## 1

#### The States ought to

#### • amend the Outer Space Treaty to create a private property regime that grants exclusive rights to private entities to appropriate resources within space facilities and a safety zone of 1000 meters if they inhabit, maintain and/or operate said facility for a period of at least one year–conditional upon peaceful use of the property

#### • ban the private use of Near Earth Object (NEO) redirection technology.

#### That solves the whole aff – restores certainty and harmonizes regulations while ensuring peaceful development.

Brehm 15 [Andrew R. Brehm, attorney at the law firm Scopelitis Garvin, “Private Property in Outer Space: Establishing a Foundation for Future Exploration,” 2015, *Wisconsin International Law Journal*, Vol. 33, Issue 2, https://repository.law.wisc.edu/s/uwlaw/media/77012, EA]

International agreement is essential to establishing a system of private property rights in outer space for the simple reason that outer space does not belong to one single nation; it is not the prerogative of the US government, or any government, to implement unilateral legislation that would significantly alter outer space and the current space law framework. It would frustrate the common conception of outer space as a free and open place, as well as the current legal framework, to simply enact domestic legislation that allows for the acquisition of private property rights in outer space. A collaborative, international approach is necessary for legal and practical reasons, in order to successfully establish an effective and beneficial system of private property rights in outer space.

Wayne White’s treaty proposal creates a strong foundation for international discussion of the increasingly important issue of private property acquisition in outer space. White’s well-crafted treaty proposal seeks to advance private exploration of outer space within the regulatory framework of the Outer Space Treaty and existing international space law. By creating a system in which private entities can establish real property rights in their space objects and a surrounding safety zone, the proposal incentivizes private investment of large sums into space exploration programs. Provisions which authorize the right to exclude, the right to be free from interference, the exclusive right to appropriate resources within an established safety zone, and the right to sell real property further encourage private space exploration and create strong associated incentives. 107 Private space exploration and resource extraction entities allocate substantial investments in furtherance of their space programs. 108 Allowing such entities to mine valuable platinum group resources, as well as water and hydrogen in celestial bodies that can be used to propel deeper space exploration, not only provides a robust safety net for current space exploration entities, but also creates a system that encourages new entities to enter into the field of private space exploration. Increased space exploration across the board would have nearly unlimited benefits in terms of societal, economical, and technological advancement. 109

Additionally, an international agreement alleviates some of the general concerns associated with establishing private property rights in outer space. Outer space is generally viewed as a place that should be open to all for free and peaceful use. 110 Opponents of private property rights in outer space often cite concerns about over-allocation of property at the exclusion of non-spacefaring nations or entities, and associated concerns. " 1 White’s proposed international agreement alleviates these concerns by placing limitations on which real property rights can be acquired.

First, under the proposal for an international agreement, private entities are entitled to formal recognition of property rights if they “inhabit, maintain and/or operate a space facility for a period of at least one year.” 112 This overcomes the potential issue of modern-day private colonialism where private entities could simply stake their company flags and claim ultimate title to the property. Of course, the duration requirement could be extended and additional requirements for formal recognition of property rights could be attached. Additionally, the property rights under White’s system would only apply to space facilities and a safety zone of either 500 or 1,000 meters surrounding a space facility.113 This limitation avoids concerns of over-allocation of private property in space. Essentially, private entities would not be capable of acquiring private property rights to vast amounts of territory. Also, property rights of private entities would immediately terminate if the property is used for non-peaceful purposes, if it is abandoned for an extended period of time, or if it used to prevent free access to outer space or celestial bodies114 These provisions ensure that outer space will be used for peaceful purposes and will remain open for free exploration.

Ultimately, a well-crafted international agreement similar to White’s proposal creates a system of private property rights in outer space that remains true to the overarching goals of outer-space exploration. Such a system would incentivize private space exploration in a realistic and pragmatic fashion that benefits all mankind. If peaceful and free space exploration is a desirable goal, White’s treaty proposal lays a strong foundation. This foundation has the potential to lead to an effective international system that addresses modem space exploration concerns while facilitating future development in the arena of space exploration.

#### CP solves better – proliferation is inevitable in the world of the AFF because they don’t create any regulations on NEO capabilities.

1AC Drmola and Mareš 15 - Jakub Drmola is a PhD student and Miroslav Mareš professor, at the Divison of Security and Strategic Studies, Masaryk University, Czech Republic, "Revisiting the deflection dilemma", *Astronomy & Geophysics*, Volume 56, Issue 5, October 2015, Pages 5.15–5.18, <https://academic.oup.com/astrogeo/article/56/5/5.15/235650>

There are two basic ways to go about moving the resources contained within a given asteroid to the Earth. They can be extracted from the asteroid during its natural orbit and then transported to the Earth, or the entire asteroid might be moved closer to a more convenient location before starting mining. Thus repositioned, it might even be used as a shielded habitat, once hollowed out (Ostro 1999). There are different speculative costs and benefits associated with either option, which would vary with the size, orbit and composition of the asteroid. But, crucially, the second option would entail putting asteroids into orbit around the Earth, the Moon or possibly at one of the Earth’s Lagrangian points. Indeed, NASA has already planned a mission to capture a small asteroid and place it in a high cislunar orbit, where it would serve as a destination for future manned missions and experiments. This “Asteroid Redirect Mission” is to take place in the next decade and is being pitched mainly as a stepping stone towards a future mission to Mars (see box “NASA’s Asteroid Redirect Mission”; Brophy et al. 2012, Burchell 2014, Gates et al. 2015). Programmes to redirect asteroids and, especially, plans to mine asteroids on an industrial scale essentially resurrect the deflection dilemma. But it is no longer a matter of superpowers intentionally misusing technology designed to prevent dangerous impacts. It becomes an issue of proliferation among private entities. Once private mining companies acquire the technical ability to redirect suitable NEOs (Baoyin et al. 2011) in order to extract platinum or water from them, perilous inflections become more likely. The probability of accidents will rise with the number of asteroids whose trajectories we decide to manipulate. Such accidents might be very unlikely, but even a tiny technical or human error in the execution of an inflection meant to place an asteroid into the lunar or geocentric orbit might send it crashing into the Earth with potentially devastating consequences. And while we might find solace in the low probabilities associated with such an accident, even contemporary industries which are considered very safe suffer from unlikely tragedies. Despite being dependable and reliable, airliners do crash; there are a lot of them flying and very improbable accidents do happen if the dice are rolled often enough. Undoubtedly, we will not be steering as many asteroids as we steer planes any time soon, but industries tend to be more accident-prone during their infancy. Furthermore, a single asteroid can do a lot more damage than a single plane. And who is to say how much metal or water we are going to need in space over the course of the 21st century, or the next? The second source of risk is the intentional misuse, similar to the original deflection dilemma. But the entry barrier for asteroid weaponization gets much lower if mining them and moving them around becomes a common industrial activity. This is in stark contrast to the original scenario which envisioned this technology to be used solely for planetary defence and under control of a very small number of the most powerful countries (Morrison 2010). If such a powerful technology becomes widely and commercially available, even rogue states and wellfunded terrorist groups might be tempted to use it for an unexpected and devastating attack. In addition, an active asteroid mining industry would make it more difficult to detect any hostile inflection attempts among the number of legitimate and benign ones. Policy implications Considering these possible future dangers, it seems prudent to consider what to do about them sooner rather than later. The most obvious “solution” would be a blanket ban on the development of any technology that might lead to artificially inflected asteroids crashing into the Earth. However, such a ban would be incompatible with the dream of increased presence of humans in the solar system. It would stymie both scientific exploration and economic development here on Earth, which is increasingly dependent on precious metals and spacebased technologies. Furthermore, this approach would leave us more vulnerable to natural impacts which, in the long view, seems less than desirable. Another approach might be similar to the current regime of non-proliferation of nuclear weapons, aiming to support peaceful civilian use of nuclear power while at the same time prohibiting the spread of weapons of mass destruction. The regime mostly works (with caveats, see Wood et al. 2008) because these applications require different infrastructures and fissile materials enriched to different levels of purity. This makes it possible, at least in principle, to tell apart operations meant for the production of electricity and those designed to create weapons. Unfortunately, the difference between legitimate and hostile trajectory modification would lie only in the acceleration imparted on the asteroid and not in the technical means to do it. As the spacecraft launched with the intent to cause impact with the Earth might be identical to those sent off to retrieve resources, telling them apart would be nearly impossible, until it was too late. And this approach makes no difference to the chances of an industrial accident. If monitoring equipment on Earth is unhelpful, the focus changes to space. In other words, all asteroid movement missions should be constantly monitored. For an attacker, it would make most sense to delay the final course adjustment for as long as possible in order to give the least warning and make the timeframe for reaction as short as possible. So an asteroid might head towards a safe orbit fit for resource extraction for most of its altered flight time, but be further accelerated at the last possible moment onto an impact trajectory, perhaps mere days before it hits a major city. Our current programmes cataloguing NEOs (such as CSS or Pan-STARRS), which look for new, previously unknown objects, are not ideally suited for the task of constantly tracking a number of different, already known asteroids. New instruments would be needed to track them in order to immediately detect any hazardous inflection, whether intentional or accidental. Once such a detection is made, emergency measures to evacuate the population or, preferably, to “re-deflect” the incoming object can be executed right away, regardless of the cause. Accidents and hostilities could be treated the same way and countered by the same system (initially, at least). Such a system would be more akin to an air traffic control than a non-proliferation regulation, offering security through vigilance, rather than absence. Additionally, development of a system able to deflect incoming objects at relatively short notice would be beneficial in case of an impending natural impact. Conclusion Perhaps none of these concerns will become relevant. Maybe the idea of asteroid mining will soon fizzle out because we will discover cheaper and more efficient local alternatives. Maybe humanity will lose the will or the capability to explore space any further. Or perhaps manipulating asteroid trajectories will prove impractical or too costly. Certainly, it would not be the first time that a promising and seemingly obvious future does not come about. In the 1960s it seemed almost self-evident that by the second decade of the 21st century we would have flying cars and a base on the Moon. Yet we do not. Asteroid mining might be a similar case of unfulfilled promises and misplaced visions. On the other hand, there are examples of industries that developed surprisingly fast despite being considered unrealistic, not too long ago: air travel, nuclear power generation, or commercial satellites. The spread of the internet and the accompanying digital information revolution is another example; hardly anyone anticipated having virtually the entire repository of human knowledge at our fingertips at all times (except Douglas Adams). Whether the deflection dilemma forever remains an unmaterialized threat or it becomes a palpable problem, it is something to be mindful of now, as the foundations of the prospective asteroid mining industry are being laid. In the end, the purpose of this paper is not to predict the future. Instead it aims to merely update a conscientious warning which called for our diligence more than 20 years ago. While the world has changed somewhat, the basic idea remains valid. Whether the danger comes from warring superpowers, terrorists or negligent corporations, we must be aware of the realistic risks in order to avoid being either stumped by unforeseen catastrophes or paralysed by unwarranted fear. Either extreme would be harmful for our future.●

#### Only a private property regime solves for space mining and colonization.

Babcock 19 [Hope M. Babcock, Professor of Law, Georgetown University Law Center, “The Public Trust Doctrine, Outer Space, and the Global Commons: Time to Call Home ET,” 2019, *Syracuse Law Review*, Vol. 69, https://lawreview.syr.edu/wp-content/uploads/2019/09/H-Babcock-Article-Final-Document-v2.pdf, EA]

For those who seek development of space resources, “a reliable property rights regime will remove impediments to business activities on these bodies and inspire the commercial confidence necessary to attract the enormous investments needed for tourism, settlement, construction, and business development, and for the extraction and utilization of resources.”263 The resources supporting private space mining companies are essentially worthless if the companies have no legal right to the resources they have mined.264 “Without the legal right to use water and hydrogen mined from celestial bodies, and to alienate platinum group elements, the potential profitability of private space expeditions collapses along with the goals of deeper space exploration and settlement.”265 The lack of a stable private property regime in outer space also means that space settlements will not be able “to claim sufficient land to yield enough of the only ‘product’ the settlement can sell profitably enough to guarantee its survival.”266 The strong belief is that unless private property rights in outer space and its resources are recognized, commercial enterprises will be unable to sustain any type of successful commercial activities in outer space.267

The absence of “‘security derived from ownership and sovereign control, [means that] entities that might be interested in the development of space resources will be reluctant to undertake [the] expensive and risky path’ implicit in all space travel”268 without some return on their investment.269 In all likelihood, such a return would be “in the form of the right to exploit limited areas of space and in proceeds from the sale of space resources.”270 This uncertainty arguably leaves a large “legal void, a wasteland of indeterminacy and instability.”271 According to Reinstein, “Unless people and nations are encouraged to exploit the riches of space, humanity will never know their benefit. And the more we are able to exploit, the more humanity stands to benefit. If commercialization is to be successful, space law must encourage investment in outer space development.”272

## 2

#### Counterplan text: Space faring nations ought to implement a strict asteroid monitoring regime and develop relevant NEO tracking instruments.

#### That solves - accidents and hostilities are treated the same and redflection and evacuation solves their impacts

Drmola and Mareš 15 - Jakub Drmola is a PhD student and Miroslav Mareš professor, at the Divison of Security and Strategic Studies, Masaryk University, Czech Republic, "Revisiting the deflection dilemma", Astronomy & Geophysics, Volume 56, Issue 5, October 2015, Pages 5.15–5.18, <https://academic.oup.com/astrogeo/article/56/5/5.15/235650>

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## 3

#### US wins space race now due to private competition – its key to space dominance.

Weichert 21 – former Congressional staff member who holds a Master of Arts in Statecraft & National Security Affairs from the Institute of World Politics in Washington, D.C. He is the founder of The Weichert Report: An Online Journal of Geopolitics [Brandon, “The Future of Space Exploration Depends on the Private Sector,” 7/5/2021, https://www.nationalreview.com/2021/07/the-future-of-space-exploration-depends-on-the-private-sector/#slide-1]

As Jeff Bezos, the wealthiest man on the planet, readies to launch himself into space aboard one of his own rockets, the world is watching the birth of a new dawn in space. Previously, America relied on its government agency, NASA, to propel it to the cosmos during the last space race with the Soviet Union. Today, America’s greatest hopes are with its private sector.

Jeff Bezos is not engaging in such risky behavior simply because he’s an adrenaline junky. No, he’s launching himself into orbit because his Blue Origins is in a titanic struggle with Elon Musk’s SpaceX — and Bezos’s firm is losing.

Whatever happens, the American people will benefit from the competition that is shaping up between America’s space entrepreneurs. This has always been how innovation occurs: through the dynamic, often cutthroat competition between actors in the private sector. While money is their ultimate prize, fame and fortune are also alluring temptations to make men like Musk and Bezos risk much of their wealth to change the world.

The private space race among these entrepreneurs is part of a far more important marathon between Red China and the United States. Whichever nation wins the new space race will determine the future of the earth below.

Consider this: Since winning its initial contracts to launch sensitive U.S. military satellites into orbit, SpaceX has lowered the cost of military satellite launches on taxpayers by “over a million dollars less” than what bigger defense contractors can do. Elon Musk is convinced that he can bring these costs down even more, thanks to his reusable Falcon 9 rocket.

The competition between the private space start-ups is fierce — just as the competition between Edison and Westinghouse was — but the upshot is ultimately greater innovation and lower costs for you and me. In fact, Elon Musk insists that if NASA gives SpaceX the contract for building the Human Landing System for the Artemis mission, NASA would return astronauts to the lunar surface by 2024 — four years before NASA believes it will do so. (Incidentally, 2024 is also when China anticipates having a functional base on the moon’s southern pole.)

Whereas China has an all-of-society approach to its space race with the United States, Washington has yet to fully galvanize the country in the way that John F. Kennedy rallied America to wage — and win — the space race in the Cold War. America’s private sector, therefore, is the silver bullet against China’s quest for total space dominance. If left unrestricted by meddlesome Washington bureaucrats, these companies will ensure that the United States retains its overall competitive advantage over China — and all other challengers, for that matter.

Indeed, the next four years could prove decisive in who will be victorious.

Enter the newly minted NASA director, Bill Nelson, whose station at the agency has effectively poured cold water on the private sector’s ambitious space plans. “Space is not going to be the Wild West for billionaires or anyone else looking to blast off,” Nelson admonished an inquiring reporter.

Why not?

America’s actions during its western expansion created a dynamic and advanced nation that was well-positioned to dominate the world for the next century. Should we not attempt to emulate this in order to remain dominant in the next century?

More important, this is precisely how China treats space: as a new Wild West . . . but one in which Beijing’s forces will dominate. China takes a leap-without-looking approach to space development — everything that can be done to further its grand ambition of becoming the world’s most dominant power by 2049 will be done. Meanwhile, the Biden administration wants to prevent America’s greatest strength, the free market, from helping to beat its foremost geopolitical competitor.

Nelson’s comments are fundamentally at odds with America’s spirit and animating principles. Whatever one’s opinion about Bezos or Musk, the fact is that their private space companies are inspiring greater innovation today in the space sector after years of its being left in the sclerotic hands of the U.S. government.

Sensing that the federal government’s dominance of U.S. space policy is waning, the Biden administration would rather cede the strategic high ground of space to China than let wildcatting innovators do the hard work. Today, the Federal Aviation Authority (FAA) and NASA are contriving new ways for strangling the budding private space sector, just as it is taking flight.

Risk aversion is not how one innovates. Risk is what led Americans to the moon just 66 years after the Wright brothers flew their first airplane. A willingness for risk doesn’t exist today in the federal government — which is why the feds shouldn’t be running space policy.

The U.S. government should be partnering with the new space start-ups, not shunning them. The FAA should be automatically approving SpaceX launches, not stymying them. The federal government will not win space any more than it could win the West or build the locomotive. It takes strong-willed, brilliant individuals of a rare caliber to do that. All government can do is to give the resources and support to private-sector innovators and let them make history for us.

The next decade will decide who wins space. Let it be America — and let America’s dynamic start-ups win that race, not China’s state capitalism.

#### Space deterrence solves nuclear war.

Parker 17 [Clifton B. Parker, Center for International Security and Cooperation; citing Air Force Gen. John Hyten, commander of the U.S. Strategic Command, “Deterrence in space key to U.S. security,” 01/24/17, *U.S. Strategic Command*, https://www.stratcom.mil/Media/News/News-Article-View/Article/1059106/deterrence-in-space-key-to-us-security/, EA]

Space is more important than ever for the national security of the United States, but it’s almost like the Wild West in terms of behavior, a top general said today.

Air Force Gen. John Hyten, commander of the U.S. Strategic Command, spoke Jan. 24 at Stanford’s Center for International Security and Cooperation. His talk was titled, “U.S. Strategic Command Perspectives on Deterrence and Assurance.”

Hyten said, “Space is fundamental to every single military operation that occurs on the planet today.” He added that “there is no such thing as a war in space,” because it would affect all realms of human existence, due to the satellite systems. Hyten advocates “strategic deterrence” and “norms of behavior” across space as well as land, water and cyberspace.

Otherwise, rivals like China and Russia will only threaten U.S. interests in space and create havoc for humanity below, he said.

Hyten also addressed other topics, including recent proposals by some to upgrade the country’s missile defense systems.

“You just don’t snap your fingers and build a state of the art anything overnight,” Hyten said, adding that he has not yet spoken to Trump administration officials about the issue. “We need a powerful military,” but a severe budget crunch makes “reasonable solutions” more likely than expensive and unrealistic ones.

On the upgrade front, Hyten said he favors a long-range strike missile system to replace existing cruise missiles; a better air-to-air missile for the Air Force; and an improved missile defense ground base interceptor.

‘Critically dependent’

From satellites to global-positioning systems (GPS), space has transformed human life – and the military – in the 21st century, Hyten said.

As the commander of the U.S. Strategic Command, Hyten oversees the global command and control of U.S. strategic forces, providing options for the president and secretary of defense. In particular, this command is charged with space operations (such as military satellites), information operations (such as information warfare), missile defense, global command and control, intelligence, surveillance, and reconnaissance, global strike and strategic deterrence (the U.S. nuclear arsenal), and combating weapons of mass destruction.

Hyten explained that every drone, fighter jet, bomber, ship and soldier is “critically dependent” on space to conduct their own operations. All cell phones use space, and the GPS command systems overall are managed at Strategic Command, he said.

“No soldier has to worry about what’s over the next hill,” he said, describing GPS capabilities, which have fundamentally transformed humanity’s way of life.

Space needs to be available for exploration, he said.

“I watch what goes on in space, and I worry about us destroying that environment for future generations.” He said that too many drifting objects and debris exist – about 22,000 right now. A recent Chinese satellite interception created a couple thousand more debris objects that now circle about the Earth at various altitudes and pose the risk of striking satellites.

“We track every object in space” now, Hyten said, urging “international norms of behavior in space.”

He added, “We have to deter bad behavior on space. We have to deter war in space. It’s bad for everybody. We could trash that forever.”

But now rivals like China and Russia are building weapons to deploy in the lower levels of space. “How do we prevent this? It’s bigger than a space problem,” he said.

Deterring conflict in the cyber, nuclear and space realms is the strategic deterrence goal of the 21st century, Hyten said.

“The best way to prevent war is to be prepared for war,” he said.

Hyten believes the U.S. needs a fundamentally different debate about deterrence. And it all starts with nuclear weapons.

“In my deepest heart, I wish I didn’t have to worry about nuclear weapons,” he said. Hyten described his job as “pretty sobering, it’s not easy.”

But he also noted the mass violence of the world prior to 1945 when the first atomic bomb was used. Roughly 80 million people died from 1939 to 1945 during World War II. Consider that in the 10-plus years of the Vietnam War, 58,000 Americans were killed. That’s equivalent to two days of deaths in WWII, he said.

In a world without nuclear weapons, a rise in conventional warfare would produce great numbers of mass casualties, Hyten said. About war, he said, “Once you see it up close, no human will ever want to experience it.”

Though America has “crazy enemies” right now, in many ways the world is more safe than during WWII, Hyten said. The irony is that nuclear weapons deterrence has kept us from thetype of mass killings known in events like WWII. But the U.S. must know how to use its nuclear deterrence effectively.

Looking ahead, Hyten said the U.S. needs to change and think about space as a potential war environment. An attack in space might not mean a response in space, but on the Earth

## 4

#### Interp: The affirmative must defend appropriation as a general principle, not specify a subset

#### Appropriation is a definite uncountable noun–that’s generic

WMWRC 18. William and Mary Writing Resource Center, 2018, Using Articles, <https://www.wm.edu/as/wrc/newresources/handouts/using-articles.pdf> SRUse of the ... (any kind of anger)

#### Violation: They only defend appropriation that produces debris

#### 1–Precision outweighs - anything outside the res is arbitrary and unpredictable because the topic determines prep, not being bound by it lets them jettison any word. But, voting issues are dta to let us learn from our mistake 2–Limits and Ground - decimates clash by exploding limits to infinite forms appropriation with infinite possible interps of what constitutes it, each with different implications, political problems, and economic benefits which makes contesting the aff with unifying neg ground impossible and means they can always pick the most aff skewed slice of the res. 3–TVA – read your aff as an advantage under whole res – we still get your content education and sufficient aff ground by switching up aff advantages, frameworks, implementation, etc. But, 1ar theory checks pics and they incentivize more of them cuz nothing but cheaty generics link

## 5

### 1

#### Interpretation: Appropriation is permanently taking property for exclusive use. Gorove 69:

Stephen Gorove, Interpreting Article II of the Outer Space Treaty, 37 Fordham L. Rev. 349 (1969). Available at: https://ir.lawnet.fordham.edu/flr/vol37/iss3/2

With respect to the concept of appropriation the basic question is what constitutes "appropriation," as used in the Treaty, especially in contradistinction to casual or temporary use. The term "appropriation" is used most frequently to denote the taking of property for one's own or exclusive use with a sense of permanence. Under such interpretation the establishment of a permanent settlement or the carrying out of commercial activities by nationals of a country on a celestial body may constitute national appropriation if the activities take place under the supreme authority (sovereignty) of the state. Short of this, if the state wields no exclusive authority or jurisdiction in relation to the area in question, the answer would seem to be in the negative, unless, the nationals also use their individual appropriations as cover-ups for their state's activities.5 In this connection, it should be emphasized that the word "appropriation" indicates a taking which involves something more than just a casual use. Thus a temporary occupation of a landing site or other area, just like the temporary or nonexclusive use of property, would not constitute appropriation. By the same token, any use involving consumption or taking with intention of keeping for one's own exclusive use would amount to appropriation.

#### Violation: the non-Appropriation principle does not apply to resource extraction. International consensus and rejection of the Moon Treaty support the distinction between sovereign ownership and resource extraction

Wrench 19 [John, JD Candidate at Case Western, BA from Pace University] “Non-Appropriation, No Problem: The Outer Space Treaty Is Ready for Asteroid Mining,” Case Western Reserve Journal of International Law, Vol. 51 Issue 1, <https://scholarlycommons.law.case.edu/cgi/viewcontent.cgi?article=2546&context=jil>, 2019 RE

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.

#### Vote neg – two impacts:

#### Limits. Expanding the topic to anything that involves merely launching something into the atmosphere expands the topic into numerous new tech areas which undermines core neg prep.

#### Topic literature. Our definition has intent to define and exclude in the context of the OST, which is the core of all topic research and the only predictable source.

#### Drop the debater to preserve fairness and education – use competing interps – reasonability invites arbitrary judge intervention and a race to the bottom of questionable argumentation. No RVIs – they don’t get to win for following the rules.

## Case

### 1NC – Mining Turn

#### Squo ILaw solves private mining.

Cobb 21 [Wendy N. Whitman Cobb, Associate Professor of Strategy and Security Studies at the School of Advanced Air and Space Studies, “Privatizing Peace: How Commerce Can Reduce Conflict in Space,” 2021, Routledge, pp. 122-123, EA]

The OST does not need to be done away with or even renegotiated to allow for further commercial development for several reasons. One, commercial development of space has significantly grown in recent years despite the limitations of the OST. This trend is a significant counter to the idea that the OST inhibits space development. Henry R. Hertzfeld and Frans von der Dunk also make the point that sovereignty is not the real issue here as “Many ways have been used to overcome the lack of property ownership.”5 Two, the US and other states have generally interpreted the provisions of the OST to mean that national appropriation of resources is not allowed but “use of space” is—for example, the mining of resources on the moon.6 Sarah Coffey argues that this idea is “supported by the fact that the treaty explicitly states activities that are forbidden (such as using space for military purposes) and mining or owning natural resources is not one of the forbidden activities.”7 That the Apollo astronauts who visited the moon removed several hundred pounds of rocks from the moon without international legal objection also establishes customary law that such actions are acceptable. Given this, companies and states should feel secure in the idea that, though they cannot claim sovereignty over a celestial body, the resources, the things which they will want to exploit and develop for profit, can be used by anybody.

Three, a more favorable reinterpretation of the OST is also possible and has been undertaken previously. Soon after passage of the OST, the United States defined the idea that space should be used for “peaceful” purposes to mean non-aggressive. Though this was not adopted by other signatories at the time, European states and Japan also came to reinterpret the OST in this manner.8 In terms of commercial development, the OST states that space should be utilized and explored “for the purposes of all mankind”—there is a plausible case to make that space development and improvements to the global economy benefit “all mankind.” As long as space is being exploited and developed in such a way that contributes positively to the global economy, space is being used in the purposes described by the OST. Coffey specifically makes this argument in relation to lunar resources, writing, Using lunar resources to create cleaner, more efficiency energy on Earth, or to support exploration and settlement in space could arguably comply with the treaty’s requirement that lunar activities be carried out ‘for the benefit and in the interest of all countries’ even though the benefit is indirect.9

One final response to this counterargument is that, while it might be helpful to revisit and clarify the OST at some point, there is no need to revisit the idea of property rights in space currently. Hertzfeld and von der Dunk argue that “in the reasonably near future, no company operating in space will likely need outright ownership of space territory, including land on the moon.”10 One of the reasons they give to support this position is that, without knowing what form or shape development of the moon or other bodies will take, it will be exceedingly difficult to create an international agreement that deals with all needed issues. That is perhaps the very problem with the OST—it was written so early in the Space Age that it cannot adequately deal with issues that have arisen since then. As such, it is only prudent to wait to see what is needed and work from a broader base of knowledge to create a comprehensive agreement in the future.

In sum, the Outer Space Treaty is not a significant impediment to the development and commercialization of space. It does not need to be rejected wholesale nor does it necessarily depend on imminent negotiations to clarify the legal status of space resources. Commercialization is happening at a rapid pace and, while at some point it may be necessary to revisit the OST, nothing in the current regime stands in the way of using space to support the global economy.

#### Non-appropriation kills space mining – incentives.

Jonckheere 18 [Evarist Jonckheere, Master’s of Law, Ghent University, “The Privatization of Outer Space and the Consequences for Space Law,” 2018, Master’s Thesis, https://libstore.ugent.be/fulltxt/RUG01/002/479/330/RUG01-002479330\_2018\_0001\_AC.pdf, EA]

75. The property rights discussion takes centerstage in the exploitation industry. In short, private enterprises will want legal certainty regarding the ownership of space resources they unearth. Ideally these private enterprises will have property rights in outer space. The common heritage of mankind principle as outlined above, 144 will be featured frequently in this part of the dissertation.

76. The main stumbling block is the non-appropriation principle of the Outer Space Treaty145 and the Moon Treaty.146This international principle establishes that there will be no ownership over outer space or parts of it. There is thus no legal ground for property rights in outer space, on the contrary, their very existence seems to be excluded. By design, the principle clashes with the wants of private space mining enterprises and is unsupportive of an exploitation-based industry in outer space.

#### Private actors solve space war and specifically ASAT restraint.

Cobb 21 [Wendy N. Whitman Cobb, Associate Professor of Strategy and Security Studies at the School of Advanced Air and Space Studies, “Privatizing Peace: How Commerce Can Reduce Conflict in Space,” 2021, Routledge, pp. 68-69, EA]

Finally, given the involvement of an ever-larger number of private actors in space, states also need to consider the lost opportunity costs if private actors choose to forego research, development, and deployment of new technologies because the danger in space is too high. As space becomes more commercialized, these private actors can exert pressure on states to behave peacefully in order to promote further economic development. Gartzke and Quan Li argue that this can happen through the movement of capital from conflict-prone states or areas to non-conflictual states.50 This is not necessarily applicable to space because there is no area in space which is formally protected, but commercial space actors may choose not to engage in new economic investment which can in turn affect a state’s economic performance. To date, the size of the space sector is comparatively small, so, arguably, the potential economic loss would not be that great. Where the harm comes from is state reliance on private actors for military and national security space services. As states contract out space services to a greater extent, private actors exert an even greater influence over the state by having a capability they do not.

Why might private companies want a more conflict-free space? If there is weaponized conflict in space, they could potentially benefit through new launches to send up replacement satellites; this is similar to an argument that war can actually be beneficial to an economy because companies are needed to create materiel and weapons.51 But, in a debris filled environment, sending replacements is more difficult and dangerous. Some private companies want to engage in human spaceflight; a conflictual or more dangerous orbital environment would likely prevent those activities or increase their costs to such an extent that it becomes economically infeasible. James Clay Moltz argues specifically that “the growing presence of space tourists in low-Earth orbit would greatly increase the incentives for restraint in any future [ASAT] test programs.”52 Those foregone development costs and commercial activities can have a similar cost to states simply by discouraging private actors from participating in the market.

#### That turns case and goes nuclear – extinction.

Blatt 20 [Talia M. Blatt, “Anti-Satellite Weapons and the Emerging Space Arms Race,” 05/26/20, *Harvard International Review*, https://hir.harvard.edu/anti-satellite-weapons-and-the-emerging-space-arms-race/, EA]

Nevertheless, a space race born from the Cold War continues to unfold. While the current space race may not have the same monopoly on the American imagination as the sprint to the moon held during the 1950s and 60s, it deserves our equal attention. We are now witnessing the rapid and increasingly international development of anti-satellite weapons. The race for these weapons not only increases the risk of global conflict—it could jeopardize all future space exploration.

What Are Anti-Satellite Weapons (ASATs)?

Difficult to define, ASATs occupy a gray zone in international arms control. On one level, they are exactly what the term suggests: weapons designed to destroy or limit satellites for military purposes, such as undermining the command and control centers of an adversary’s military. ASATs can function in several ways. For example, kinetic energy ASATs (KE-ASATs) destroy satellites by physically colliding with them at high velocities. Drones, ballistic missiles, and explosives detonated near satellites can all function as KE-ASATs.

Conversely, non-kinetic ASATs use any non-physical mechanism to render a satellite inoperative, such as blinding satellites with lasers, launching cyberattacks, or jamming frequencies.

But definitional issues arise because any technology that can physically or non-kinetically damage a satellite can be considered an ASAT weapon. For example, supposedly benign technology aimed at removing defunct satellites or other space junk—known as Active Debris Removal (ADR) technology—can also remove active satellites. With ostensibly civil but covertly military capabilities or functions, many space technologies, including ADR, are put in a category commonly known as “dual-use.” The dual-use nature of space infrastructure makes differentiating between weapon and non-weapon nearly impossible. As a result, regulating ASATs—and many other space-based weapons systems—is extremely difficult.

A Brief History of ASAT Proliferation

The earliest ASAT testing began during the Cold War, when the success of Sputnik I in October of 1957 catalyzed American fears about the Soviet Union’s potential goal of developing nuclear armed satellites capable of circling the globe. In response, the US developed its first ASAT: Bold Orion, an air-launched ballistic missile. The Soviet Union responded with its own ASAT program, developing weapons through the 1960s and 70s known as co-orbitals. Unlike previous KE-ASAT designs, these co-orbitals worked by syncing up with a target satellite’s orbit, then detonating.

The United States responded to Soviet co-orbitals in the 1980s with the ASM-135 weapon, an air-launched KE-ASAT distinguished by its hit-to-kill method. Unlike the Soviet co-orbitals, the hit-to-kill system did not require explosives; it just used the energy generated by the collision between the craft and the satellite, making delivery more stable. In a 1985 demonstration authorized by President Ronald Reagan, an ASM-135 successfully destroyed a defunct satellite.

Roughly 30 years later, China joined the space race. In 2007, China successfully tested a KE-ASAT, destroying an old weather satellite with a ballistic missile. And just last year, India also successfully tested an ASAT in what the Indian government referred to as Mission Shakti.

As of 2018, Russia and China were still developing more advanced non-kinetic ASATs. Russia is specifically developing an ASAT system known as Nudol, which operates in Lower Earth Orbit and can move between orbital paths, threatening more satellites than weapons limited to just one orbital path. So, despite the end of the Cold War era, more and more nations are jumping into a space arms race that is resulting in the rapid proliferation of advanced space weaponry.

The ASAT Appeal

A global fixation on anti-satellite weapons is arguably the logical end result of the main American project of the late 20th and early 21st century: the movement to digital communications. Via the telephone, computers, and eventually the internet, the United States pioneered the use of space-based communications for most civil and military functions. The benefits of satellite-based communications—namely increased efficiency, precision, and volume of information transmitted—are self-evident; however, the US lead in the transition to space-based systems posed a threat: relying on satellites for military use more than any other country created an asymmetric dependency. In other words, an unexpected denial of space-enabled information or capabilities would be more debilitating to the United States than to any other country because no other country is as dependent on satellite communications.

In an era of US hegemony, powers like Russia, China, and India are looking for arenas in which they can make the most gains against a conventionally stronger opponent. The space race has an asymmetric nature: the more the United States develops in space, the more it has to lose. Thus, space warfare provides an arena where emerging powers can gain a strategic advantage relative to the US.

More broadly, ASATs are also desirable because they can function as conflict deterrents. If a conflict arises, countries may be less likely to escalate if they believe their opponents are capable of essentially blinding their military. Just as two nuclear armed opponents risk mutually assured destruction (MAD), two ASAT armed countries risk mutual impotence. If they both can “turn off” each other’s militaries—or deny access to the satellites upon which their opponent’s conventional and nuclear forces rely—both countries are rendered close to defenseless, a risk they would be extremely reluctant to take.

A Uniquely Dangerous Arms Race

Despite their deterrent functions, ASATs are more likely to provoke or exacerbate conflicts than dampen them, especially given the risk they pose to early warning satellites. These satellites are a crucial element of US ballistic missile defense, capable of detecting missiles immediately after launch and tracking their paths.

Suppose a US early warning satellite goes dark, or is shut down. Going dark could signal a glitch, but in a world in which other countries have ASATs, it could also signal the beginning of an attack. Without early warning satellites, the United States is much more susceptible to nuclear missiles. Given the strategy of counterforcing—targeting nuclear silos rather than populous cities to prevent a nuclear counterattack—the Americans might believe their nuclear weapons are imminently at risk. It could be twelve hours before the United States regains satellite function, which is too long to wait to put together a nuclear counterattack. The United States, therefore, might move to mobilize a nuclear attack against Russia or China over what might just be a piece of debris shutting off a satellite.

Additionally, accidental warfare, or strategic miscalculation, is uniquely likely in space. It is much easier to hold an adversary’s space systems in jeopardy with destructive ASATs than it is to sustainably defend a system, which is expensive and in some cases not technologically feasible because of limitations on satellite movement. Space is therefore considered offense-dominant; offensive tactics like weapons development are prioritized over defensive measures, such as improving GPS or making satellites more resistant to jamming.

As a result, countries are left with poorly defended space systems and rely on offensive posturing, which increases the risk that their actions are perceived as aggressive and incentivizes rapid, risky counterattacks because militaries cannot rely on their spaced-based systems after first strikes.

There are several hotspots in which ASATs and offensive-dominant systems are particularly relevant. Early warning satellites play a central role in US readiness in the event of a conflict involving North Korea. News of North Korean missile launches comes from these satellites. Given North Korea’s history of nuclear provocations, unflinchingly hostile rhetoric towards the United States and South Korea, and diplomatic opacity, North Korea is always a threatening, unknowable adversary, but recent developments have magnified the risk. With the health of Kim Jong-un potentially in jeopardy, a succession battle or even civil war on the peninsula raises the chances of loose nukes. If the regime is terminal, traditional MAD risk calculus will become moot; with nothing to lose, North Korea would have no reason to hold back its nuclear arsenal. Or China might decide to seize military assets and infrastructure of the regime. If the US does not have its early warning satellites because they have been taken out in an ASAT attack, the US, South Korea, and Japan are all in imminent nuclear peril, while China could be in a position to fundamentally reshape East Asian geopolitics.

The South China Sea is another hotspot in which ASATs could risk escalation. China is developing Anti-Access Area Denial (A2/AD) in the South China Sea, a combination of long range radar with air and maritime defense meant to deny US freedom of navigation in the region. Given the disputed nature of territory in the South China Sea, the United States and its allies do not want China to successfully close off the region.

But the most effective way to break an A2/AD system would be with anti-satellite weapons. ASATs could neutralize the maritime surveillance China relies upon to deny access to the region and guide cruise missiles. Thus, China is extremely wary of US ASAT development: risks to Beijing’s South China Sea strategy are seen as threats to China itself because of territorial sovereignty claims that are deeply important to the regime and have only become more pronounced under President Xi Jinping. If a Chinese satellite went dark, Beijing might perceive it as a US ASAT designed to undermine the A2/AD approach, and escalate with conventional force.

An Even Greater Risk

Many of these conflict scenarios start with the loss of satellite function, which may seem unlikely. But ASATs threaten satellites through more than just direct attack. ASAT testing, rather than deployment, risks the exponential accumulation of debris, which endangers satellites and creates a host of other problems.

KE-ASATs rely on smashing satellites into thousands of pieces, so each test adds tremendous amounts of space debris. The 2007 Chinese KE-ASAT test alone increased the number of objects in orbit by 20 percent, producing more than two thousand pieces of debris large enough to be tracked and likely thousands more too small to be counted that will remain in orbit for centuries.

Even the smallest pieces of debris can do great damage; traveling at more than 15,000 miles per hour, they can crash into other debris in a proliferation known as the Kessler Syndrome. The situation i

n space could approach a critical mass in which collision cascading occurs even if all launches were halted, choking orbits with debris until all satellites are destroyed and spaceflight rendered impossible. Compared to the negligible debris created during commercial launches, ASAT tests—especially if the arms race continues to escalate and countries with less developed space programs join with cruder designs—may accelerate the debris in space closer and closer to this critical mass.

If debris knocks out a satellite, an increasingly likely possibility in a world with ASAT tests, then the aforementioned conflict scenarios become more likely. Conflict aside, ASAT-based debris clouds are terrifying in their own right. Public health, transportation, climate science, and a litany of other crucial infrastructures are dependent on satellites that are now at risk. Satellite GPS is a cornerstone of the modern economy; some pundits believe that the slightest glitch in GPS satellites could shock the stock market and further destabilize an unstable global economy. During the pandemic, satellites are playing a crucial role in geospatial data collection for infectious disease modeling.

#### Yes the AFF bans mining – creating a body similar to the ITU but for space-property is a violation of non-appropriation like their Tronchetti evidence indicates is normal means for a topic ban – they intensify tensions through politicization.

Thompson 96 [Jannat C. Thompson, “Space for Rent: The International Telecommunications Union, Space Law, and Orbit/Spectrum Leasing,” 1996, *Journal of Air Law and Commerce*, Vol. 62, Issue 1, https://scholar.smu.edu/cgi/viewcontent.cgi?article=1425&context=jalc, EA]

Given that Tonga appears not to have violated the letter of any existing agreements, its subsequent leasing of its allotments nonetheless brings up the issue of whether a market-based system for the orbit/spectrum resource contravenes, at least in principle, the goals and premises of the Outer Space Treaty for similar reasons as those pertaining to the ITU Convention.

One suggested approach to this problem would be to vest an international body such as the ITU with property rights in the orbit/spectrum resource, with the international community in general benefitting from market-generated fees. 197 This approach could actually serve the common interests and the common heritage of mankind principles. 9 " The proceeds from leasing or auctions could be used to redistribute communications services among the less-developed nations. 199

Despite the common benefits such a system might create, however, the non-appropriation principle is violated, at least in spirit, because in essence such a process would create property rights (albeit in an intergovernmental organization) in the orbit/spectrum resource, thus contravening both the concept of common interests and non-appropriation. ° ° Furthermore, a system whereby the orbit/spectrum resource or revenues from it are distributed among the nations of the Earth according to their respective share of the resource 20 1 would in effect create a sovereign claim over that portion of the resource designated for a particular nation.20 2 Such a result is contrary to the non-appropriation principle.

Another problem with a free market approach is that, if an international authority is charged with apportioning a segment of the orbit/spectrum resource, setting and collecting fees, and distributing rents, a politicization of the process could very well result.20 3 Given the ongoing history of the regulation of telecommunications, characterized primarily by tensions between the developed nations and the developing countries, similar politically motivated conflicts would probably arise as the satellite "haves" and "have nots" vie for the resource. Such ongoing political tensions would only intensify if the ITU were the authority granted the power to decide who "deserves" orbit and spectrum or the revenues they generate.

### 1NC – Astroterror

#### No way they access this – if they OK space mining, then proliferation of the tech is inevitable and they don’t regulate the processes used to mine. If they don’t OK it, they don’t access any other parts of the advantage and the CP + turns outweigh.

### 1NC – Deflection

#### 1 -- The aff doesn’t stop intentional deflection by countries. The tech to deflect still stays around post plan

#### 2 – concede in cross that private entities are creating this tech rn - tech is like almost done being created

#### 3 – double bind – either a. tech exists and plan doesn’t solve or b. tech doesn’t exist and theres no risk of deflection

### 1NC – Mining

#### Public sector mining thumps

NASA 19 [“NASA Invests in Tech Concepts Aimed at Exploring Lunar Craters, Mining Asteroids,” NASA, June 11, 2019, <https://www.nasa.gov/press-release/nasa-invests-in-tech-concepts-aimed-at-exploring-lunar-craters-mining-asteroids>] TDI

NASA Invests in Tech Concepts Aimed at Exploring Lunar Craters, Mining Asteroids

Robotically surveying lunar craters in record time and mining resources in space could help NASA establish a sustained human presence at the Moon – part of the agency’s broader [Moon to Mars exploration](https://www.nasa.gov/specials/moon2mars/) approach. Two mission concepts to explore these capabilities have been selected as the first-ever Phase III studies within the [NASA Innovative Advanced Concepts](https://www.nasa.gov/niac) (NIAC) program.

“We are pursuing new technologies across our development portfolio that could help make deep space exploration more Earth-independent by utilizing resources on the Moon and beyond,” said Jim Reuter, associate administrator of NASA’s Space Technology Mission Directorate. “These NIAC Phase III selections are a component of that forward-looking research and we hope new insights will help us achieve more firsts in space.”

The Phase III proposals outline an aerospace architecture, including a mission concept, that is innovative and could change what’s possible in space. Each selection will receive as much as $2 million. Over the course of two years, researchers will refine the concept design and explore aspects of implementing the new technology. The inaugural Phase III selections are:

Robotic Technologies Enabling the Exploration of Lunar Pits

William Whittaker, Carnegie Mellon University, Pittsburgh

This mission concept, called Skylight, proposes technologies to rapidly survey and model lunar craters. This mission would use high-resolution images to create 3D model of craters. The data would be used to determine whether a crater can be explored by human or robotic missions. The information could also be used to characterize ice on the Moon, a crucial capability for the sustained surface operations of NASA’s Artemis program. On Earth, the technology could be used to autonomously monitor mines and quarries.

[Mini Bee Prototype to Demonstrate the Apis Mission Architecture and Optical Mining Technology](https://www.nasa.gov/directorates/spacetech/niac/2019_Phase_I_Phase_II/Mini_Bee_Prototype)

Joel Sercel, TransAstra Corporation, Lake View Terrace, California

This flight demonstration mission concept proposes a method of asteroid resource harvesting called optical mining. Optical mining is an approach for excavating an asteroid and extracting water and other volatiles into an inflatable bag. Called Mini Bee, the mission concept aims to prove optical mining, in conjunction with other innovative spacecraft systems, can be used to obtain propellant in space. The proposed architecture includes resource prospecting, extraction and delivery.

#### Nearly ZERO risk to any given satellite even ASSUMING cascades, Aff can’t solve it, and every other risk to spacecraft outweighs

Wein 9 [Lawrence M. Wein, Professor & Senior Fellow at Stanford’s Center for International Security and Cooperation Jeffrey S. Skoll Professor of Management Science at Stanford University and Senior Fellow at Stanford’s Center for International Security and Cooperation, former DEC Leaders for Manufacturing Professor of Management Science at MIT, and Andrew M. Bradley, PhD-Institute for Computational and Mathematical Engineering at Stanford University, Space debris: Assessing risk and responsibility, Advances in Space Research 43 (2009) 1372–1390]

More importantly, while our numerical results mimic earlier results (Liou and Johnson, 2005; Walker and Martin, 2004) that stressed the importance of postmission deorbiting, we do not necessarily agree with the claim that the only way to prevent future problems is to remove existing large intacts from space (Liou and Johnson, 2006, 2008). The divergence between our views and those in Liou and Johnson (2006, 2008) is perhaps due to the different performance metrics used. The root causes for alarm in Liou and Johnson (2006, 2008) appear to be the growth rate of fragments and the small increase in the rate of catastrophic collisions over the next 200 years (Liou and Johnson, 2008, Fig. 2). However, the great majority of catastrophic collisions in the SOI do not involve operational spacecraft, a

nd are hazardous only in the sense that the fragments generated from such a collision could subsequently damage or destroy operational spacecraft. Therefore, we introduced the notion of the lifetime risk of an operational spacecraft as the primary performance metric. Our model predicts that the lifetime risk is <5x10^-4 [less than .0005%] over the next two centuries, and always stays <10^-3 [less than .001%] than if there is very high (>98%) spacecraft deorbiting compliance. These risks appear to be low relative to the immense cost and considerable technological uncertainty involved in removing large objects from space, are dwarfed by the ~20% historical mission-impacting (but not necessarily mission-ending) failure rate of spacecraft (Frost and Sullivan, 2004), and could be overestimated if improved traffic management techniques lower future collision risks (Johnson, 2004). Hence, the need to bring large objects down from space does not appear to be as clear cut as suggested in Liou and Johnson (2006, 2008). Nonetheless, our model does not incorporate the possibility of intentional catastrophic collisions (ASAT tests, space wars) that could conceivably occur in the future. In addition, Fig. 5 considers only catastrophic collisions, whereas noncatastrophic intact-fragment collisions could easily disable an operational spacecraft. If the operational lifetime risk is modified to include noncatastrophic collisions with fragments >= 10cm, then the sustainable risk rises by ~50%: it increases from 2.19x10^-2 [.0219%] to 3.09x10^-2 in the base case, and increases from 4.91x10^-4 [.000491%] to 7.94x10^-4 in the full compliance case. Moreover, if fragments >= 1 cm (rather than >= 10 cm) are harmful to spacecraft (Johnson, 2004), then we (as well as other researchers) could be underestimating the risk.

In summary, in the absence of the removal of large objects from space, the sustainable lifetime risks in Figs. 3–5 do not appear to be obviously above or below a tolerable level. Even if these risks are deemed acceptable, it is prudent to invest in research and development for space remediation technologies, which is a topic of current study (Proposal for forming an IAA study group, 2000). However, given the optimality of full deorbit compliance from a societal, sustainable perspective, and the sensitivity of sustainable lifetime risk to postmission deorbit compliance, the primary focus for policymakers should be on increasing compliance, which leads us to a discussion of economic instruments that could be used to address this issue.

### 1NC – US-Russia Adv

#### Limited Russia/China co-op is inevitable and won’t be stopped by U.S. engagement, but deep ties are impossible and have no impact.

Dr. James Jay Carafano 19, PhD from Georgetown University, Master of Arts Degree in Strategy from the U.S. Army War College, Adjunct Professor at Georgetown University, Former Director of Military Studies at the Army’s Center of Military History, Vice President of the Kathryn and Shelby Cullom Davis Institute for National Security at the Heritage Foundation, “Why the China-Russia Alliance Won't Last”, The National Interest, 8/5/2019, https://nationalinterest.org/feature/why-china-russia-alliance-wont-last-71556

So, now everybody wants to be Bismarck. They see themselves shaping history by artfully moving big pieces on the geostrategic chessboard. And one gambit they just can’t resist is moving to snip the growing bonds of Sino-Russian cooperation.

My advice to them: Just stop.

Fears of an allied China and Russia running amok around the world are overblown. Indeed, there is so much friction between these “friends,” any attempt to team up would likely give both countries heat rash.

Siren’s Cat Call

Here’s the lame narrative that’s animating the Bismarck wannabes: The United States is pushing back against Moscow and pressing Beijing. This is driving Moscow and Beijing closer together. Beijing and Moscow will then gang-up on the United States. To prevent this, the United States should make nice with Moscow (undermining the incipient Sino-Russian détente) and then focus on beating back against China.

Yes, China and Russia are going to work together to some degree. They have important things in common. For example, both are unaccountable authoritarian regimes that share the Eurasian continent. Other indicators of compatibility: they like doing business with each other, and both like to make up their own rules. Heck, they don’t even have to pretend the liberal world order is a speed-bump in their joint ventures. Both happily engage with the world’s most odious regimes, from Syria to Venezuela. And, of course, neither has any compunction about playing dirty when it serves their interests.

They already play off of each other to frustrate foreign-policy initiatives from Washington. For example, if the United States pressures Russia to vote a certain way on a measure before the UN Security Council, Russia will often don the white hat and vote as we desire, knowing that Beijing will veto the measure for them. Similarly, if the United States leans on Beijing stop giving North Korea some form of aid and comfort, Beijing can go along with the request, knowing that Moscow will pick up the baton for them.

What the neo-Bismarcks need to ask themselves is: Why would Russia or China ever consider giving up these practices? Why would they make the ongoing great power competition easier for the United States? That makes no sense. That is not in their self-interest.

Any notion that the United States could somehow seduce Russian president Vladimir Putin from playing house with Beijing is fanciful. Putin doesn’t do something for nothing; his price would be quite high. He could demand a free hand in Ukraine, or lifting sanctions, or squelching opposition to Nordstream II, or giving Russia free rein in the Middle East. Any of these “deals” would greatly compromise American interests. Why would we do that? And what, exactly, is Putin going to deliver in return? What leverage does Russia have on Beijing? The answer is not near enough to justify any of these concessions.

On the other hand, what leverage would a Russia-China alliance have on the United States? They wouldn’t jointly threaten Washington with military action. A central element of both their strategies is that they want to win against the United States “without fighting.”

Moscow might be happy if the United States got distracted in a military mix-up with China. Conversely, Beijing could okay with the Americans have an armed confrontation with the Russians. But, neither of them will be volunteering to go first anytime soon.

Even if they linked arms to threaten the United States in tandem, the pain would not be worth the gain. As long as America maintains a credible global and strategic deterrent, a Sino-Russian military one-two punch is pretty much checkmated. Peace through strength really works.

If direct military confrontation is out of bounds, then what can Beijing and Moscow do using economic, political, and diplomatic power or tools of hybrid warfare? The answer to that question is easy: exactly what they are already doing.

We have plenty of evidence of on-going political warfare aimed at the United States, its friends, allies, and interests. Some of these activities are conducted in tandem; some are instances of copy-catism; and some are independent and original.

The political warfare takes many forms—ranging from corrosive economic behavior to aggressive diplomacy to military expansionism and more.

All these malicious efforts are a problem. What they don’t add up to is an existential threat to vital U.S. interests. In other words, we can handle this without sucking up to Putin and undermining our own interests. In fact, we already have a national-security strategy that adequately addresses these concerns.

One more thing inhibiting a Sino-Russian hookup. Russian and Chinese power is largely asymmetrical. They have very different strengths and weaknesses. In coordinating their malicious activities against the United States, they don’t line out very well. China, for example, can’t really do anything substantive to help Russia in Syria. Putin doesn’t have much to offer in the South China Seas or in brokering a U.S.-China trade agreement.

There are also limits to the Sino-Russia era of good feelings. Other than trying to take America down a notch, their global goals are not well aligned. Indeed, the more they try to cooperate, the more their disparate interests will grate on the relationship.

For example, China is meddling more in Central Asia and the Arctic—spaces where Russia was dominant. Moscow has to ask itself: Why is Beijing elbowing in? There is an argument that rather than looking for a strategic partnership, China is just biding its time till Russia implodes, and Beijing steps in and sweeps up the choice pieces.

And, as much as Putin likes to tweak Trump about Moscow’s ties with Beijing, it is becoming more apparent to Washington that Russia is ever more the junior partner. Can Putin really continue to play Robin to a Chinese Batman? As for China, they have to ask: What does Robin really bring to the dynamic-duo?

#### No Russia war scenario in the 1AC – 1AR is too late.

#### No impact to China-Russia relations – they’re committed to stability and interdependence

Sushentsov 19 [Andrey Sushentsov holds a PhD. In U.S. Foreign Policy from the Moscow State Institute of International Relations, is an EASI-Hurford Next Generation fellow at the Carnegie Endowment for International Peace, “Global Peace: Why a Major War Is Impossible in Modern International Relations,” 6-6-19, https://valdaiclub.com/a/highlights/global-peace-major-war/]

Despite growing signs of military preparations under way in leading world countries, there is every reason to believe that a major war is impossible in modern international relations, as is evidenced, inter alia, by the recent Indian-Pakistani war crisis that involved an exchange of air strikes and took a toll of several hundred lives. Eventually, both nuclear states stepped back from the brink and prepared the ground for a return to the status ante bellum without either side loosing face. This and other similar episodes show that the military factor is still important when it comes to international relations. But the same circumstances indicate that **leading** military **powers are unwilling to use war** as a method of solving differences between themselves. At the same time, different parts of the world have a belt of fragile states that are much inferior to the leading powers militarily and often become a field of rivalry between them. However, this field is gradually contracting. The leading countries make mistakes during crises that accompany their rivalry and eventually acquire new experience of restraint and responsible behavior. We can say that this experience of living in a fragile and increasingly unpredictable world is somehow akin to the tempering of steel as it is transformed from ore to a stronger material. The three **key processes leading to the strengthening** of **the fabric of international relations are** the Russia-West rivalry, **the Russia-China entente**, and a strategic autonomy of an increasing number of great powers. The first key trend is the Russia-West rivalry. Focused mostly on the Eurasian continent, it is a rivalry of economic and integration models. It bears little resemblance to the Cold War militarily, although certain aspects of political rivalry are also obvious. The scale of deployed forces and assets are lower by an order of magnitude than the threshold levels of the late 1980s, while the preparations made after the Ukraine crisis are very much unlike the efforts to raise an army of invasion or a force grouping deployed by the Warsaw Treaty Organization and NATO in Germany. At the same time, there is a belt of fragile states in East Europe and the Balkans, which are the first to become a field of confrontation between Russia and the West. But this confrontation is not frontal. The West, like Russia’s allies, are involved in a controversy over a strategic course. The European allies of the US are often at loggerheads with the United States over the increases in military spending or the possible aims of US military invasions. Russia’s allies are often ambivalent towards its political solution to conflicts. There is still uncertainty on the prospects for Europe’s strategic autonomy vis-à-vis the United States but this problem makes it difficult to clarify whether or not Russia and the West are confronting each other in Eurasia. A rise in military tension in Europe is not on the cards. In response to Polish and Baltic requests, the US often takes minimal political steps that cause considerable information reverberations. But if we are to use the Cold War metaphor, Europe is a scene of a Strange Cold War that lacks aggressive offensive action, while the confrontation between the adversaries is in the form of continuous and still effective political provocations. A recent case in point is the scandal in Austria that allegedly involved a Russian citizen who turned out to be a Bosnian female student. However, this led to the downfall of Sebastian Kurtz’s government. The second key trend is the emergence of a Russian-Chinese entente, for which structural conditions have ripened. The Russian and Chinese political and economic gravitation centers are in different parts of Eurasia and have different vectors. Seventy-five percent of the Russian population and GDP are in European Russia, while most of China’s population and GDP are concentrated along its Pacific coast. The Russian vector is pointing to Europe, China’s, to the Pacific. Thus, they are back to back in relation to each other and facing one and the same rival, the United States. The entente has taken shape as a result of a protracted rapprochement that began in the late 1980s. The current state of relations is, without exaggeration, unprecedentedly close in the strategic sense. But this is not a formal military alliance

. The West is just beginning to conceptualize Russian-Chinese relations. As to Russian and Chinese experts, they have been watching the consolidation of strategic relations between the two countries for over two decades. In the aggregate, the Russian-Chinese rapprochement has led to the disappearance of a security frontier in Central Eurasia. Russia and China are not competing for political influence in Central Asian countries and Mongolia, as is always the case with Ukraine that has finally become a bone of contention between Russia and the West. We can say that the Russian-Chinese **rapprochement is a guarantee of stability** for countries in the region, which helps them weather any political stresses (such as the transit of power) without the interference from outside forces. Moreover, **Russia and China have a constructive approach** to approximating their own integration initiatives. Establishing connectivity between the EAEU and One Belt, One Road is extremely important in this sense. Rail and motor haulage of cargo in Central Asia will be able to provide an economic impetus to all countries in the region.

#### LIO challenges won’t cause war

**Hammond ’20** [Andrew Hammond is an Associate at LSE IDEAS at the London School of Economics, “Why another global conflict is unlikely soon,” 5-10-20, https://gulfnews.com/opinion/op-eds/why-another-global-conflict-is-unlikely-soon-1.71415578]

And as 100 years ago, geopolitical tensions are mounting as ‘revisionist nations’ challenge key elements of the US-led international order. This is partly driven by rising economic power resurrecting nationalism and claims for resources, as witnessed by disputes in the South China Sea for instance. Recent years have also seen Russia’s annexation of Ukraine. Yet, it is perhaps Asia where most tension and insecurity lie in terms of potential for a great-power war. China’s remarkable rise is unsettling the region, and indeed much of the world beyond. Japanese Prime Minister Shinzo Abe is just one of the leading politicians who has drawn parallels between the geopolitical landscape in Asia today and Europe in the first half of the 20th century. Scrapping US involvement Yet, the irony is that it is the US itself that, under the Trump administration, is also hastening the collapse of the post-war order created after the allied victory over the axis powers. Trump, unlike all his post-war predecessors in the White House, has disowned much of the system of US-led institutions and alliances, promising instead an America-first platform that had the potential to reshape US foreign and trade policy more radically than at any point since the beginning of the Cold War. Trump, for instance, has shifted away from this post-war orthodoxy — pursued by both Democratic and Republican presidents — by scrapping US involvement in the Comprehensive and Progressive Trans-Pacific Partnership trade deal with key allies in Asia-Pacific and the Americas; withdrawing from the Paris climate change deal agreed by over 170 nations; and threatening the future of the World Trade Organisation and World Health Organisation. He has also re-negotiated other international and regional deals including the North American Free Trade Agreement. Key differences So these risks are real, significant, and could yet grow substantially in the 2020s. However, as of May 2020, there are also some **key differences with the world of the first half of the 20th century** which, in the absence of catastrophic miscalculation, **makes a major power war unlikely** for the foreseeable future. This is not least because memories of not just the Second World War, but also the First World War linger powerfully today. Aside from the many millions who died in both conflicts, these wars set in chain several developments which blighted the world for decades to come. These include the emergence of Communism in Russia and — as numerous historians assert — the rise of Nazi Germany and the seeds of the Second World War which led on, in turn, to the Cold War. Brake on major-power conflict Another major difference between now and most of the first half of the 20th century, before the atomic age began in 1945 with the detonation of the first nuclear bomb, is the presence of nuclear weapons which, as during the Cold War, generally serve as a brake on major-power conflict. It is noteworthy here that both revisionist nations, as well as ‘status-quo powers’ in the West, possess atomic arsenals. Yet another key change is that, unlike much of the first half of the 20th century, one of the key legacies of the Second World War is **a dense web of post-war international institutions**, especially the United Nations, which **continue to have significant resilience and legitimacy** decades after their creation. While these bodies are imperfect, and in need of reform, the fact remains that they have generally enabled international security, especially with five of the key powers on the UN Security Council.