com/article/3571/1

A battle for primacy in outer space took place on August 14, 2018, among the Russian Federation, the United States, and, indirectly, the People’s Republic of China. This battle did not involve the exotic technology of science fiction, antisatellite weapons (ASATs), or the incapacitation of satellites; it was not part of a hot war and did not even occur in outer space. Rather, it took place in the halls of the Conference of Disarmament in Geneva, Switzerland, and concerned the interdiction of the hypothetical deployment of instrumentalities of a hot war in outer space. The carefully orchestrated arena for this battle by the proponents of banning so-called space weapons involved methodologies, institutions, and agents of international law but was undermined by a vigorous counterattack by the United States using the same forum and suite of instruments so skillfully levied against it.1 This battle, of course, is not a single instance but the latest skirmish of a much larger conflict involving real war in space. There’s been significant attention—and overstatem­ent— about the effect of a proposed Space Force by the United States, including an arms race and dominance as articulated by the United States,2 yet little attention has been given to the contest that continues to be fought over outer space using the tools of international law and policy, both of which are instruments of “lawfare.” Maj. General Charles N. Dunlap, Jr. (retired)3 first defined lawfare in the paper “Law and Military Interventions: Preserving Humanitarian Values in 21st Conflicts,” as “a method of warfare where law is used as a means of realizing a military objective.”4 This definition can be expanded to the use of hard law, soft law, and non-governmental organizations and institutions within the international arena to achieve a national objective and geopolitical end that would otherwise require the use of hard power. As observed by General Dunlap, lawfare imputes the teachings of Sun Tzu in particular this teaching: “The supreme art of war is to subdue the enemy without fighting.”5 Lawfare is not a new concept and has been used in many domains, but the tools brought to bear have become more prolific, and the domain of outer space has been and continues to be a theater where it is applied. The earliest example of lawfare (even though the term was not yet coined) in outer space occurred pre-Sputnik with Soviet Union attempting to use customary law to make claims of sovereignty extending beyond the atmosphere to the space above its territory. This claim was preempted by the launch of Sputnik 1 and the act of the satellite flying over the territory of other nations.6 The Eisenhower Administration saw this as an opportunity to meet a national space policy goal and likewise used customary law as an implement of lawfare and successfully created the principle of free access to outer space, which it utilized for photoreconnaissance activities in lieu of overflights of another nation’s sovereign airspace.7 The Soviet Union unsuccessfully attempted to defeat this move using lawfare in the United Nations through a proposal that would have prohibited the use of outer space for the purpose of intelligence gathering.8 Since that setback, the art of lawfare in outer space has settled on the objective ascribed to another teaching of Sun Tzu: “With regard to precipitous heights, if you proceed your adversary, occupy the raised and sunny spots, and there wait for him to come up. Remember, if the enemy has occupied precipitous heights before you, do not follow him, but retreat and try to entice him away.”9 The second part of this teaching exemplifies the role of lawfare in the present war in outer space: to employ the tools and institutions of international law as a means to legally corner an adversary and gain geopolitical advantage in soft power, with the aim of slowing and eroding the advantage that adversary has attained through preeminence in the domain of outer space, and replace it with their own. This objective is accomplished by two general means: legally-binding measures, most commonly in the form of treaties, and so-called non-binding measures couched as sustainability. Lawfare in space continued in the intervening years between Sputnik-1 and the signature and ratification of the Outer Space Treaty and afterward. The weapon of choice: disarmament proposals for outer space. Provisions for banning so-called space weapons in the Outer Space Treaty were rejected by the Soviet Union in favor of separate arms control measures.10 These measures included proposals, some of which related to the proscription of ASATs, designed to not only gain an advantage in outer space but to gauge political intent and resolve.11 The lawfare offensive escalated after the proposed Strategic Defense Initiative with an effort curtail space-based missile defense technology through a ban on so-called space weapons and a proverbial arms race in outer space. The Prevention of an Arms Race in Outer Space (PAROS), introduced in 1985, continues to seek a legally binding measure to place any weapon in outer space, including those designed for self-defense. It spawned measures such as the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects (PPWT), co-sponsored by Russia and China. This and other measures have met resistance as unverifiable and certainly are not likely to gain the advice and consent of the US Senate for ratification. The end game of the use of lawfare in the form of efforts like PAROS—the latest attempt at which was defeated in Geneva—is to propose legally binding measures that proponents would ignore to their advantage in any event. The sponsors and advocates of these hard-law measures recognize they will not come to fruition but, in the process of promoting them, will enhance their soft power and moral authority, which can be applied to entice their adversary down. Non-binding resolutions and measures in the form of political agreements and guidelines are being used concurrently in the lawfare engagement in outer space, where proposals for legally binding measures alone fall short of the goal of creating hard law and challenging dominance in outer space. These resolutions and measures, which emphasize sustainability, are designed to perform an end run around the formalities of a treaty to entice agreement on issues that would otherwise be unacceptable in a hard-law agreement. These measures have the dual effect to create soft-power support on the one hand and hard law on the other. This tool of lawfare, which uses clichés of cooperation and sustainability, is a ploy that applies the ambiguous nature of customary international law to achieve what cannot be done through treaties: to “entice the adversary away” and create legal and political constraints to bind and degrade its use of outer space or prevent it from maintaining its superiority, all the while allowing others to play catchup and replace one form of dominance with another. While lawfare is by nature asymmetric, this indirect approach could be considered a subset an irregular tactic of lawfare, as opposed to the use of formal treaties in lawfare. The crux is that, like space objects used in outer space, international law and its implements are dual-use in that they can be used for proactive ends or weaponized, with those using the appliances of lawfare to encourage cession of the high ground choosing the latter rather than the former. The decision to weaponize international law and its institutions to prosecute this war in space brings into question the efficacy of new rules or norms. Indeed, the idea of expanding the jurisprudence of outer space through custom, as being suggested by the United States, and more recently gap-filling rules being suggested by academia that could become custom, presents the real chance that, rather than the creation of the ploughshare of sustainability, new and more effective swords for lawfare will be forged. To paraphrase Sun Tzu, “all war is deception.” In the case of outer space, the pretext in the current war in space is that an arms race and a hot war in outer space is inevitable, and can only be avoided by formal rules or international governance. Conversely, a hot war can be prevented in no small part by using lawfare to engage in the contemporary war in space using the tools of, and the abundant resources found in, the experience of attorneys and litigators in particular to supplement and support diplomats to extend the velvet glove when applicable, and bare knuckles when necessary. If the August 14 statement in Geneva is any indicator, the United States may have just done that and begun the shift from light-touch diplomacy to bringing its legal warriors to bear in full-contact lawfare to engage and win the current war in outer space and help deter a more serious hot war from occurring without sacrificing the superiority it possesses in outer space.

**The PPWT prohibits space-based missile defense**

Jack M. **Beard 16**, Associate Professor of Law at the University of Nebraska College of Law, Feb 15 2016, "Soft Law ’s Failure on the Horizon: The International Code of Conduct for Outer Space Activities", University of Pennsylvania Journal of International Law, Vol. 38, No. 2, 2016, https://digitalcommons.unl.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1086&context=spacelaw

B. Avoid Arms Control Traps in Space Any successful effort to achieve legally binding restrictions on military activities or weapons in space must focus on specific, definable, and limited objectives or run afoul of issues that have historically ensured deadlock among suspicious and insecure adversaries.306 Some seemingly desirable goals, however, are likely to ensure failure. The first such problematic goal involves attempting to use arms control agreements or other instruments to comprehensively ensure peace in space. Unfortunately, the integration of modern military systems on earth, sea, air and space guarantees that at some point states seeking to disrupt or deny the ability of an adversary (such as the United States) to project power will find space capabilities to be a particularly appealing target, especially in the early stages of a crisis or conflict.307 The presence of so many things of military value in space thus makes actions by an adversary to neutralize, disrupt or destroy these things likely during a major conflict on earth.308 The second problematic arms control goal in space that seems certain to ensure stalemate involves attempting to define and prohibit military technologies with a view to broadly prevent the weaponization of space. Clearly defining a space weapon for purposes of any legally binding arms control agreement is a daunting task, one which is made particularly challenging by the “essentially military nature of space technology.”309 As noted, space technologies are routinely viewed as dual-use in nature, meaning that they can be readily employed for both civilian and military uses. Determining the ultimate purpose of many space technologies may thus depend on discerning the intentions of states, a process perhaps better suited for psychological than legal evaluation. 310 Further complicating the classification of space military technologies is the inherent difficulty in distinguishing most space weapons on the basis of their offensive and defensive roles or even their specific missions.311 For example, this problem lies at the heart of debates over the status and future of ballistic missile defense (BMD) programs, since the technology underlying BMD systems and offensive ASAT weapons is often indistinguishable.312 Vague and broad soft law instruments do not resolve this problem, but create instead their own confusion and insecurity. Vague and broad provisions in legally binding agreements that do not or cannot distinguish between these missions are similarly problematic. These issues, particularly difficulties in distinguishing ASAT and BMD systems, have figured prominently in complicating negotiations on space weapons over previous decades.313 Similarly, these concerns were a significant factor in initial U.S. opposition to the arms control measure proposed by China and Russia (the PPWT) since it prohibits states from placing any type of weapon in outer space (regardless of its military mission), thus effectively prohibiting the deployment of ballistic missile defense systems. 314 Furthermore, even if clear legal restrictions could be developed, verifying compliance with respect to technology in orbit around Earth would be very difficult (a point conceded even by China with respect to its own proposed PPWT).315

#### Causes rogue state missile threats---that escalates

Patrick M. **Shanahan 19**, Acting Secretary of Defense from January to June 2019, previously vice president and general manager of Boeing Missile Defense Systems, Jan 2019, "2019 MISSILE DEFENSE REVIEW", US Department of Defense, https://media.defense.gov/2019/Jan/17/2002080666/-1/-1/1/2019-MISSILE-DEFENSE-REVIEW.PDF

U.S. Homeland Missile Defense will Stay Ahead of Rogue States’ Missile Threats Technology trends point to the possibility of increasing rogue state missile threats to the U.S. homeland. Vulnerability to rogue state missile threats would endanger the American people and infrastructure, undermine the U.S. diplomatic position of strength, and could lead potential adversaries to mistakenly perceive the United States as susceptible to coercive escalation threats intended to preclude U.S. resolve to resist aggression abroad. Such misperceptions risk undermining our deterrence posture and messaging, and could lead adversaries to dangerous miscalculations regarding our commitment and resolve. It is therefore imperative that U.S. missile defense capabilities provide effective protection against rogue state missile threats to the homeland now and into the future. The United States is technically capable of doing so and has adopted an active missile defense force-sizing measure for protection of the homeland. DoD will develop, acquire, and maintain the U.S. homeland missile defense capabilities necessary to effectively protect against possible missile attacks on the homeland posed by the long-range missile arsenals of rogue states, defined today as North Korea and Iran, and to support the other missile defense roles identified in this MDR. This force-sizing measure for active U.S. missile defense is fully consistent with the 2018 NPR, and in order to keep pace with the threat, DoD will utilize existing defense systems and an increasing mix of advanced technologies, such as kinetic or directed-energy boost-phase defenses, and other advanced systems. It is technically challenging but feasible over time, affordable, and a strategic imperative. It will require the examination and possible fielding of advanced technologies to provide greater efficiencies for U.S. active missile defense capabilities, including space-based sensors and boost-phase defense capabilities. Further, because the related requirements will evolve as the long-range threat posed by rogue states evolves, it does not allow a static U.S. homeland defense architecture. Rather, it calls for a missile defense architecture that can adapt to emerging and unanticipated threats, including by adding capacity and the capability to surge missile defense as necessary in times of crisis or conflict. In coming years, rogue state missile threats to the U.S. homeland will likely expand in numbers and complexity. There are and will remain inherent uncertainties regarding the potential pace and scope of that expansion. Consequently, the United States will not accept any limitation or constraint on the development or deployment of missile defense capabilities needed to protect the homeland against rogue missile threats. Accepting limits now could constrain or preclude missile defense technologies and options necessary in the future to effectively protect the American people. As U.S. active defenses for the homeland continue to improve to stay ahead of rogue states’ missile threats, they could also provide a measure of protection against accidental or unauthorized missile launches. This defensive capability could be significant in the event of destabilizing domestic developments in any potential adversary armed with strategic weapons, and as long-range missile capabilities proliferate in coming years. U.S. missile defense capabilities will be sized to provide continuing effective protection of the U.S. homeland against rogue states’ offensive missile threats. The United States relies on nuclear deterrence to address the large and more sophisticated Russian and Chinese intercontinental ballistic missile capabilities, as well as to deter attacks from any source consistent with long-standing U.S. declaratory policy as re-affirmed in the 2018 NPR.

## 5

**CP: States ought engage in a prior and binding consultation with indigenous nations to adopt a binding international agreement that establishes outer space as a global commons not subject to appropriation and is enforced via a system of regulatory delimiting and global liability**

**Normal means isn’t a consultation but it’s key to indigenous sovereignty**

Hilding **Neilson &** Elena **Cirkovic** Consulting Canadians on a Framework for Future Space Exploration Activities: A Response to the Canadian Space Agency (CSA) - Part I, Völkerrechtsblog, 28.07.**2021**, doi: 10.17176/20210728-135814-0. //SR

Canada’s position of support and leadership in space exploration has a positive and impressive history. From the development of the CanadaArm and the participation in work on the International Space Station (ISS) to the new scientific contributions with respect to lunar and Martian exploration, Canada has many reasons to be proud. However, it is worth noting that Canada’s role in space exploration has traditionally neglected to include Indigenous peoples, Indigenous knowledges, and Indigenous rights. In general, the history of Canadian participation in space exploration did not have a substantial and direct impact on Indigenous peoples’ rights in Canada. With accelerating technological developments in the past twenty years, space has become more accessible for humans. With these transformations, the current and proposed future of space exploration has the potential to negatively impact Indigenous peoples across Canada. One of the emerging issues for astronomers and various traditions including traditions of Indigenous peoples in Canada and elsewhere, is the launching of so-called satellite mega constellations, such as the SpaceX’s Starlink. Increasing the number of satellites in the Lower Earth’s Orbit (LEO), impacts further research. For various human cultures, Dark Skies have, among others, navigational and spiritual significance. Finally, the objective of our post is to emphasize the need for greater scientific understanding of the universe, which is achieved through research, education and outreach, and inclusion of multiple knowledges and ontologies. Without consultation with multiple knowledges of multicultural and multinational Canada, future space activities might contribute to the ongoing culture of colonization. We present arguments for the ethical and legal requirements for the CSA to consult with and to be inclusive of Indigenous rights and concerns as Canada moves to support the Artemis Accords. The Accords trigger a variety of issues in the outer space sector, which are beyond the scope of this brief post. The authors come to this work from two perspectives: the first being a Mi’kmaw astronomer who grew up in Newfoundland and is a status member of the Qalipu Nation, and co-author, a Bosnian-Canadian legal scholar. Thereby we stress that our contribution is an opinion and has no intent to speak for Indigenous peoples in general and/or any Indigenous-led organization in Canada, or any particular group or community in Canada. Please note that we will be using the terms Indigenous, and Aboriginal interchangeably as we engage with the language of domestic (Canadian) and international documents, publications, institutions, and relevant regulatory and/or administrative bodies. The terms Indigenous and Aboriginal refers to the three different categories of Indigenous peoples in Canada – First Nation, Inuit, and Métis. We reflect upon the CSA’s obligation to consult Indigenous peoples in Canada via two lenses: Firstly, where does Outer Space Law intersect with the modern and historic treaties between the First Nations and Canada (Crown)? Do these treaties include the skies and outer space? Secondly, considering its status as an international (and bilateral) agreement, where the Artemis Accords trigger the application of the United Nations Declaration on the Rights of Indigenous Peoples. Assuming that the Artemis Accords might, and in the situations where they do, trigger any responsibilities and obligations of Canada under the UNDRIP and its domestic laws to consult the First Nations, what are the CSA’s and Canada’s obligations to First Nation, Inuit, and Métis communities and Nations? We engage with these two points considering the following: That the questions of Indigenous rights and title in Canada, including the treaty rights, have significant impacts on how Canada consults with the First Nations and other communities and nations in Canada and pursues the ongoing and future space exploration accordingly; That these questions also require a revisiting of the allegedly prevailing narrative as proposed by some scholars and members of the global outer space sector, generally speaking, which treats space exploration as an analogy of the colonization of the Americas. The legal framework of our argument is that of Canadian Constitutional obligations towards indigenous peoples. The relevant cases are discussed and listed in the rest the following sections. Brief Consideration of Indigenous Rights in Canada Canada’s obligations to Indigenous peoples under the Canadian Constitution cannot be superseded or undermined by commitments under a bilateral agreement such as the Artemis Accords. These legal obligations include those recognized and affirmed by Section 35 of the Constitution Act, 1982, and those set out in self-government agreements. We recognize that, in 1985, the Supreme Court of Canada (SCC) concluded that treaties between Indigenous peoples and the Crown were not international treaties but were sui generis treaties (Simon v The Queen, [1985] 2 SCR 387 at para 33). However, it is worth considering that ‘[f]or many Indigenous peoples, treaties concluded with European powers…are, above all, treaties of peace and friendship, destined to organize coexistence in – not their exclusion from – the same territory and not to regulate restrictively their lives…under the overall jurisdiction of non-Indigenous authorities’ (para 117). While the United Nations, in documents including the UNDRIP, has recognized the potentially international character of Indigenous Crown treaties (UNDRIP Preamble, art 37(1)), we recognize that Canadian law has yet to consider this international recognition in domestic law. Nevertheless, as Henderson argues ‘any Crown authority over First Nations is limited to the actual scope of their treaty delegations. If no authority or power is delegated to the Crown, this power must be interpreted as reserved to First Nations, respectively, and is protected by prerogative rights and the common law since neither can extinguish a foreign legal system.’. There are plural and ongoing discussions on the status of Aboriginal title in Canada, as well as treaty obligations. It is beyond the scope of our comment to address the extensive international and domestic jurisprudence on the topic. However, we stress the existence of the Crown’s fiduciary duty to Aboriginal People as an aspect of various activities, including Canada’s activities in outer space (See, Annex I). Indeed, ‘The doctrine of Aboriginal rights exists… because of one simple fact: when Europeans arrived in North America, Aboriginal peoples were already here, living in communities on the land, and participating in distinctive cultures, as they had done for centuries. It is this fact, and this fact above all others, which separates Aboriginal peoples from all other minority groups in Canadian society and which mandates their special legal status.’ (Chief Justice Lamer in R. v. Van der Peet, para 30).

**Indigenous people say yes–appropriation goes against their values**

**Young**, M. J. (**1987**). “Pity the Indians of Outer Space”: Native American Views of the Space Program. Western Folklore, 46(4), 269. doi:10.2307/1499889 //SR \*brackets for problematic language]

Because Native Americans [indigenous people] have a different perspective of the world, they can offer us alternative ways of seeing ourselves in relationship to the natural world and help us answer the question of what constitutes appropriate behavior-in outer space, as well as on earth. Furthermore, some non-Native Americans realize that, as they look to the traditions of the Native Americans, they see their own heritage with increased clarity. Although this appreciation of Native Americans comes too late in America's history and could be construed as appropriating their ideas as we did their land, a significant number of Native Americans are receptive to the potential that now exists for a dialogue between traditions, both non-Native and Native American, perhaps because they are experiencing a parallel concern, a need to come to terms with their own emerging identity.2 Both groups have begun to realize that it is only through such a dialogue that the mistakes of the past can be avoided in the future. For non-Native Americans the justification for this inquiry is that through an analysis of the difference between the two understandings of space-Anglo and Native American-we can better "see" the ideological dimensions of our own, taken-for-granted mythology that legitimizes space exploration. Native American [indigenous] attitudes towards "outer space" often conflict with the attitudes of the proponents of the U.S. space program. Rather than applying the metaphor of the "new frontier" or even the term "outer" to this aspect of the cosmos, many Native Americans regard it as encompassed in "Father Sky," part of their network of symbolic associations that integrates all elements of the cosmos. A recent commercial called "Earth Pictures," produced by TRW, a firm that specializes in "aerial views" of portions of the earth's globe from outer space, aptly illustrates these differing attitudes.3 In this commercial, TRW representatives give members of the Navajo tribe a guided tour of the TRW laboratories and conclude by showing them a satellite picture (Landsat) of the Navajo reservation from outer space. With evident humor, the Navajos respond by holding up a picture of outer space from their reservation-a dry painting of Father Sky who contains within his body the sun, moon, and constellations. The commercial thus serves to illustrate Navajo beliefs about "outer space." According to Navajo worldview, which emphasizes harmonious relations with all elements of the cosmos-a sacred kinship among all aspects of experience, natural and supernatural-Father Sky is a living being, intimately related to humans who should, therefore, treat him with appreciation and respect. This example from the Navajo is representative of the cosmology of most Native American groups, a cosmology that is shaped by a belief in the unity and sacred nature of all life, the above and the below. As Joseph Epes Brown suggests, the Native American quality of seeing is based on "a polysynthetic metaphysic of nature, immediately experienced rather than dangerously abstracted."4 He describes this vision as a "message of the sacred nature of the land, of place."5 Place in this sense extends, of course, to outer space, or Father Sky, as well as to Mother Earth. This perspective contrasts sharply with that of enthusiasts of space exploration who regard space as something "out there," beyond everyday experience, through which we should travel to reach planets and other objects that we will investigate, and, if possible, use to meet our own needs.

**Solves the aff better**

**​​Barsh 93** Russel Lawrence Barsh 1993 “Native American Sovereignty” University of Michigan Journal of Law Reform, Winter, 1993, 25 U. MICH. J. L. REF. 671 (Professor of Native American Studies at the University of Lethbridge)//Elmer

There no longer seems to be much difference in the Westernization of the Third World and of the indigenous world. Indigenous societies are usually more isolated geographically, so the process of convergence is understandably slower. But they are catching up. While world leaders lament the loss of biological diversity, which holds the key to the renewal and survival of ecosystems, our planet rapidly is losing its cultural diversity, which holds the key to the renewal and survival of human societies. Scientists and scholars search for an alternative in their theories while real alternative cultures disappear. It will be a real struggle to reassert an indigenous perspective on social justice, democracy, and environmental security. The hardest part of the struggle will be converting words to action, going beyond the familiar, empty rhetoric of sovereignty and cultural superiority. The struggle will be hardest here in the United States, where the gaps between rhetoric and reality have grown greater than anywhere on earth. This is the best place to begin, however, because this is the illusory "demonstration" that is studied by the rest of the world, including the indigenous peoples of other regions. Are American Indians ready to accept this global responsibility? The current generation of tribal leadership appears unwilling to try. It is firmly committed by its actions to the materialist path, and it is neutralized by its dependence on a continuing financial relationship with the national government and developers. The next generation of American Indians may be another matter. Disillusioned and critical, they may yet find a voice of their own that is both modern and truly indigenous, and they may have the courage to practice the ideals that their parents merely sloganize. Let us hope so. There is no alternative for Indian survival or for global survival.

## 6

**CP: States ought to adopt a binding international agreement that establishes outer space as a global commons not subject to appropriation and is enforced via a system of regulatory delimiting and global liability except in the instance of space elevators**

**Space Elevators constitute Appropriation – they impede orbits.**

**Matignon 19** Louis de Gouyon Matignon 3-3-2019 "LEGAL ASPECTS OF THE SPACE ELEVATOR TRANSPORTATION SYSTEM"<https://www.spacelegalissues.com/space-law-legal-aspects-of-the-space-elevator-transportation-system/> [PhD in space law (co-supervised by both Philippe Delebecque, from Université Paris 1 Panthéon-Sorbonne, France, and Christopher D. Johnson, from Georgetown University || regularly write articles on the website Space Legal Issues so as to popularise space law and public international law]//Elmer

An Earth-based space elevator would consist of a cable with one end attached to the surface near the equator and the other end in space beyond geostationary orbit. An orbit is the curved path through which objects in space move around a planet or a star. The 1967 Treaty’s regime and customary law enshrine the principle of non-appropriation and freedom of access to orbital positions. Space Law and International Telecommunication Laws combined to protect this use against any interference. The majority of space-launched objects are satellites that are launched in Earth’s orbit (a very small part of space objects – scientific objects for space exploration – are launched into outer space beyond terrestrial orbits). It is important to precise that an orbit does not exist: satellites describe orbits by obeying the general laws of universal attraction. Depending on the launching techniques and parameters, the orbital trajectory of a satellite may vary. Sun-synchronous satellites fly over a given location constantly at the same time in local civil time: they are used for remote sensing, meteorology or the study of the atmosphere. Geostationary satellites are placed in a very high orbit; they give an impression of immobility because they remain permanently at the same vertical point of a terrestrial point (they are mainly used for telecommunications and television broadcasting). A geocentric orbit or Earth orbit involves any object orbiting Planet Earth, such as the Moon or artificial satellites. Geocentric (having the Earth as its centre) orbits are organised as follow: 1) Low Earth orbit (LEO): geocentric orbits with altitudes (the height of an object above the average surface of the Earth’s oceans) from 100 to 2 000 kilometres. Satellites in LEO have a small momentary field of view, only able to observe and communicate with a fraction of the Earth at a time, meaning a network or constellation of satellites is required in order to provide continuous coverage. Satellites in lower regions of LEO also suffer from fast orbital decay (in orbital mechanics, decay is a gradual decrease of the distance between two orbiting bodies at their closest approach, the periapsis, over many orbital periods), requiring either periodic reboosting to maintain a stable orbit, or launching replacement satellites when old ones re-enter. 2) Medium Earth orbit (MEO), also known as an intermediate circular orbit: geocentric orbits ranging in altitude from 2 000 kilometres to just below geosynchronous orbit at 35 786 kilometres. The most common use for satellites in this region is for navigation, communication, and geodetic/space environment science. The most common altitude is approximately 20 000 kilometres which yields an orbital period of twelve hours. 3) Geosynchronous orbit (GSO) and geostationary orbit (GEO) are orbits around Earth at an altitude of 35 786 kilometres matching Earth’s sidereal rotation period. All geosynchronous and geostationary orbits have a semi-major axis of 42 164 kilometres. A geostationary orbit stays exactly above the equator, whereas a geosynchronous orbit may swing north and south to cover more of the Earth’s surface. Communications satellites and weather satellites are often placed in geostationary orbits, so that the satellite antennae (located on Earth) that communicate with them do not have to rotate to track them, but can be pointed permanently at the position in the sky where the satellites are located. 4) High Earth orbit: geocentric orbits above the altitude of 35 786 kilometres. The competing forces of gravity, which is stronger at the lower end, and the outward/upward centrifugal force, which is stronger at the upper end, would result in the cable being held up, under tension, and stationary over a single position on Earth. With the tether deployed, climbers could repeatedly climb the tether to space by mechanical means, releasing their cargo to orbit. Climbers could also descend the tether to return cargo to the surface from orbit.

**Private Companies are pursuing Space Elevators**

**Alfano 15** Andrea Alfano 8-18-2015 “All Of These Companies Are Working On A Space Elevator”<https://www.techtimes.com/articles/77612/20150818/companies-working-space-elevator.htm> (Writer at the Tech Times)//Elmer

Space elevators are solid proof that any mundane object sounds way cooler if you stick the word "space" in front of it. But there's much more than coolness at stake when building a space elevator – this technology has the potential to revolutionize space transportation, and the Canadian private space company Thoth Technology that was recently awarded a patent for its space elevator design isn't the only company in the game. One of the other major players is a U.S.-based company called LiftPort Group, founded by space entrepreneur Michael Laine in 2003. Its plan for a space elevator is vastly different from the one for which Thoth received a patent, however. Whereas Thoth's plans entail tethering a 12-mile-high inflatable space elevator to the Earth, LiftPort is shooting for the moon. Originally, LiftPort had planned to build an Earth elevator, too, but it abandoned the idea in 2007 in favor of building a lunar elevator. The basic design for a lunar elevator is an anchor in the moon that is attached to a cable that extends to a space station situated at a very special point. Known as a Lagrange Point, this is the gravitational tipping point between the Earth and the moon, where their gravitational pulls essentially cancel one another out. A robot could then travel up and down the tether, ferrying cargo between the moon and the station. Out farther in space, a counterweight would balance out the system. Both types of space elevator are intended to increase space access, but in very different ways. Thoth's Earth elevator aims to make launches easier by starting off 12 miles above the Earth's surface. LiftPort's space elevator aims to increase access to the moon in particular, because it is much easier to launch a rocket to the Lagrange Point and dock it at a space station than it is to get to the moon directly. There's a third major company based in Japan called Obayashi Corp. whose plans look like a hybrid of Thoth's and LiftPort's. Obayashi is not a space company, however – it's actually a construction company. Like Thoth, Obayashi plans to build an Earth elevator. But its Earth elevator would consist of a cable tethered to the blue planet, a robotic cargo-carrier, a space station, and a counterweight. It essentially looks like LiftPort's plans, but stuck to the Earth instead of to the moon.

**Yes Space Elevators – NASA confirms.**

**Snowden 18** Scott Snowden 10-2-2018 "A colossal elevator to space could be going up sooner than you ever imagined"<https://www.nbcnews.com/mach/science/colossal-elevator-space-could-be-going-sooner-you-ever-imagined-ncna915421> (Scott has written about science and technology for 20 years for publications around the world. He covers environmental technology for Forbes.)//Elmer

For more than half a century, rockets have been the only way to go to space. But in the not-too-distant future, we may have another option for sending up people and payloads: a colossal elevator extending from Earth’s surface up to an altitude of 22,000 miles, where geosynchronous satellites orbit. NASA says the basic concept of a space elevator is sound, and researchers around the world are optimistic that one can be built. The Obayashi Corp., a global construction firm based in Tokyo, has said it will build one by 2050, and China wants to build one as soon as 2045. Now an experiment to be conducted soon aboard the International Space Station will help determine the real-world feasibility of a space elevator. “The space elevator is the Holy Grail of space exploration,” says Michio Kaku, a professor of physics at City College of New York and a noted futurist. “Imagine pushing the ‘up’ button of an elevator and taking a ride into the heavens. It could open up space to the average person.”

**Regardless of completion, Elevators spur investment in Nanotechnology**

Liam **O’Brien 16**. University of Wollongong. 07/2016. “Nanotechnology in Space.” Young Scientists Journal; Canterbury, no. 19, p. 22.

Nanotechnology is at the forefront of scientific development, continuing to astound and innovate. Likewise, the space industry is rapidly increasing in sophistication and competition, with companies such as SpaceX, Blue Origin and Virgin Galactic becoming increasingly prevalent in what could become a new commercial space race. The various space programs over the past 60 years have led to a multitude of beneficial impacts for everyday society. Nanotechnology, through research and development in space has the potential to do the same. Potential applications of nanotechnology in space are numerous, many of them have the potential to capture and inspire generations to come. One of these applications is the space elevator. By using carbon nanotubes, a super light yet strong material, this concept would be an actual physical structure from the surface of the Earth to an altitude of approximately 36 000 km. The tallest building in the world would fit into this elevator over 42 000 times. The counterweight, used to keep the elevator taught, is proposed to be an asteroid. This would need to be at a distance of 100 000 km, a quarter of the distance to the moon. The benefits of such a structure would be enormous. 95% of a space shuttle's weight at take-off is fuel, costing US$ 20 000 per kilogram to send something into space. However, with a space elevator the cost per kilogram can be reduced to as little as US$ 200. Exploration to other planets can begin at the tower, and travel to and from the moon could become as simple as a morning commute to work. Solar sails provide the means to travel large distances and incredible speeds. Much like sails on a boat use wind, the solar sail uses light as a source of propulsion. Ideally these sails would be kilometres in length and only a few micrometres in thickness. This provides us with the ability to travel at speeds previously unheard of. Using carbon nanotubes once again, a solar sail has the capability to travel at 39 756 km/s which is 13% of the speed of light! This sail could reach Pluto in an astonishing 1.7 days, and Alpha Centauri in just 32 years. Space travel to other planets, other stars, could be possible with solar sails. The Planetary Society is funding for a space sail of itself, and has successfully launched one into orbit. NASA has also sent a sail into orbit, allowing it to burn up in the atmosphere after 240 days. Investing time and resources into nanotechnology for space exploration has benefits for society today. Materials such as graphene are being used in modern manufacturing at an increasing rate as the applications become utilised. Carbon nanotubes will change the way we think about materials and their strength. These nanotubes have a tensile strength one hundred times that of steel, yet are only a sixth of the weight. Imagine light weight vehicles using less petrol and energy as well as being just as strong as regular vehicles. With potentials to revolutionize the way we think about space travel, nanotechnology has a bright future. As a new field of science, it has the capability to push the human race to the outer reaches of our galaxy and hopefully one day to other stars. It will inspire generations of explorers and dreamers to challenge themselves and advance the human race into the next era. As Richard Feynman said in his 1959 talk 'There's Plenty of Room at the Bottom' "A field in which little has been done, but in which an enormous amount can be done. There is still plenty more to achieve.

**Nano tech solves warming**

Bhavya **Khullar**. September 4, 20**17**. Nanomaterials Could Combat Climate Change and Reduce Pollution. https://www.scientificamerican.com/article/nanomaterials-could-combat-climate-change-and-reduce-pollution/

The list of environmental problems that the world faces may be huge, but some strategies for solving them are remarkably small. First explored for applications in microscopy and computing, nanomaterials—materials made up of units that are each thousands of times smaller than the thickness of a human hair—are emerging as useful for tackling threats to our planet’s well-being. Scientists across the globe are developing nanomaterials that can efficiently use carbon dioxide from the air, capture toxic pollutants from water and degrade solid waste into useful products. “Nanomaterials could help us mitigate pollution. They are efficient catalysts and mostly recyclable. Now, they have to become economical for commercialization and better to replace present-day technologies completely,” says [Arun Chattopadhyay](http://www.iitg.ac.in/arun/), a member of the chemistry faculty at the Center for Nanotechnology, Indian Institute of Technology Guwahati. To help slow the climate-changing rise in atmospheric CO2levels, researchers have developed nanoCO2 harvesters that can suck atmospheric carbon dioxide and deploy it for industrial purposes. “Nanomaterials can convert carbon dioxide into useful products like alcohol. The materials could be simple chemical catalysts or photochemical in nature that work in the presence of sunlight,” says Chattopadhyay, who has been working with nanomaterials to tackle environmental pollutants for more than a decade. Many research groups are working to address a problem that, if solved, could be a holy grail in combating climate change: how to pull CO2 out of the atmosphere and convert it into useful products. Chattopadhyay isn’t alone. Many research groups are working to address a problem that, if solved, could be a holy grail in combating climate change: how to pull CO2 out of the atmosphere and convert it into useful products. Nanoparticles offer a promising approach to this because they have a large surface-area-to-volume ratio for interacting with CO2 and properties that allow them to facilitate the conversion of CO2into other things. The challenge is to make them economically viable. Researchers have tried everything from metallic to carbon-based nanoparticles to reduce the cost, but so far they haven’t become efficient enough for industrial-scale application. One of the most recent points of progress in this area is work by scientists at the CSIR-Indian Institute of Petroleum and the Lille University of Science and Technology in France. The researchers developed a nanoCO2 harvester that uses water and sunlight to convert atmospheric CO2 into methanol, which can be employed as an engine fuel, a solvent, an antifreeze agent and a diluent of ethanol. Made by wrapping a layer of modified graphene oxide around spheres of copper zinc oxide and magnetite, the material looks like a miniature golf ball, captures CO2 more efficiently than conventional catalysts and can be readily reused, according to Suman Jain, senior scientist of the Indian Institute of Petroleum, Dehradun in India, who developed the nanoCO2harvester. Jain says that the nanoCO2 harvester has a large molecular surface area and captures more CO2 than a conventional catalyst with similar surface area would, which makes the conversion more efficient. But due to their small size, the nanoparticles have a tendency to clump up, making them inactive with prolonged use. Jain adds that synthesizing useful nanoparticle-based materials is also challenging because it’s hard to make the particles a consistent size. Chattopadhyay says the efficiency of such materials can be improved further, providing hope for useful application in the future. CLEANSING WATER Most toxic dyes used in textile and leather industries can be captured with nanoparticles. “Water pollutants such as dyes from human-created waste like those from tanneries could get to natural sources of water like deep tube wells or groundwater if wastewater from these industries is left untreated,” says Chattopadhyay. “This problem is rather difficult to solve.” An international group of researchers led by professor Elzbieta Megiel of the University of Warsaw in Poland reports that nanomaterials have been widely studied for removing heavy metals and dyes from wastewater. According to the research team, adsorption processes using materials containing magnetic nanoparticles are highly effective and can be easily performed because such nanoparticles have a large number of sites on their surface that can capture pollutants and don’t readily degrade in water. Chattopadhyay adds that appropriately designed magnetic nanomaterials can be used to separate pollutants such as arsenic, lead, chromium and mercury from water. However, the nanotech-based approach has to be more efficient than conventional water purification technology to make it worthwhile. In addition to removing dyes and metals, nanomaterials can also be used to clean up oil spills. Researchers led by Pulickel Ajayan at Rice University in Houston, Texas, have developed a reusable nanosponge that can remove oil from contaminated seawater.

**Warming causes extinction**

**Schultz 16** (Robert Schultz [Retired Professor and Chair of Computer Information Systems at Woodbury University] “Modern Technology and Human Extinction,” <http://proceedings.informingscience.org/InSITE2016/InSITE16p131-145Schultz2307.pdf>) RW

There is consensus that there is a relatively short window to reduce carbon emissions before drastic effects occur. Recent credible projections of the result of lack of rapid drastic action is an average temperature increase of about 10o F by 2050. This change alone will be incredibly disruptive to all life, but will also cause great weather and climate change. For comparison purposes, a 10 degree (Fahrenheit) decrease was enough to cause an ice layer 4000 feet thick over Wisconsin (Co2gether, 2012). Recently relevant information has surfaced about a massive previous extinction. This is the Permian extinction, which happened 252 million years ago, during which 95% of all species on earth, both terrestrial and aquatic, vanished. The ocean temperature after almost all life had disappeared was 15 degrees (Fahrenheit) above current ocean temperatures. Recent information about the Permian extinction indicates it was caused by a rapid increase in land and ocean temperatures, caused by the sudden appearance of stupendous amounts of carbon in the form of greenhouse gases (Kolbert, 2014, pp. 102-144). The origin of the carbon in these enormous quantities is not yet known, but one possibility is the sudden release of methane gases stored in permafrost. This is also a possibility in our current situation. If so, extinction would be a natural side effect of human processes. There is also a real but smaller possibility of what is called “runaway greenhouse,” in which the earth’s temperature becomes like Venus’ surface temperature of 800o The threat of extinction here is not entirely sudden. The threat is, if anything, worse. Changes in the atmosphere--mainly increases in the concentration of greenhouse gases in the atmosphere-- can start processes that can’t be reversed but which take long periods of time to manifest. “Runaway greenhouse” may be the worst. Once again, suggestions of technological solutions to this situation should be treated with some skepticism. These proposals are often made by technophiles ignoring all the evidence that technology is very much subject to unanticipated side effects and unanticipated failures. What has happened concerning the depletion of the ozone layer should be a clear warning against the facile uses of technology through geoengineering to alter the makeup of the entire planet and its atmosphere. The complicating factor in assessing extinction likelihood from climate change is corporations, especially American fossil fuel corporations such as Exxon-Mobil and Shell. Through their contributions, they have been able to delay legislation ameliorating global warming and climate change. As mentioned before, recently released papers from Exxon-Mobil show that the corporation did accept the scientific findings about global warming and climate change. But they concluded that maintaining their profits was more important than acting to ameliorate climate change. Since it is not a matter of getting corporations to appreciate scientific facts, the chances of extinction from climate change are good. To ameliorate climate change, it is important to leave a high percentage of fossil fuel reserves in the ground. But this is exactly what a profit-seeking fossil fuel corporation cannot do. One can still hope that because fossil fuel corporations are made up of individuals, increasingly bad consequences of global warming and climate change will change their minds about profits. But because of the lag in effects, this mind change will probably be too late. So I conclude we will probably see something like the effects of the Permian extinction perhaps some time around 2050. (The Permian extinction was 95% extinction of all species.) This assumes the release of methane from the arctic will take place around then.