## 1

#### Interpretation: Appropriation refers to sovereign claims of land.

Melissa J. **Durkee 19**, J. Alton Hosch Associate Professor of Law, University of Georgia, "Interstitial Space Law," Washington University Law Review 97, no. 2 423-482

Those answering this question in the affirmative have access to a strong textual argument. Article II of the Outer Space Treaty specifically references "national" **appropriation**.17 9 The context surrounding that appears to confirm that the prohibition of "national" appropriation is directed at nations, as only a nation could have a legitimate "claim of sovereignty." 180 Moreover, "occupation" refers to old international legal doctrines that once allowed nations to claim territory based on occupation. The historical context within which the treaty was drafted supports this position, as the concern of the time was colonization, not commercial use of space resources. As for private parties, they are specifically anticipated by the treaty: **Article VI states that States Parties bear international responsibility for activities by "non-governmental entities" as well as governmental agencies**.' 8 1 The fact that they are anticipated by the treaty but not included in the Article II prohibition on appropriation suggests that the treaty intended to prohibit only national appropriation of outer space resources.18 2 Those claiming that the treaty prohibits both national appropriation and appropriation by private parties can marshal their own textual argument. Article VI defines "national activities in outer space" to include both "activities . .. carried on by governmental agencies" and those carried on by "non-governmental entities." 8 3 This definition of "national" must inform Article II's prohibition on "national" appropriation and thus extend to a nation's citizens **and commercial entities** as well as governmental activities. Moreover, a contrary interpretation defies logic: **if nations themselves may not claim property rights to outer space objects, they have no power to confer those rights on their nationals.**184

#### Violation: they only defend asteroid mining which is extraction – those are distinct – prefer rigorous legal analysis. This card is so good it ends the debate.

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Secondly, even if nations, businesses, and individuals are equally bound by the non-appropriation principle, the scope of that restriction is not entirely clear from the text of Article II.59 It is unlikely, however, that the non-appropriation principle is an absolute ban on the ownership of resources extracted in outer space.

An interpretation of Article II supporting a blanket ban on resource ownership is unwarranted by the text of the OST and illfounded on account of the international community’s common practices. Scholars have noted that the international community has never questioned whether scientific samples harvested from celestial bodies belong to the extracting nation.60 Furthermore, space-faring members of the international community rejected the Moon Treaty precisely because it prohibited all forms of ownership in resources extracted from celestial bodies.61 The space-faring nations’ support for the OST, coupled with their rejection of an alternative set of rules governing extracted resources, is at the very least an indication of what those nations believe the non-appropriation principle to stand for.

It is equally improbable that the international community drafted the non-appropriation principle to be merely idealistic rhetoric. The OST leaves no room for interpretations to squirm out from under its ban on sovereign claims of land.62 The following section illustrates, however, that the distinction between sovereign ownership of land, and the vestment of property rights in resources extracted from that land, is nothing new.

II. Legal Regimes Distinguishing Resource Extraction from Appropriation

Although the OST does not provide a comprehensive guideline for resource extraction in outer space, its foundational logic provides a workable distinction between ownership and use. This part explores three property regimes developed under the same fundamental constraints as the non-appropriation principle: the United Nations Convention on the Law of the Sea (“UNCLOS”), the Antarctica Treaty System, and the prior appropriation doctrine as applied in United States water law.63 Under each regime, parties may establish some form of ownership in extracted resources despite being restricted from claiming sovereignty over the underlying land.

Each section includes a brief discussion of the property regime’s history, its major traits and their relationship to the overarching characteristics of the non-appropriation principle. This part further describes how each property regime fits within the non-appropriation principle’s prohibition on claims to land, while prohibiting waste, separating land ownership from rights to extracted resources, enforcing liability for destruction or damage, and establishing a simple regulatory system to manage claims.

A. The Law(s) of the Sea: UNCLOS and the Seabed Act

International and national maritime laws addressing resource extraction deal with many of the same obstacles present in outer space. Like outer space, “[t]he seabed is rich in minerals…[c]ollecting and mining these minerals is expensive and requires sophisticated technology capable of reaching the great depths.”64 Additionally, the international regulatory regime created to address seabed mining contemplates widely applicable issues including the “protection and preservation of the marine environment,” “promot[ing] the peaceful uses of the seas and oceans,” and the “efficient utilization” of the resources therein.65 Although international law forms the backbone of seabed mining regulations, individual nations have concurrently developed their own regulations.

The foremost international maritime law is the United Nations Convention on the Law of the Sea (“UNCLOS”).66 The current iteration of UNCLOS came into force in 1982, replacing decades of international treaties that had not addressed seabed mining.67 The 1982 UNCLOS established the International Seabed Authority (“ISA”), a body responsible for managing seabed mining through regulations and licensing.68 UNCLOS further established a dispute resolution system through the Seabed Disputes Chamber of the International Tribunal.69

The United States found some features of the 1982 UNCLOS objectionable. Originally, the ISA was empowered to create an entity called the “Enterprise”, which would conduct mining operations for the benefit of developing countries alongside private mining operations.70 Under this agreement, private businesses were compelled to provide the Enterprise with the location of discovered minerals and the technology necessary to extract them, all in addition to the funding from member states.71 Some of these requirements proved controversial.

Several developed nations subsequently rejected UNCLOS and signed the “Provisional Understanding Regarding Deep Seabed Matters” (“The Provisional Understanding”) in 1984.72 The Provisional Understanding established “…procedures to follow in order to avoid overlapping claims to seabed sites,” while encouraging reciprocal recognition of other party’s claims.73 The Group of 77—a coalition of developing countries—and the ISA, criticized the Provisional Understanding on the grounds that it established an illegal regime.74 As one critic concedes, however, the Provisional Understanding is probably legal because it “…neither claims sovereignty or ownership…nor grants exclusive rights…” to seabed areas.75

UNCLOS was renegotiated in 1994, in part due to the changes brought about by the end of the Cold War and decreased focus on deep-seabed mining.76 Among the changes, it secured permanent seats on the ISA Council for the United States and Russia,77 created a Finance Committee consisting of the five parties with the largest financial contributions,78 removed mandatory funding of the Enterprise,79 made technology-sharing optional,80 and made development plans a prerequisite for granting permits for resource mining.81 Despite these changes, the United States “remains the only major seafaring nation” that has not ratified 1994 Agreement.82

The United States’ disagreements with the 1982 UNCLOS led to the creation of an interim national law called the Deep Seabed Hard Mineral Resources Act (“Seabed Act”).83 While the Seabed Act is intended as a temporary regime, it acknowledges that a functional international regime may take some time to develop.84 Under the Seabed Act, companies are required to obtain licenses and permits to explore and extract, both of which expire after a period of years.85

The United States has not entirely abandoned UNCLOS. Addressing recent conflicts in the South China Sea, President Trump called for “…claimants to clarify and comport their maritime claims in accordance with the international law of the sea as reflected in the 1982 United Nations Convention on the Law of the Sea…”86 Additionally, several United States presidents have supported ratification of UNCLOS since the 1994 Agreement.87 And, although President Reagan was dissatisfied with the 1982 UNCLOS, changes incorporated into the 1994 Agreement have addressed those complaints.88

The laws regulating resource extraction in the sea share major traits with the non-appropriation principle, as UNCLOS and the Seabed Act allow parties to establish property rights in extracted resources without violating the non-appropriation principle. First, under both regimes, parties extract minerals without laying claim to underlying land.89 Secondly, UNCLOS’s requirement for development plans and the Seabed Act’s licensing-system place some pressure on parties to extract resources or forfeit their rights.90 This feature prevents parties from sleeping on a license, thereby encouraging productive use of land. In other words, the licensing system reduces waste and protects against de facto ownership of land resulting from inordinately long periods of occupation. The United States, by adopting both traits from UNCLOS, and voicing its willingness to enter into a robust international regime for resource extraction, indicates support for an international regime reflecting those features.

Even if the United States’ framework under the Seabed Act were adopted as a model for resource extraction in space, it comports with the non-appropriation principle. The United States’ conceptual distinction between land ownership and resource extraction is a gauge for whether it would accept a similar arrangement for space law.91 And, while the United States is only one of many members of the international community, it is difficult to conceive of a successful international agreement without the involvement of the major spacefaring nations.

B. The Antarctic Treaty System

The Antarctic Treaty92 and the subsequent agreements collectively regulating the peaceful use of Antarctica form the “Antarctic Treaty System.”93 The first of these treaties was created in 1959 to preserve environmental integrity and prohibit violence in the region.94 Antarctica’s size, impenetrableness, and vast resource stores have made it a reoccurring model for outer space law.95 While the Antarctic Treaty System shares key features with the law of outer space, its development and subsequent legal regime is distinctive.

Several nations made property claims to Antarctica before the first Antarctic Treaty.96 Parties suspended those claims, however, in effort to moderate claims and prevent Antarctica from becoming a site of violent competition.97 Although the 1959 Antarctic Treaty does not directly address resource-mining, parties “…understood that the question of how Antarctic mineral activity was to be regulated…would not go away.”98

The international community originally attempted to establish a legal regime for Antarctica that distinguished between sovereign claims and resource extraction. The Convention on the Regulation of Antarctic Mineral Resource Act (“CRAMRA”) was the first venture to provide a foundation for an international property regime in Antarctica.99 CRAMRA defined, as a means to regulate resource mining, three categories of resource-related activity: “prospecting”, “exploration”, and “development.”100 The Regulatory Committee, one of several institutions established under CRAMRA, was responsible for considering permit applications for the “exploration and development” of mineral resources.101 Unlike exploration and development, prospecting does not require the authorization of any of the institutions.102

CRAMRA’s definition of “prospecting” is crucial for understanding the role of property rights under the regime. Prospecting includes the investigation of areas for potential exploration or development using a variety of sensing technologies.103 Dredging, excavation, or drilling, however, are defined as “prospecting” only if used for the purpose of obtaining small-scale samples or drilling less than 25 metres.104 Furthermore, activities defined as “prospecting” do not confer property rights to mineral resources.105 As a result, an operator gains property rights to mineral resources “…at the exact point where prospecting activities cease to be prospecting activities and become exploration or development activities.”106

The six years of negotiation that culminated in CRAMRA107 were not ultimately fruitful. Under its terms, CRAMRA could not enter into force unless all states with territorial claims to Antarctica were parties to it.108 Australia and France, while supportive of CRAMRA during negotiations, stated in 1989 that they would not ratify the Convention.109 Consequently, no nations have ratified CRAMRA.110

Antarctic resource extraction is currently regulated under the Protocol on Environmental Protection to the Antarctic Treaty, also known as the “Madrid Protocol”.111 Concluded in 1991, the Madrid Protocol prohibits “…[a]ny activity relating to mineral resources, other than scientific research…”112 Parties to the Madrid Protocol are able to reconsider the ban on commercial resource mining in 2048 and have reaffirmed the moratorium as recently as 2016.113

Although it was not ultimately adopted, CRAMRA’s negotiation provides insight into the international community’s willingness to create a resource extraction regime starting from a premise that ownership and use are distinct. Although CRAMRA permitted nations to extract resources, extraction explicitly could not amount to ownership of the underlying land.114 From that premise, CRAMRA does not grant property rights to parties who have merely used sensing technologies on the land, requiring more significant labor through activities like drilling or dredging.115

While the Madrid Protocol removes commercial resource extraction as an option, it allows nations to extract scientific samples without requiring—or permitting—claims of sovereignty.116 Because the Madrid Protocol “neither modif[ies] nor amends” the framework laid out by the Antarctic Treaty,117 extraction—whether scientific or commercial—remains separate from the ownership of underlying land. While the international community chose to restrict commercial extraction in Antarctica, that arrangement is a result of environmental concerns and not the failure to develop a property regime.118 CRAMRA’s successful illustration of a property regime remains instructive for the international community as it develops finer points of space law.

C. The Prior Appropriation Doctrine

The prior appropriation doctrine is a system developed in the American West to simplify miners’ water claims, granting rights to use the water to whoever made beneficial use of it first.119 The prior appropriation doctrine is useful for analyzing the law of outer space in both functional and abstract ways. First, scientists expect that water will be necessary for creating fuel and breathable air in outer space.120 Secondly, the prior appropriation doctrine evolved to resolve various claims in the water-scarce American West.121 The prior appropriation doctrine developed against the backdrop of commercial/private tension, embodies deeply-rooted American ethical assumptions, and contemplates the “public ownership” of underlying land.122 The prior appropriation doctrine is also “a rule of scarcity, not plenty,” and is therefore concerned with managing limited resources.123 These features of the doctrine make it a useful comparison to the demands of outer space resource extraction. Most importantly, the prior appropriation doctrine has resulted in an intuitive set of rules distinguishing between ownership and productive use.

The prior appropriation doctrine grew out of the chaos and grit that embodied the mining rush to the Western United States.124 The unpredictable availability of water, combined with the need for a simple adjudicative system, led early miners and farmers to adopt an “intuitive common sense” system of rules to resolve water claims.125 Essentially, the first claimant to make actual beneficial use of the water has senior rights to later users.126 Claimants do not own the land, however, but rather the right to use the water.127 Consequently, claimants may transfer their rights to the use but the public ultimately owns the water.128 Each of these features is explored below.

Central to the prior appropriation doctrine, and exemplified in Colorado’s constitution, is that water is a publicly owned resource.129 This concept stands in contrast to the idea that ownership of land is tied to ownership of the land’s water.130 The prior appropriation doctrine severs those concepts from one another, justifying citizens’ right to appropriate water while nullifying riparian claims.131 This feature is a doctrinal cornerstone of the prior appropriation system, as it distributes ultimate decision-making authority to the public while protecting valid claims.

Not all claimants establish or retain valid claims to use diverted water. Prior appropriation requires a claimant to make actual beneficial use of the water to obtain and retain their right to continue that use.132 In the context of the doctrine’s development, this stipulation prevented vast, speculative hoarding of property for the purpose of a later sale.133 This emphasis on “antispeculation” is derived from the era’s intensely anti-monopoly sentiment, favoring the distribution of water rights to those who could make actual use of the land.134 Therefore, claimants must define the location and expected scope of their use to establish or transfer rights.135

Parties who establish valid claims are protected against other future users who seek to use the same water at the earlier claimant’s detriment. Parties who make actual beneficial use of water have “seniority” over later claimants who use the water for similar purposes.136 In this system of senior and junior claimants, the latter must yield their use to senior claimants in times of water scarcity.137 Although this arrangement protects senior claimants from losing their use in times of scarcity, one scholar notes that claims often avoid their seniority.138 Furthermore, some states simply prohibit senior claimants from enforcing their priority over junior claimants when doing so would be futile.139 Claimants may actually benefit from avoiding enforcement, especially when enforcement is sought solely to prove seniority at the expense of junior claimants.140

Because prior appropriation separates the ownership of land from rights to beneficial use of water, claimants can freely transfer their validly established water rights.141 The technology claimants use to divert water for “out-of-stream” uses, like mining and agriculture, helps make the use “measurable and enforceable,” and therefore identifiable for transfer.142 Although transfers require new users to satisfy the actual beneficial-use requirement, the arrangement is flexible enough to facilitate the temporary transfer of use rights.143 The prior appropriation’s system of senior and junior claimants is enforced and regulated by a centralized authority. Acting in a “trusteeship role,” the government is responsible for enforcing validly established water rights.144 Although enforcement is sometimes avoided, as noted above, the value of a senior claim is necessarily dependent on the enforcement of those rights, especially when water is in short supply.145 In addition to adjudicating claims, the government is responsible for the “conservation of the public’s water resources.”146 Here, the implications of the “public ownership” concept is significant:

…[T]he state assumed a trusteeship role to administer the waters of the state for the benefit of the public. As such, it became responsible not only for minimal administrative functions but also for administration of the kind a trustee owes to the beneficiary of the trust. Its responsibilities include, first and foremost, the conservation of the estate and avoidance of waste; second, the promotion of beneficial use by assisting the appropriator in achieving use objectives to the maximum extent feasible; third, the representation of beneficiaries in a parens patriae capacity and maintaining the use regimen on the river system; and fourth, the promotion of efficiency and prudence of the kind expected of a trustee.147

The prior appropriation doctrine serves as a unique example for space law because of how it conceptualizes land ownership. Underlying land is available for use not because it is “unowned,” but because it is owned by a community who has the right to make productive use of it.148 Because the community owns the land, claimants have an obligation to use the land properly and the government is responsible for stewardship.149 This framing fits neatly with proponents of the idea that outer space is collectively “owned” by the international community. Regardless, stewardship and government ownership do not necessarily displace the potential for productive use.

Parties do not violate the non-appropriation principle simply by extracting—or as here, diverting—resources from the land. At no point does extraction equate to a sovereign claim over the land. In instances where non-productive use or the like violates those principles, property rights disappear. Furthermore, the OST encourages the idea that outer space is to be used to benefit the broader international community.150 The prior appropriation doctrine illustrates that parties can establish and transfer robust property rights in resources independent from land-ownership, while promoting beneficial use

#### Standards:

#### 1] Precision outweighs – non-topical affs violate tournament rules so the judge doesn’t have the jurisdiction to vote on them and it controls the internal to pragmatic offense in a question of models because it decks predictable stasis.

#### 2] Limits – allowing extraction to equate to sovereign claims explodes limits by shifting the debate away from sovereign claims to celestial bodies to permutations of parts of celestial bodies that companies could extract – leads to unbeatable affs that just ban extraction of one resource which the neg can’t ever predict. Forcing the affirmative to defend sovereign claims to celestial bodies is net better.

#### 3] TVA – defend an aff that bans sovereign claims to celestial bodies – solves your offense since you still get property rights fight offense.

#### 5] Paradigm Issues –

#### a] Fairness first-only way to provide access to an educational debate while making sure both sides have equal access to the ballot

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

#### c] 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.

#### d] No RVI’s - 1] Forces the 1NC to go all-in on Theory which kills substance education, 2] Encourages Baiting since the 1AC will purposely be abusive, and 3] Illogical – you shouldn’t win for not being abusive.

## 2

#### Text – The United States should unilaterally restrict asteroid mining done by private entities.

#### Counterplan competes – the Plan is a multilateral agreement while the CP is just the United States.

#### Counterplan solves the Aff – 1] 1AC Gallagher says that US Leadership spill-over to follow-on and norming which solves Advantage 1 and 2] 1AC Wall says the US actions over Mining fractures governance – the CP sets the US in-line.

#### Unilateral Actions solve – they’re legally binding and perceived internationally.

Su 17 Jinyuan, S. U. "Space arms control: Lex lata and currently active proposals." Asian Journal of International Law 7.1 (2017): 61-93. //Elmer

The unilateral statements led by Russia are important confidence-building measures for the security of outer space. However, in international law unilateral acts may also imply binding obligations, subject to the fulfilment of some conditions. The binding character of an international obligation assumed unilaterally, as the customary principle of pacta sunt servanda, is based on good faith. The legal effect of unilateral statements made vis-à-vis the whole world community was addressed by the ICJ in the Nuclear Tests case, in which France committed to cease nuclear tests in the South Pacific. The ICJ expounded: It is well recognized that declarations made by way of unilateral acts, concerning legal or factual situations, may have the effect of creating legal obligations. Declarations of this kind may be, and often are, very specific. When it is the intention of the State making the declaration that it should become bound according to its terms, that intention confers on the declaration the character of a legal undertaking, the State being thenceforth legally required to follow a course of conduct consistent with the declaration. An undertaking of this kind, if given publicly, and with an intent to be bound, even though not made within the context of international negotiations, is binding. In these circumstances, nothing in the nature of a quid pro quo nor any subsequent acceptance of the declaration, nor even any reply or reaction from other States, is required for the declaration to take effect, since such a requirement would be inconsistent with the strictly unilateral nature of the juridical act by which the pronouncement by the State was made.92

#### China uses space coop to bolster perception of credible leadership – that causes space war and conventional conflict in the SCS

Fisher 15 Richard D. Fisher 2-8-2015 “China’s Military Ambitions in Space and America’s Response” <http://www.uscc.gov/sites/default/files/Fisher_Testimony_2.18.15.pdf> (President of Pacific Strategies, Inc)//Elmer

As with the former Soviet Union, China’s pursuit of regional and then global military power is not rooted in an existential threat, but in the CCP’s fears for its power position. This requires a CCP-led “rejuvenation” of China, entailing mobilization for greater power, ever more control over its own people, and then increasing control over others. Another result is China’s choice to be hostile to Western rules or concepts that may constrain China’s power. This justifies an essential Chinese rejection of American or Western conceptions of transparency and restraint, or verifiable weapons control in space which might constrain its power. This mirrors the CCP/PLA’s repeated refusal of U.S. requests to consider real nuclear weapons transparency and control, transparency over its nuclear and missile exports, and --from many of its neighbors and Washington -- fair settlement of territorial disputes which threaten war. The latter, especially in the South China Sea, is instructive. As it has gained military power in the South China Sea, China has sought to change the strategic environment and dictate new rules to increase its security at the expense of others. Once it gains commanding strength and position in space, will China do the same? For the United States, cooperation with China in space may yield some benefits, but it likely will have little impact on the direction and severity of terrestrial conflicts which will dominate relations with China. One can see the value of meeting with Chinese space officials, especially higher CCP and PLA leaders, to advance concerns over their actions in space and to promote transparency. But at this juncture, before China has achieved levels of “space dominance”, it is crucial to link any real cooperation with China to its behavior in space and elsewhere which threatens U.S. security. Furthermore, allowing China increasing access to U.S. space technology, space corporations, or government institutions at this time presents two risks. First it could encourage China to advance an illusion of cooperation with the U.S. and the West while differences on Earth become sharper. This could become useful for Beijing to deflect criticism on other issues, or even to obtain leverage over U.S. options and actions. Second, as has been proven repeatedly, China will exploit any new access for espionage gains to strengthen its own space and military sectors. 2 China’s increasing space power, however, like its growing economic and political power, cannot be “contained.” Russia appears ready to greatly expand space and military cooperation with China as part of a larger strategic alignment, while the European Space Agency is edging toward greater cooperation with China. These attractions may only increase if China has the only LEO manned space station in the mid-2020s. Already a top commercial space service and technology provider, China will use its gathering space diplomacy tools to aid its pursuit of economic, political and military influence in critical regions like Africa and Latin America. The challenge for the United States is to maintain the means to compete with China in space both in military and non-military endeavors. China’s potential for developing new space combat systems means the U.S. must be able to rapidly develop appropriate deterrent capabilities. There should also be a more developed U.S. capability to rapidly repopulate satellite systems taken down by PLA attacks, and there should be more terrestrial or airborne systems to compensate for lost navigation, communication and surveillance satellites. In addition, as the PLA moves substantially out to deep space, the Moon, or to the Lagrangian Points, it will be necessary for the U.S. to consider a compensating presence that is affordable, attractive to a coalition of democracies, and helps to deter China from seeking strategic advantage. Strategic priorities would suggest that a presence on or near the Moon is of greater importance than going to Mars. A multinational government-private presence on the Moon is one option, as is the likely less expensive option of a far cis-lunar presence to further develop manned deep space capabilities. As was the case with the former Soviet Union, relative peace on Earth or in space will not truly be possible until China evolves beyond its Leninist dictatorship. In its final years, the Soviet Union was on the cusp of deploying multiple space combat systems despite years of U.S.-Soviet space diplomacy. Real space cooperation between Russia the West became possible only after the fall of the Soviet Union, and may again become threatened by Russia’s slide into authoritarian aggression. Substantive cooperation with China in space offers no assurance that China will change its threatening behaviors on Earth or in space, but does create opportunities for China to exploit U.S. and Western space technology to gain potential military advantages.

#### China uses to increase aggression in the SCS.

Yang 18 Adam Yang 3-17-2018 “How Should the US Engage China in Space?” <https://thediplomat.com/2018/03/how-should-the-us-engage-china-in-space> (Major in the U.S. Marine Corp and a student at the Command and Staff College)//Elmer

Subsequently, China is pursuing international cooperation in space – not only for security and economic reasons, but also to bolster the legitimacy of the Chinese Communist Party to domestic and international audiences. The European Space Administration (ESA) has already expressed desires to cooperate with China on human space flight and the use of its future space station. China especially values its relationship with ESA due to the opportunities to trade and transfer technologies denied by the United States. China and Russia have also agreed to cooperate on human space flight and deep space exploration. Though these initiatives are not on the scale of a Maritime Silk Road, they do offer U.S. policymakers opportunities to work with a rising space power for positive ends. Finally, the [US] United States should pay attention to China’s diplomatic and engagement efforts with other nations. Contrary to the cooperative tenets for a Maritime Silk Road, in 2016, China convinced Cambodia to block an Association of South East Asian Nations (ASEAN) joint statement that recognized The Hague’s arbitration ruling on the South China Sea dispute in favor of the Philippines. In June 2017, Vietnam resisted China’s demands to vacate an oil venture within its EEZ, but eventually capitulated when China threatened to use force. The most concerning aspect for Vietnam was an atypical silence from its neighbors – particularly from the Philippines, Indonesia, and Singapore. Apparently, China’s political and economic leverage over these nations prevented them from publicly sympathizing with Vietnam or rebuking China’s actions. Seemingly, when pressed, China uses soft and hard power tactics bilaterally to dislodge multilateral initiatives that counter it interests. Could China disrupt the U.S.-European alliance as it did with ASEAN unity? At this stage, Chinese-European cooperation in space seems well intentioned. Nevertheless, U.S. policymakers should consider whether China’s growing space relations with Europe, Russia, or any other space power could complicate U.S. interests in other areas. As China strengthens its partnerships, its ability to shape laws, institutions and the strategic preferences of others increase as well.

#### Unchecked maritime expansion risks Nuclear War

Thayer and Han 19 (Bradley A. & Lianchao; professor of Political Science at the University of Texas San Antonio, fellow at the Belfer Center for Science and International Affairs at Harvard University; vice president of Citizen Power Initiatives for China, founder of the Independent Federation of Chinese Students and Scholars, legislative counsel and policy director in the US Senate for 12 years; ( 6-12-2019, https://nationalinterest.org/feature/%E2%80%98xi-doctrine%E2%80%99-proclaiming-and-rationalizing-china%E2%80%99s-aggression-62402, "The ‘Xi Doctrine’: Proclaiming and Rationalizing China’s Aggression," National Interest, Acc:9-20-2019 (ermo/sms)

Using the occasion of the Shangri-La Dialogue in Singapore this month, Chinese Minister of National Defense and State Councilor Gen. Wei Fenghe, delivered a sharp message to the United States, which may be termed the “Xi Doctrine” on China’s use of force, after Chinese premier Xi Jinping. Wei declaring both China’s resolve to aggress to advance its interests and a rationalization for the use of force. Wei’s de facto threat of war should not be lost in his nuances, deliberate ambiguity, or in translation. His remarks were so bellicose that the world has noticed, as was certainly intended by the leadership of the Chinese Communist Party (CCP). Empirical evidence of China’s aggression is increasingly common, from its attempt to dominate the South China Sea, the neo-imperialist effort to gain control of states through the Belt and Road Initiative, to its technological imperialism to control 5G and artificial intelligence technologies. What is rather less frequent are statements from high-level Chinese officials proclaiming the country’s intent to be aggressive and offering an attempted legitimizing principle justifying that aggression. While much of the content of Wei’s remarks were in keeping with the gossamer pronouncements on China’s peaceful intentions, as well as a paean to Xi Jinping’s leadership, they still conveyed that China is ready and willing to resort to war if the United States stands in its way of global expansion; and they made clear that China must go to war, or even a nuclear war, to occupy Taiwan. Specifically, there are four elements that comprise the Xi Doctrine and are indications of China’s signaling its willingness to use force. The first component is a new and alarming proclamation of the undisguised threats to use force or wage an unlimited war. China is becoming bolder as its military power grows. This is evidenced in Wei’s muscular remarks on the People’s Republic of China’s approach against Taiwan, his explicit statement that China does not renounce the use of force against Taiwan, and his effort to deter the United States and its allies from intervention should an attack occur. Wei forcefully stated: “If anyone dares to separate Taiwan from China, the Chinese military has no choice but must go to war, and must fight for the reunification of the motherland at all costs.” “At all cost” means that China **will not hesitate** to use nuclear weapons or launching another Pearl Harbor to take over Taiwan. This is a clear warning of an invasion. Second, the Xi Doctrine legitimizes territorial expansion. Through his remarks, Wei sought to convince the rest of the world that China’s seizure of most of the South China Sea is an accomplished fact that cannot be overturned. He made bogus accusations, which included blaming the United States for “raking in profits by stirring up troubles” in the region. He insisted that only ASEAN and China must resolve the issue. He claimed that China’s militarization on South China Sea islands and reefs were an act of self-defense. Should this be allowed to stand, then the Xi Doctrine will set a **perilous precedent** of successful territorial expansion, which will **further entice China** and jeopardize the peace of the region. Third, the doctrine targets the United States as a cause of the world’s major problems and envisions a powerful China evicting the United States from the region. Wei obliquely identified the United States as the cause wars, conflicts, and unrest, and **sought** to convey that the United States will abandon the states of the South China Sea (SCS) when it is confronted by Chinese power, a typical divide and conquer strategy used by the CCP regime. The Xi Doctrine’s fourth element is the mendacity regarding China’s historical use of force and current actions. While the distortions of history were numerous, there were three major lies that should be alarming for the states of the region and the global community. First, Wei said that China had never invaded another country, which is a claim so transparently false it can only be a measure of the contempt he held for the audience. China has a long history of aggression, including against the Tibetans and Vietnamese, and perhaps soon against the Taiwanese. Second, Wei argued that hegemony does not conform to China’s values when, in fact, China proudly was Asia’s hegemon for most of the last two thousand years. Lastly, he claimed that the situation in the SCS is moving toward stability—from China’s perspective this stability is caused by its successful seizure of territory. In fact, the SCS is far less stable as a result of China’s actions. Efforts to counter this grab are denounced by Wei as destabilizing, which is a bit like a thief accusing you of a crime for wanting your property returned. Wei’s belligerent rhetoric is an indication that the CCP regime faces deep external and internal crises. Externally, the Trump administration has shocked the CCP with the three major steps it has taken. First, it has shifted the focus of the U.S. national-security strategy and now identifies China explicitly as its primary rival—abandoning the far more muted policies of previous administrations. Second, Trump has acted on this peer competitive threat by advancing tangible measures, such as arms sales to allies and the ban of Huawei. Third, the administration has made credible commitments to assure partners and allies to counter China’s aggression and bullying. These have unbalanced the CCP regime, and its natural reaction is to bully its way out. Additionally, the CCP regime has perceived that the world today has begun to consider the negative implications of China’s rise, and the United States is determined to prevent what heretofore had been considered China’s unstoppable rise. From the perspective of CCP, conflict is increasingly seen as inevitable and perhaps even imminent. Wei’s bellicosity should be seen in this light, and the PLA is tasked with fighting and winning the war. Internally, Xi’s anti-corruption campaign that selectively targets his political rivalries, and his abandoning the established rules such as term limited of presidency, have introduced deep cleavages into the unity of the regime unity. China’s economic slowdown, made worse by the U.S. trade war, is a fundamental challenge to the regime’s legitimacy. Xi’s repression and suppression of the Chinese people, particularly human-rights defenders, Christians, Kazakhs, Uighurs, and other minorities, have miscarried. Drawing from the pages of unfortunate history, in a classic social-imperialist move, the regime wants to direct these internal tensions outward. At the same time, the nationalistic fervor advanced by the CCP’s propaganda and by the rapid military modernization have made many young militant officers in the PLA overconfident. This is infrequently noticed in the West. They can hardly wait to fight an ultimate war to defeat the arch-enemy. This plainly dangerous mentality echoes the Japanese military’s beliefs before Pearl Harbor.

## 3

#### Climate change makes water shortages inevitable – that causes hydro-political conflict escalation which goes nuclear

Harvey 8/17 [(Fiona, the Guardian's environment correspondent, won the Foreign Press Association award for Environment Story of the Year and the British Environment and Media Awards journalist of the year) “Global water crisis will intensify with climate breakdown, says report,” The Guardian, 8/17/2021] JL

Mark’s words should be a call to attention, and a call to action. The plight of farmers in Australia illustrates a larger reality: As planetary temperatures continue to increase and rainfall patterns shift due to human-caused climate disruption, our ability to grow crops and have enough drinking water will become increasingly challenged, and the outlook is only going to worsen.

The most recent United Nations Intergovernmental Panel on Climate Change report warned of increasingly intense droughts and mass water shortages around large swaths of the globe.

But even more conservative organizations have been sounding the alarm. “Water insecurity could multiply the risk of conflict,” warns one of the World Bank’s reports on the issue. “Food price spikes caused by droughts can inflame latent conflicts and drive migration. Where economic growth is impacted by rainfall, episodes of droughts and floods have generated waves of migration and spikes in violence within countries.”

Meanwhile, a study published in the journal Global Environmental Change, looked at how “hydro-political issues” — including tensions and potential conflicts — could play out in countries expected to experience water shortages coupled with high populations and pre-existing geopolitical tensions.

The study warned that these factors could combine to increase the likelihood of water-related tensions — potentially escalating into armed conflict in cross-boundary river basins in places around the world by 74.9 to 95 percent. This means that in some places conflict is practically guaranteed.

These areas include regions situated around primary rivers in Asia and North Africa. Noted rivers include the Tigris and Euphrates, the Indus, the Nile, and the Ganges-Brahmaputra.

Consider the fact that 11 countries share the Nile River basin: Egypt, Burundi, Kenya, Eritrea, Ethiopia, Uganda, Rwanda, Sudan, South Sudan, Tanzania and the Democratic Republic of Congo. All told, more than 300 million people already live in these countries, — a number that is projected to double in the coming decades, while the amount of available water will continue to shrink due to climate change.

For those in the US thinking these potential conflicts will only occur in distant lands — think again. The study also warned of a very high chance of these “hydro-political interactions” in portions of the southwestern US and northern Mexico, around the Colorado River.

Potential tensions are particularly worrisome in India and Pakistan, which are already rivals when it comes to water resources. For now, these two countries have an agreement, albeit a strained one, over the Indus River and the sharing of its water, by way of the 1960 Indus Water Treaty.

However, water claims have been central to their ongoing, burning dispute over the Kashmir region, a flashpoint area there for more than 60 years and counting.

The aforementioned treaty is now more strained than ever, as Pakistan accuses India of limiting its water supply and violating the treaty by placing dams over various rivers that flow from Kashmir into Pakistan.

In fact, a 2018 report from the International Monetary Fund ranked Pakistan third among countries facing severe water shortages. This is largely due to the rapid melting of glaciers in the Himalaya that are the source of much of the water for the Indus.

To provide an idea of how quickly water resources are diminishing in both countries, statistics from Pakistan’s Islamabad Chamber of Commerce and Industry from 2018 show that water availability (per capita in cubic meters per year) shrank from 5,260 in 1951, to 940 in 2015, and are projected to shrink to 860 by just 2025.

In India, the crisis is hardly better. According to that country’s Ministry of Statistics (2016) and the Indian Ministry of Water Resources (2010), the per capita available water in cubic meters per year was 5,177 in 1951, and 1,474 in 2015, and is projected to shrink to 1,341 in 2025.

Both of these countries are nuclear powers. Given the dire projections of water availability as climate change progresses, nightmare scenarios of water wars that could spark nuclear exchanges are now becoming possible.

#### Asteroid mining solves water access – only NEOs are sufficiently proximate and hydrated – independently, storing launch fuel on asteroids reduces space debris – turns case

Tillman 19 [(Nola Taylor, has been published in Astronomy, Sky & Telescope, Scientific American, New Scientist, Science News (AAS), Space.com, and Astrobiology magazine, BA in Astrophysics) “Tons of Water in Asteroids Could Fuel Satellites, Space Exploration,” Space, 9/29/2019] JL

When it comes to mining space for water, the best target may not be the moon: Entrepreneurs' richest options are likely to be asteroids that are larger and closer to Earth.

A recent study suggested that roughly 1,000 water-rich, or hydrated, asteroids near our planet are easier to reach than the lunar surface is. While most of these space rocks are only a few feet in size, more than 25 of them should be large enough to each provide significant water. Altogether, the water locked in these asteroids should be enough to fill somewhere around 320,000 Olympics-size swimming pools — significantly more than the amount of water locked up at the lunar poles, the new research suggested.

Because asteroids are small, they have less gravity than Earth or the moon do, which makes them easier destinations to land on and lift off from. If engineers can figure out how to mine water from these space rocks, they could produce a source of ready fuel in space that would allow spacecraft designers to build refuelable models for the next generation of satellites. Asteroid mining could also fuel human exploration, saving the expense of launching fuel from Earth. In both cases, would-be space-rock miners will need to figure out how to free the water trapped in hydrated minerals on these asteroids.

"Most of the hydrated material in the near-Earth population is contained in the largest few hydrated objects," Andrew Rivkin, an asteroid researcher at Johns Hopkins University Applied Physics Research Laboratory in Maryland, told Space.com. Rivkin is the lead author on the paper, which estimated that near Earth asteroids could contain more easily accessible water than the lunar poles.

According to the United Nations Office for Outer Space Affairs, more than 5,200 of the objects launched into space are still in orbit today. While some continue to function, the bulk of them buzz uselessly over our heads every day. They carry fuel on board, and when they run out, they are either lowered into destructive orbits or left to become space junk, useless debris with the potential to cause enormous problems for working satellites. Refueling satellites in space could change that model, replacing it with long-lived, productive orbiters.

"It's easier to bring fuel from asteroids to geosynchronous orbit than from the surface of the Earth," Rivkin said. "If such a supply line could be established, it could make asteroid mining very profitable."

Hunting for space water from the surface of the Earth is challenging because the planet's atmosphere blocks the wavelength of light where water can be observed. The asteroid warming as it draws closer to the sun can also complicate measurements.

Instead, Rivkin and his colleagues turned to a class of space rocks called Ch asteroids. Although these asteroids don't directly exhibit a watery fingerprint, they carry the telltale signal of oxidized iron seen only on asteroids with signatures of water-rich minerals, which means the authors felt confident assuming that all Ch asteroids carry this rocky water.

Based on meteorite falls, a previous study estimated that Ch asteroids could make up nearly 10% of the near-Earth objects (NEOs). With this information, the researchers determined that there are between 26 and 80 such objects that are hydrated and larger than 0.62 miles (1 km) across.

Right now, only three NEOs have been classified as Ch asteroids, although others have been spotted in the asteroid belt. Most NEOs are discovered and observed at wavelengths too short to reveal the iron band that marks the class. Carbon-rich asteroids, which include Ch asteroids and other flavors, are also darker than the more common stony asteroids, making them more challenging to observe.

Although Ch asteroids definitely contain water-rich minerals, that doesn’t necessarily mean that they will always be the best bet for space mining. It comes down to risk. Would an asteroid-mining company rather visit a smaller asteroid that definitely has a moderate amount of water, or a larger one that could yield a larger payday but could also come up dry?

"Whether getting sure things with no false positives, like the Ch asteroids, is more important or if a greater range of possibilities is acceptable with the understanding that some asteroids will be duds is something the miners will have to decide," Rivkin said.

In addition to estimating the number of large, water-rich asteroids might be available, the study also found that as many as 1,050 smaller objects, roughly 300 feet (100 meters) across, may also linger near Earth. Their small bulk will make them easier to mine because their low gravity will require less fuel to escape from, but they will produce less water overall, and Rivkin expects that the handful of larger space rocks will be the first targets.

"It seems likely that the plan for these companies will be to find the largest accessible asteroid with mineable material with the expectation that it will be more cost-effective than chasing down a large number of smaller objects," Rivkin said. "How 'accessible' and 'mineable material' and 'cost-effective' are defined by each company is to be seen."

## 4

#### Ethics must begin a priori and the meta-ethic is bindingness.

#### [1] Uncertainty – our experiences are inaccessible to others which allows people to say they don’t experience the same, however a priori principles are universally applied to all agents.

#### [2] Bindingness – I can keep asking “why should I follow this” which results in skep since obligations are predicated on ignorantly accepting rules. Only reason solves since asking “why reason?” requires reason which is self-justified.

#### That means we must universally will maxims— any non-universalizable norm justifies someone’s ability to impede on your ends.

#### Thus, the standard is consistency with the categorical imperative.

#### Prefer –

#### [1] All other frameworks collapse—non-Kantian theories source obligations in extrinsically good objects, but that presupposes the goodness of the rational will.

#### [2] Consequences Fail: a] Every action has infinite stemming consequences, because every consequence can cause another consequence so we can’t predict.

#### Negate:

#### [1] A model of freedom mandates a market-oriented approach to space—that negates

Broker 20 [(Tyler, work has been published in the Gonzaga Law Review, the Albany Law Review and the University of Memphis Law Review.) “Space Law Can Only Be Libertarian Minded,” Above the Law, 1-14-20, <https://abovethelaw.com/2020/01/space-law-can-only-be-libertarian-minded/>] TDI

The impact on human daily life from a transition to the virtually unlimited resource reality of space cannot be overstated. However, when it comes to the law, a minimalist, dare I say libertarian, approach appears as the only applicable system. In the words of NASA, “2020 promises to be a big year for space exploration.” Yet, as Rand Simberg points out in Reason magazine, it is actually private American investment that is currently moving space exploration to “a pace unseen since the 1960s.” According to Simberg, due to this increase in private investment “We are now on the verge of getting affordable private access to orbit for large masses of payload and people.” The impact of that type of affordable travel into space might sound sensational to some, but in reality the benefits that space can offer are far greater than any benefit currently attributed to any major policy proposal being discussed at the national level. The sheer amount of resources available within our current reach/capabilities simply speaks for itself. However, although those new realities will, as Simberg says, “bring to the fore a lot of ideological issues that up to now were just theoretical,” I believe it will also eliminate many economic and legal distinctions we currently utilize today. For example, the sheer number of resources we can already obtain in space means that in the rapidly near future, the distinction between a nonpublic good or a public good will be rendered meaningless. In other words, because the resources available within our solar system exist in such quantities, all goods will become nonrivalrous in their consumption and nonexcludable in their distribution. This would mean government engagement in the public provision of a nonpublic good, even at the trivial level, or what Kevin Williamson defines as socialism, is rendered meaningless or impossible. In fact, in space, I fail to see how any government could even try to legally compel collectivism in the way Simberg fears. Similar to many economic distinctions, however, it appears that many laws, both the good and the bad, will also be rendered meaningless as soon as we begin to utilize the resources within our solar system. For example, if every human being is given access to the resources that allows them to replicate anything anyone else has, or replace anything “taken” from them instantly, what would be the point of theft laws? If you had virtually infinite space in which you can build what we would now call luxurious livable quarters, all without exploiting human labor or fragile Earth ecosystems when you do it, what sense would most property, employment, or commercial law make? Again, this is not a pipe dream, no matter how much our population grows for the next several millennia, the amount of resources within our solar system can sustain such an existence for every human being. Rather than panicking about the future, we should try embracing it, or at least meaningfully preparing for it. Currently, the Outer Space Treaty, or as some call it “the Magna Carta of Space,” is silent on the issue of whether private individuals or corporate entities can own territory in space. Regardless of whether governments allow it, however, private citizens are currently obtaining the ability to travel there, and if human history is any indicator, private homesteading will follow, flag or no flag. We Americans know this is how a Wild West starts, where most regulation becomes the impractical pipe dream. But again, this would be a Wild West where the exploitation of human labor and fragile Earth ecosystem makes no economic sense, where every single human can be granted access to resources that even the wealthiest among us now would envy, and where innovation and imagination become the only things we would recognize as currency. Only a libertarian-type system, that guarantees basic individual rights to life, liberty, and the pursuit of happiness could be valued and therefore human fidelity to a set of laws made possible, in such an existence.

#### [2] Banning private space appropriation inhibits the sale and use of spacecraft and fuel- that’s a form of restricting the free economic choices of individuals

**Richman 12**, Sheldon. “The free market doesn’t need government regulation.” Reason, August 5, 2012. // AHS RG

Order grows from market forces. But where do **market forces** come from? They **are the result of human action. Individuals select ends and act to achieve them by adopting suitable means.** Since means are scarce and ends are abundant, **individuals economize in order to accomplish more rather than less.** And they always seek to exchange lower values for higher values (as they see them) and never the other way around. In a world of scarcity, tradeoffs are unavoidable, so one aims to trade up rather than down. (One’s trading partner does the same.) **The result of this**, along with other **features of human action**, and the world at large **is what we call market forces. But really, it is just men and women acting rationally in the world.**

## Case

### Framing

#### Extinction doesn’t outweigh –freezes action cuz there’s always a chance of extinction

#### [1] Begs the question of uncertainty- I’ll destroy you on the framework debate so there don’t be uncertainty

#### [2] Definitionally the fallacy of origin—just because life is a prerequisite for anything doesn’t mean that it comes first.

moen

#### [1] Is ought fallacy just because we act on pain and pleasure doesn’t mean we should

#### [2] Masochists and serial killers disprove – means it’s subjective and fails

NOAD

#### 1. Doesn't justify util. Simply means you have to account for tradeoffs when making a decision which is not unique to util i.e deont can weigh between imperfect and perfect duties,

Actor spec

#### [1] Is-ought fallacy, just because some states use util doesn’t make it right.

#### [2] States still have intent-based side constraints, empirically proven by constitution.

### AT Debris

#### AT Scoles:

#### 1] The real danger is from NASA’s mission to transplant rocks --- plan doesn’t affect, and there’s other methods of mining - rehighlighting

Sarah Scoles 15, “Dust from asteroid mining spells danger for satellites,” New Scientist, 5-27-2015, https://www.newscientist.com/article/mg22630235-100-dust-from-asteroid-mining-spells-danger-for-satellites/

NASA chose the second option for its Asteroid Redirect Mission, which aims to pluck a boulder from an asteroid’s surface and relocate it to a stable orbit around the moon. But an asteroid’s gravity is so weak that it’s not hard for surface particles to escape into space. Now a new model warns that debris shed by such transplanted rocks could intrude where many defence and communication satellites live – in geosynchronous orbit. According to Casey Handmer of the California Institute of Technology in Pasadena and Javier Roa of the Technical University of Madrid in Spain, 5 per cent of the escaped debris will end up in regions traversed by satellites. Over 10 years, it would cross geosynchronous orbit 63 times on average. A satellite in the wrong spot at the wrong time will suffer a damaging high-speed collision with that dust. The study also looks at the “catastrophic disruption” of an asteroid 5 metres across or bigger. Its total break-up into a pile of rubble would increase the risk to satellites by more than 30 per cent (arxiv.org/abs/1505.03800). That may not have immediate consequences. But as Earth orbits get more crowded with spent rocket stages and satellites, we will have to worry about cascades of collisions like the one depicted in the movie Gravity. Handmer and Roa want to point out the problem now so that we can find a solution before any satellites get dinged. “It is possible to quantify and manage the risk,” says Handmer. “A few basic precautions will prevent harm due to stray asteroid material.”

#### 2] Collision risk is infinitesimally 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.

#### 3] Concedes Asteroid Mining can be regulated to still be allowed to occur – says “possible to … manage risk” – no solvency deficit to the CP.

### AT Africa

#### AT oni

#### space mining make African economy better- africa firms go to space or space dust/rocks will be processed in African countries

#### not everyone can go to space-people still rely on Africa

#### Econ decline

#### Econ decline in Africa for years-hasn’t led to war, or if it has it has been contained