## 1

**Interpretation – appropriation means claim of sovereignty. Affirmatives must only defend sovereign claims on outer space by private entities as unjust.**

**Violation: they defend \_\_\_\_\_**

**Private appropriation of extracted space resources is distinct from appropriation “of” outer space. Despite longstanding permission of appropriation of extracted resources, sovereign claims are still universally prohibited.**

Abigail D. **Pershing**, J.D. Candidate @ Yale, B.A. UChicago,**’19**, "Interpreting the Outer Space Treaty's Non-Appropriation Principle: Customary International Law from 1967 to Today," Yale Journal of International Law 44, no. 1

II. THE FIRST SHIFT IN CUSTOMARY INTERNATIONAL LAW’S INTERPRETATION OF THE NON-APPROPRIATION PRINCIPLE

Since the drafting of the Outer Space Treaty, several States have chosen to reinterpret the non-appropriation principle as narrower in scope than its drafters originally intended. This reinterpretation has gone largely unchallenged and has in fact been widely adopted by space-faring nations. In turn, this has had the effect of changing customary international law relating to the non-appropriation principle. Shifting away from its **original blanket application** in 1967, States have carved out an exception to the non-appropriation principle, allowing appropriation of extracted space resources.53 This Part examines this shift in the context of the two branches of the United Nation’s customary international law standard: State practice and opinio juris.

**A. State Practice**

The earliest hint of a change in customary international law relating to the interpretation of the non-appropriation clause came in 1969, when the United States first sent astronauts to the moon. As part of his historic journey, astronaut Neil Armstrong collected moonrocks that he brought back with him to Earth and promptly handed off to the National Aeronautics and Space Administration (NASA) as U.S. property.54 Later, the USSR similarly claimed lunar material as government property, some of which was eventually sold to private citizens. 55 These first instances of space resource appropriation did not draw much attention, but they presented a distinct shift marking the beginning of a new period in State practice. Having previously been limited by their technological capabilities, States could now establish new practices with respect to celestial bodies. This was the beginning of a pattern of appropriation that slowly unfolded over the next few decades and has since solidified into the general and consistent State practice necessary to establish the existence of customary international law. Currently, the U.S. government owns 842 pounds of lunar material.56 There is little question that NASA and the U.S. government consider this material, as well as other space materials collected by American astronauts, to be government property.57 In fact, NASA explicitly endorses U.S. property rights over these moon rocks, stating that “[l]unar material retrieved from the Moon during the Apollo Program is U.S. government property.”5

The U.S. delegation’s reaction to the language of the 1979 Moon Agreement further cemented this interpretation that appropriation of extracted resources is a **permissible exception** to the non-appropriation clause of Article II. Although the United States is not a party to the Moon Agreement, it did participate in the negotiations.59 The Moon Agreement states in relevant part: Neither the surface nor the subsurface of the moon, nor any part thereof or natural resources in place, shall become property of any State, international intergovernmental or nongovernmental organization, national organization or nongovernmental entity or of any natural person.60

In response to this language, the U.S. delegation made a statement laying out the American view that the words “in place” imply that private property rights apply to extracted resources61—a comment that went **completely unchallenged**. That **all States seemed to accept this point**, even those bound by the Moon Agreement, is further evidence of a shift in customary international law.62

**Presume neg – all parties to the outer space treaty prohibit “appropriation” of resources by private entities.**

Melissa J. **Durkee**, J. Alton Hosch Associate Professor of Law, University of Georgia, **’19**, "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

#### Negate –

#### 1] Limits – their interp explodes the topic to include affs about using space for any single purpose, like space-based solar power, helium and REMs on the Moon, space tourism, and climate adaptation satellites – explodes limits – topic lit is concerned with sovereignty over space and space colonization broadly, privileges the aff by stretching pre-tournament neg prep too thin and precludes nuanced case negs that rigorously test the aff

#### 2] Precision – Justifies the aff arbitrarily doing away with words in the resolution which allows affs about anything from public appropriation affs to airspace and many more which decks predictability – prefer our interp for topic relevance, the OST is the most prominent space non-appropriation agreement and topic debates should be relevant to the real world.

**Drop the debater – their abusive advocacy skewed our 1NC construction, allowing 1AR restart doesn't solve**

**Competing interps on T – A] topicality is a yes/no question, you can’t be reasonably topical B] norm-setting -- reasonability is arbitrary and invites judge intervention C] reasonability causes a race to the bottom of questionable argumentation**

## 2

#### CP: The appropriation of outer space by private companies is unjust except the Copernicus Sentinel-1 and -2 Satellites

#### That competes –

#### The resolution/plan is entirety of appropriation, but the PIC retains a critically important satellite duo

#### The Sentinels appropriate low earth orbit

* LEO is 2k km or less

EO 21

EO directory (essentially an encyclopedia of all recent satellite launches), Last Updated Oct. 4 2021, "Copernicus: Sentinel-1," No Publication, https://directory.eoportal.org/web/eoportal/satellite-missions/c-missions/copernicus-sentinel-1, // HW AW

As part of the Copernicus space component, the Sentinel-1 (S1) mission is implemented through a constellation of two satellites (A and B units) each carrying an imaging C-band SAR instrument (5.405 GHz) providing data continuity of ERS and Envisat SAR types of mission. Each Sentinel-1 satellite is designed for an operations lifetime of 7 years with consumables for 12 years. The S-1 satellites will fly in a near polar, sun-synchronized (dawn-dusk) orbit at 693 km altitude. [14)](https://directory.eoportal.org/web/eoportal/satellite-missions/c-missions/copernicus-sentinel-1" \l "foot14%29)

#### They save mangroves, which reduces tsunami impact by 90%

ESA 7-26-21

European Space Agency (euro intergovernmental org that documents space advancement 7-26-2021, "How satellites save mangroves from space," European Space Agency, https://www.esa.int/Enabling\_Support/Preparing\_for\_the\_Future/Space\_for\_Earth/How\_satellites\_save\_mangroves\_from\_space, // HW AW

After the 2004 Indian Ocean tsunami, Wetlands International saw that many lives had been spared by something surprising – mangroves. In response the non-profit organisation scaled up its work on protecting and restoring these complex ecosystems. One important tool in their arsenal is images from the Copernicus Sentinel-1 and -2 satellites. **Mangroves make up only a small proportion of the world's forest but are vital for humans and nature**. They are home to fish, shellfish, birds and mammals. They store more carbon per hectare than rainforests. And they protect coastal communities from extreme weather. As [Wetlands International](https://www.wetlands.org/) discovered, they can **reduce the destructive force of a tsunami by up to 90%.** [Lammert](https://www.wetlands.org/profile/lammert-hilarides/) is an information manager at Wetlands International. He explains: "After the [2004 tsunami](https://en.wikipedia.org/wiki/2004_Indian_Ocean_earthquake_and_tsunami) we saw that areas with intact mangroves suffered far fewer deaths and less damage than those with lost or damaged mangroves." [The Irrawaddy Delta in Myanmar, imaged by the Copernicus Sentinel-2A satellite. Green areas show dense mangrove forest](https://www.esa.int/ESA_Multimedia/Images/2017/07/Irrawaddy_Delta_Myanmar) Between 1996 and 2016, around [6.6%](https://oceanwealth.org/wp-content/uploads/2019/02/MANGROVE-TNC-REPORT-FINAL.31.10.LOWSINGLES.pdf) of mangroves were lost worldwide. This was down from 1% per year in the 1980s. "Historically, the biggest risk that mangroves face is from conversion to agriculture on the land side, and to aquaculture on the sea side," says Lammert. "But there is also growing pressure from climate change, with rising sea levels starting to overwhelm mangroves and changing rainfall patterns causing some to die off because of a lack of fresh water." The good news is that **most can be restored**. An online platform called [Global Mangrove Watch](https://www.globalmangrovewatch.org/) is providing **remote sensing data and tools for coastal and park managers, conservationists, policymakers and practitioners to respond by pinpointing the causes of local mangrove loss and tracking restoration progress**. [Screenshot from Global Mangrove Watch, showing the location of mangroves](https://www.esa.int/ESA_Multimedia/Images/2021/07/Global_Mangrove_Watch) Together with [Aberystwyth University](https://www.aber.ac.uk/en/), [soloEO](https://www.soloeo.com/) and [The Nature Conservancy](https://www.nature.org/en-us/), Wetlands International is a key partner in Global Mangrove Watch, so Lammert explains how the platform works: "We use satellite data to produce a map of all the mangroves around the world once a year. It currently goes to 2016 but later this year we will release maps up to 2020." But to detect destruction and stop it in time, park managers, conservationists and policymakers need information more immediately. "**We also use data from the Sentinel-1 and -2 and** [**Landsat 8**](https://www.usgs.gov/core-science-systems/nli/landsat/landsat-8?qt-science_support_page_related_con=0) **satellites to provide what we call 'change alerts' for Africa. The Sentinels reimage the same location every few days, so once a month we compare their new images with a baseline map. We send out alerts if we see a difference in mangrove cover**." [Change alerts in Guinea-Bissau](https://www.esa.int/ESA_Multimedia/Images/2021/07/Global_Mangrove_Watch2) The current baseline map was built using 2010 data from the US Landsat and Japanese [ALOS](https://global.jaxa.jp/projects/sat/alos/) satellites, but the team is currently updating it using 2021 data from the Copernicus Sentinels. This higher resolution data will give the new map a resolution of just 10 metres, compared to the current 25 metres resolution. Change alerts have already been used to catalyse action, including in Guinea-Bissau. In March 2019 a Sentinel-2 image showed that an area of mangrove in the country had been significantly destroyed. A closer look revealed that a new dam had been built and was blocking the tide from coming in and out. "We sent people on the ground to the site. They saw that the government had built the dam to turn the mangrove into rice fields. There was nothing that could be done to prevent the transformation, but often in these cases the rice fields are tended for a few years, then the mangroves grow back." [Detected changes in the mangrove in Guinea-Bissau (inset: Global Mangrove Watch) overlaid on aerial photograph (Google Maps, 2019).](https://www.esa.int/ESA_Multimedia/Images/2021/07/Mangrove_destruction_alerts_in_Guinea-Bissau) [Copernicus Sentinel-2 images showing the change in a mangrove in Guinea-Bissau between 21 March 2018 and 2 March 2021. On 21 March 2019, a dam is visible. Healthy mangrove is shown in orange. The mangrove area is getting steadily greener between 2019 and 2021, showing that mangroves are dying off.](https://www.esa.int/ESA_Multimedia/Images/2021/07/Mangrove_destruction_in_Guinea-Bissau_between_March_2018_and_March_2021) "Our change alerts currently cover Africa, but we will soon be providing them for five of the most mangrove-rich countries, including Mexico and Indonesia. We hope that the alerts will be available for the whole world in the next couple of years." "**I want to emphasise how happy we are with the Sentinel images**," concludes Lammert. "**They are free, high resolution, and available almost immediately after they are taken. This means that we can act quickly to protect and recover mangroves worldwide."**

#### Climate change induced tsunamis outweigh – coastal agriculture and populations are disrupted, nuclear power plants melt down, mass migration, infrastructure is destroyed

VT 18

Virginia Tech article summarizing tsunami simulations done by Robert Weiss (director of the National Science Foundation-funded Disaster Resilience and Risk Management graduate education program), 8-15-2018, "Climate change sea level rises could increase risk for more devastating tsunamis worldwide: Even minor sea-level rise, by as much as a foot, poses greater risks," ScienceDaily, https://www.sciencedaily.com/releases/2018/08/180815141444.htm, // HW AW

As sea levels rise due to climate change, **so do the global hazards and potential devastating damages from tsunamis**, according to a new study by a partnership that included Virginia Tech. Even minor sea-level rise, by as much as a foot, poses greater risks of tsunamis for coastal communities worldwide. The threat of rising sea levels to coastal cities and communities throughout the world is well known, but new findings show the likely increase of flooding farther inland from tsunamis following earthquakes. Think of the tsunami that devasted a portion of northern Japan after the 2011 Tohoku-Oki earthquake, **causing a nuclear plant to melt down and spread radioactive contamination.** These findings are at the center of a new Science Advances study, headed by a multi-university team of scientists from the Earth Observatory of Singapore, the Asian School of the Environment at Nanyang Technological University, and National Taiwan University, with critical support from Virginia Tech's Robert Weiss, an associate professor in the Department of Geosciences, part of the College of Science. "Our research shows that sea-level rise can significantly increase the tsunami hazard, which means that smaller tsunamis in the future can have the same adverse impacts as big tsunamis would today," Weiss said, adding that smaller tsunamis generated by earthquakes with smaller magnitudes occur frequently and regularly around the world. For the study, Weiss was critical in helping create computational models and data analytics frameworks. At Virginia Tech, Weiss serves as director of the National Science Foundation-funded Disaster Resilience and Risk Management graduate education program and is co-lead of Coastal@VT, comprised of 45 Virginia Tech faculty from 13 departments focusing on contemporary and emerging coastal zone issues, such as disaster resilience, migration, sensitive ecosystems, hazard assessment, and natural infrastructure. For the study, Weiss and his partners, including Lin Lin Li, a senior research fellow, and Adam Switzer, an associate professor, at the Earth Observatory of Singapore, created computer-simulated tsunamis at current sea level and with sea-level increases of 1.5 feet and 3 feet in the Chinese territory of Macau. Macau is a densely populated coastal region located in South China that is generally safe from current tsunami risks. At current sea level, an earthquake would need to tip past a magnitude of 8.8 to cause widespread tsunami inundation in Macau. But with the simulated sea-level rises, the results surprised the team. The sea-level rise dramatically increased the frequency of tsunami-induced flooding by 1.2 to 2.4 times for the 1.5-foot increase and from 1.5 to 4.7 times for the 3-foot increase. "We found that the increased inundation frequency was contributed by earthquakes of smaller magnitudes, which posed no threat at current sea level, but could cause significant inundation at higher sea-level conditions," Li said. In the simulated study of Macau -- population 613,000 -- Switzer said, "We produced a series of tsunami inundation maps for Macau using more than 5,000 tsunami simulations generated from synthetic earthquakes prepared for the Manila Trench." It is estimated that sea levels in the Macau region will increase by 1.5 feet by 2060 and 3 feet by 2100, according to the team of U.S.-Chinese scientists. The hazard of large tsunamis in the South China Sea region primarily comes from the Manila Trench, a megathrust system that stretches from offshore Luzon in the Philippines to southern Taiwan. The Manila Trench megathrust has not experienced an earthquake larger than a magnitude 7.8 since the 1560s. Yet, study co-author Wang Yu, from the National Taiwan University, cautioned that the region shares many of the characteristics of the source areas that resulted in the 2004 Sumatra-Andaman earthquake, as well as the 2011 earthquake in northern Japan, both causing massive loss of life. These increased dangers from tsunamis build on already known difficulties facing coastal communities worldwide: The gradual loss of land directly near coasts and increased chances of flooding even during high tides, as sea levels increase as the Earth warms. "The South China Sea is an excellent starting point for such a study because it is an ocean with rapid sea-level rise and also the location of many mega cities with significant worldwide consequences if impacted. The study is the first if its kind on the level of detail, and many will follow our example," Weiss said. Policymakers, town planners, emergency services, and insurance firms must work together to create or insure safer coastlines, Weiss added. "Sea-level rise needs to be taken into account for planning purposes, for example for reclamation efforts but also for designing protective measures, such as seawalls or green infrastructure." He added, "What we assumed to be the absolute worst case a few years ago now appears to be modest for what is predicted in some locations. We need to study local sea-level change more comprehensively in order to create better predictive models that help to **make investments in infrastructure that are or near sustainable."**

## 3

#### The US government is perfectly positioned to focus on space governance and let private entities develop tech – this avoids bilateral or unilateral missions that increase the chance for conflict and space weaponization while creating effective multilateral agreements that spill over

Rosenberg and Marber 21 (Mark Y. - CEO of Geoquant and an adjunct professor at Columbia University’s School of International and Public Affairs, Peter - teaches at Harvard University and is a senior portfolio manager at Aperture Investors, 2/22, “America Needs a Supercharged Space Program,” [accessed 9/25/21], <https://foreignpolicy.com/2021/02/22/biden-space-force-race-policy-rockets-china/>)

In 2015, the U.S. government granted U.S. citizens the right to own any materials they extract in space, blowing open the door for civilian space business. In 2018, China launched a reconnaissance rover on the moon’s far side that’s been gathering data for more than 18 months now. In late 2019, then-President Donald Trump launched the formation of the U.S. Space Force as part of the military, while early 2020 saw the National Aeronautics and Space Administration (NASA) sign a contract with Axiom Space to build the first commercial space station. And in October 2020, the United States led the signing of the Artemis Accords, a set of bilateral agreements on space with Australia, Canada, Italy, Japan, Luxembourg, Italy, the United Kingdom, and the United Arab Emirates, which deliberately skirted the United Nations and did not include space rivals such as China and Russia. (Ukraine and Brazil were later added to the accords.) Although this pact claims to affirm the Outer Space Treaty, it actually increases the potential for conflict by expanding the interpretation of commercial space law while drawing hard geopolitical borders. Without Russia and especially China on board, much of the world will see the Artemis Accords as the informal rulebook of a cliquish club rather than a true multilateral agreement. Meanwhile, a new space race is gathering stream: In addition to this year’s unmanned missions to Mars, both the United States and China are planning moon landings later this decade. The Biden administration must prioritize a more multilateral approach to space governance than what was taken under Trump. Just like on Earth, a lack of international standards in space will likely lead to chaotic, wasteful competition. A 2011 U.S. law blocking NASA from cooperating with Chinese agencies has already shut China out of the U.S.-Russian International Space Station, prompting the Chinese to start building their own while partnering with Russia on a lunar research station. Revising this law would be a good place for the Biden administration to start. Cooperating with China in space might be a sensible hedge against growing conflict on Earth. Unregulated space activity could create a myriad of problems from accidentally or intentionally blocked data transmission to orbital pollution from too many space objects. Indeed, U.S. companies are currently the worst offenders, highlighting the need for more targeted regulation. Just a few uncontrolled collisions could generate enough debris to render near-Earth space unusable. And of course, no one wants to see space weaponized with extremely expensive, escalating arms races. Given private U.S. companies’ increasingly aggressive push to expand space exploration, the U.S. government is in a position to structure a more effective extraterrestrial regulatory regime. Renewed U.S. leadership founded on rebuilt space capabilities will be key to any hope for multilateral space cooperation. A more dedicated focus on space governance and a more aggressive approach to exploration can be the underpinnings of a future “New Space Deal.” A supercharged space program can help build entire new industries, create new jobs, green the economy, turbocharge next-generation communications, and expand the frontiers of science and technology. By uniting Americans behind a common purpose, it could even help mend the country’s frayed democracy. It would also reestablish Washington’s leadership in the fight against climate change and for a stronger multilateral system. Who else but the United States could even contemplate such a bold plan?

#### Non-state actors in space are conflict dampeners – they avoid geopolitical tension and have financial incentives to keep conflict low

Frankowski 17 (Pawel, Assistant Professor at the Faculty of National Security. His current research interests include space policy, labour standards in free trade agreements, and theories of international relations, Jagiellonian University in Kakow, “OUTER SPACE AND PRIVATE COMPANIES CONSEQUENCES FOR GLOBAL SECURITY”, <https://doi.org/10.12797/Politeja.14.2017.50.06>)

In the terms of privatization and space security, space remains relatively untapped, but commercial and military benefits from space exploration/exploitation could even lead to ‘privatization of space’. Such privatization will result from growing pressure on spacefaring countries to defect from cooperation, since is less viable with good number of multiple actors who entered the space.36 However, space policy and space research are characterized by very high costs, which are rather impossible to bear by private companies, limited by economic calculation. As pointed out earlier, under-investment in technological development by private companies it is related to the fact that these actors are not focused on profits of a social nature, such as improving the quality of life of the recipient of the product.37 This makes some technology, potentially beneficial to society, not developed or introduced into use, because the profit margin is too small to make this viable for commercial players. To conclude, privatization of space security can develop in unexpected ways, but in today’s space environment private actors would rather play the role of security regulators than security providers. When investment in space technologies is less profitable than other areas of economy, private actors would focus on soft law and conflict prevention in space, and new private initiatives will appear. For example, apart from important space companies, as SpaceX or Blue Origin active in outer space, other private actors as Secure World Foundation (SWF), who focus on space sustainability, will play more important role in crafting international guidelines for space activities.38 This path the way for future solutions and projects, as cleaning the space debris, extracting resources from asteroids and planetoids, refuelling satellites, providing payload capabilities for governmental entities on market-based logic, will be based on activity non-state actors, providing soft law and regulatory solutions, where space faring states are unable to find any compromise. Therefore private companies will be in fact global (or space) regulators, as part of UNCOPUS, being involved in space activities.39 The last argument for private involvement in space security comes from an approach based on common good and resilience of space assets, emphasized by the Project Ploughshares, as an important part of space security. As of 2017 there are more than 700,000 man-made objects on the Earth’s orbit bigger than 1 cm, while 17,000 of them are bigger than 10 cm.40 Some of them are traced by SSA systems, both American and European, but these systems are public-military owned, and private operators are not granted any access to this data. Any collision of space object with space debris, even with small particles, might result in a chain reaction, called Kessler’s syndrome, and not only private but public, and military assets will be destroyed or impaired. In such conditions, a reluctant cooperation between the public and private sector, and unwillingness to share vulnerable data by public actors seem to confirm that private space activity is more than necessary. This is an apparent case when logic of mistrust between state powers must be overcome by private actors, perhaps by suggesting common preferences for debris mitigation, and space situational awareness. In the case of space debris, Space Data Association, an initiative supported by private sector, with its main aim to enhance data sharing between commercial satellite operators, could be an example of nascent public good provided by private actors for the sake of global security.

#### Space weaponization and arms racing ensure space war goes nuclear – only strong private competition can check conflict

Hitchens ’17 (Theresa Hitchens, Theresa Hitchens is Senior Research Scholar at the Center for International and Security Studies at Maryland, Prior to joining CISSM, Hitchens was the director of the United Nations Institute for Disarmament Research (UNIDIR) in Geneva from 2009 through 2014. Among her activities and accomplishments at UNIDIR, Hitchens served as a consultant to the U.N. Group of Governmental Experts on Transparency and Confidence Building Measures in Outer Space Activities, provided expert advice to the Conference on Disarmament regarding the prevention of an arms race in outer space (PAROS), and launched UNIDIR's annual conference on cyber security, From 2001 to 2008, Hitchens worked at the Center for Defense Information, where she served as Director, and headed the center’s Space Security Project, setting the strategic direction of the center and conducting research on space policy and other international security issues, “Space weapon technology and policy”, School of Public Policy University of Maryland, <https://aip.scitation.org/doi/pdf/10.1063/1.5009221?class=pdf>, November 2017)

Abstract. The military use of space, including in support of nuclear weapons infrastructure, has greatly increased over the past 30 years. In the current era, **rising geopolitical tensions between** the United States and Russia and China **have led to assumptions** in all three major space powers **that warfighting in space now is inevitable, and possible because of rapid technological advancements**. New capabilities for disrupting and destroying satellites include radio-frequency jamming, the use of lasers, maneuverable space objects and more capable direct-ascent anti-satellite weapons. **This situation, however, threatens international security and stability among nuclear powers. There is a continuing and necessary role for diplomacy, especially the establishment of normative rules of behavior, to reduce risks of misperceptions and crisis escalation, including** up to the **use of nuclear weapons**. U**.S. policy and strategy should seek a balance between traditional military approaches to protecting its space assets and diplomatic tools to create a more secure space environment.** I. INTRODUCTION Outer space is recognized by all nations as “the province of mankind” not subject to national boundaries or appropriation via both treaty – especially the 1967 Outer Space Treaty1 – and by the practice of nation states. Since the dawn of the space age, the use of satellites has become integral to the global economy, including providing communications, weather services, mapping, precision timing and navigation services for shipping, secure crossborder banking, and Internet connectivity. Every state has both an interest in making use of space, and reason to deal with its use by other states, because **the activities in space by one actor have the potential to impact all others**, for good or for bad. In addressing international and national security, and nuclear security in particular, the space environment has played a role of great importance from almost the beginning of the nuclear age. The first satellites launched by the Soviet Union and the United States were oriented toward seeking information on what was transpiring in areas controlled by the other, and to verify bilateral arms control agreements. While in short order space systems also were integrated to the offensive uses of long-range delivery systems by providing photographic information about potential targets, strategic space systems were during the Cold War widely viewed as stabilizing the Superpower nuclear competition. The use of space for military purposes has continued into the present era, with increasing capabilities to take advantage of large segments of the electromagnetic spectrum for acquiring intelligence, communicating globally, and generally supporting ways of using nuclear weapons both for deterrence, and, should deterrence fail, use of those weapons against an adversary. Most of the nuclear weapon possessing states operate satellites for these purposes. Perhaps as importantly, space systems over the last two decades have become integral to the tactical warfighting ability of many modern states – a situation that has complicated the status of space systems as strategically stabilizing. Indeed, the growing use of space by many countries to achieve victory on the battlefield has increased both the vulnerability of militaries to attacks on their space systems and has, at the same time, increased their value as potential targets in a war. Over the past 50 years, the Soviet Union, the United States, and China have carried out experiments in or aimed at the outer space environment – mostly the area close to the atmosphere in Low Earth Orbit (LEO) – that show the capability to destroy a satellite, or to disrupt its functions. The specter of space warfare for many years has, among other negative consequences, raised concerns that a state’s nuclear retaliatory capability could be compromised. This concern also applies more generally, of course, to an ability to disrupt communications functions for other military, or civilian, purposes. In the 1980s, there was a period when the United States, and perhaps others, explored whether systems based in space could be used to destroy an adversary’s intercontinental ballistic missiles, or their payloads. The so-called Star Wars program under the Reagan Administration envisioned the deployment of a system of satellites that would seek to destroy the missiles/warheads launched at the United States. One technology explored envisioned detonating a nuclear explosive to generate a beam of x-rays that would put out of commission the adversary’s warhead. Thus far, such technologies have not succeeded in playing a role in the nuclear-weapon situation globally. However, the U.S. descendant of the Star Wars program – currently limited to conventionally equipped, ground- and sea-based missile defense interceptors with limited capability against a full-blown nuclear attack – continues to stress nuclear deterrence and stability between the United States and Russia, as well as China, which maintains a much smaller nuclear arsenal than the Cold War adversaries. However, recent missile experiments by China have demonstrated the vulnerability of the geosynchronous equatorial orbit (GEO), where many hundreds of satellites are “parked” carrying out communications and other functions, including nuclear weapons support systems and spy satellites. II. INCREASED THREATS INVOLVING OUTER SPACE Since the first satellites were launched in the 1950s by the Soviet Union and then the United States, the Russian Federation, the United States, China, India, Japan, and other states have, without much coordination, launched so many satellites into space into various orbits and at various altitudes that there is currently a strong risk of both congestion and competition. There is no global regime for regulating outer space activities. The Outer Space Treaty of 1967, to which all the launching states, and most others, are party2 mandates that outer space be used solely for peaceful purposes, and prohibits the stationing of nuclear or other weapons of mass destruction in that environment. (The Treaty does not prohibit the transit of nuclear weapons, e.g. as a payload on a submarine-launched ballistic missile, through outer space; furthermore under common law practice, defensive military activities are tolerated as compliant with “peaceful purposes.”) The Outer Space Treaty, however, makes it clear that states are responsible for their own space activities, and compliance with international law. And while there are a number of other spacerelated treaties, UN principles and voluntary agreements managed by various UN and multilateral bodies, a nation’s activities in space are largely regulated by that nation alone. There is no international legal requirement for any one state to coordinate its satellite launches or maneuvers with others. Environmental Threats: Crowding and Debris Some 1,500 operational satellites are now in orbit, owned by more than 80 states or other entities. These states and entities have varying levels both of proficiency and of knowledge of the established laws and rules affecting space. In the radio frequency band of the electromagnetic spectrum, interference is rising, especially in the GEO regime. Some of this interference is deliberate, undertaken for political purposes, despite the fact that deliberate interference is one of the few legally binding restraints in the international space arena3 . The evolution in satellite technology has led to the wider use of smaller satellites, including so-called “Cubesats,” that can be deployed in constellations, especially in LEO. The number of operational satellites is expected to rise to many thousands within the decade. LEO, in particular, is becoming incredibly crowded with satellites, making tracking of on-orbit objects extremely difficult. Furthermore, many small satellites have no ability to maneuver to avoid collisions with other satellites and space debris. The half-century of using space has resulted, from the breakup of satellites and other activities, in a considerable amount of on-orbit debris – including satellites no longer in use, parts of satellites that have broken up, launcher stages, nuts and bolts, and debris from the deliberate destruction of satellites. The United States and others track some 23,000 orbiting pieces with a diameter of greater than 10 cm. This debris is especially dangerous if a satellite or transiting vehicle collides with a piece, since the closing velocity of such a collision on-orbit is very high – some 7.5 kilometers per second (faster than a bullet) in LEO. Worse yet, even very small debris, most of which cannot be detected much less tracked, can destroy an operational satellite; it is estimated that some 500,000 to one million pieces of debris smaller than 10 centimeters exist on orbit. **It is widely agreed that new international measures to better coordinate space activities are required to ensure that the space environment is sustained**. In 2007, the United Nations Committee for the Peaceful Uses of Outer Space (COPUOS) in Vienna, Austria, agreed on a set of guidelines for the mitigation of space debris, which are slowly being implemented by many space-faring states. It may be that such measures will eventually require removal of debris from orbit, as the decay of debris from space into the atmosphere where it burns up (or falls on Earth) is a very long-term prospect, taking as much as 25 years in LEO. Sadly, the lifetime of debris in GEO, like diamonds, is practically forever. COPUOS currently is working on a set of recommended best practices to ensure the “long-term sustainability of space.” COPUOS has a 2018 deadline to finish this work; however, there is already discussion of follow-on effort that may include international guidelines for debris removal. Increasing Military Tensions in Space In the geopolitical sphere, compared with the period following the breakup of the Soviet Union, the current decade is witnessing increased tensions between the United States and Russia, and between the United States and China. The geopolitical situation in space has been further eroded by the proliferation of experimentation with and/or deployment of dual-use technologies with “counterspace,” i.e. satellite attack, capabilities. As noted above, China, Russia and the United States all have tested (or in some cases deployed) such technologies in both LEO and GEO. The United States continues to have an advantage in military space capabilities, but its edge is eroding as China and Russia dedicate more resources. Most technologies involved in sustaining systems in orbit are dual-use, but certain specific activities are raising suspicions about potential intended weapons use. The capability to maneuver satellites is particularly relevant. Russia placed a satellite called Luch/Olymp in GEO that maneuvered or drifted over a considerable range, and at several points in 2015 came extremely close to commercial satellites owned by Intelsat.4 Intelsat called the move “irresponsible,” but their request for information from Russia went unanswered. The maneuvers further prompted concern at the U.S. Defense Department about the satellite’s mission, which has not been revealed by Moscow. The United States also has carried out programs in GEO that could have potential weapons capabilities. For example, the PAN, an acronym for Palladium at Night, is a classified program apparently dealing with communications platforms, and perhaps providing other capabilities.5 The Geosynchronous Space Situational Awareness Program (GSSAP) is a U.S. military satellite constellation that also maneuvers in orbit, designed, according to the Pentagon, with the objective of inspecting other satellites orbiting in GEO. Such activities are known as Rendezvous and Proximity Operations (RPO), and have a number of benign applications such as satellite refueling, inspection and repair. Russia is carrying out other such experiments in LEO, as are China, the United States, Japan and Sweden. The commercial applications of maneuvering satellites are also increasing. Among the number of more directly identifiable counterspace technologies now available, the most widespread are ground-based radio-frequency jammers, which can be used to disrupt satellite communications and operations. In addition, there are efforts to develop lasers for disrupting or degrading systems based in space. Russia, China and the United States have also carried out projects involving terrestrially based missiles carrying anti-satellite payloads. The United States as early as the 1980s launched missiles from an F-15 fighter jet with this objective. A 2007 Chinese test, involving the destruction of a non-functional Chinese weather satellite in LEO, released a considerable quantity of debris. The United States subsequently launched a missile from an Aegis cruiser that was advertised to have the objective of destroying a satellite in a decaying orbit, but this did not prevent speculation that the mission also had the objective of demonstrating a similar capability to that of China. Over decades, the U.S. missile defense program has also heavily relied on the space environment, for early warning, for communications, and as a place for engaging and destroying hostile systems. Noted above is the Reagan Administration’s “Star Wars” program, pursued with the idea of creating a “shield” against intercontinental ballistic missiles. **The harder-line rhetoric that has been employed in recent years also has had an inevitable impact of raising tensions**. The United States has pivoted from an approach of “strategic restraint” to one emphasizing “warfighting.”6 In particular, the budgets for providing resiliency in space systems and counterspace capabilities have been increasing. At the same time, Russian accusations that U.S. activities have a hostile objective, and its responses to U.S. representations, have become shriller. Russia has called the anti-ballistic missile system SM-3 2A an anti-satellite weapon, while touting its own objectives for acquiring anti-satellite capabilities. In 2013, China tested a missile, the Dong Ning-2, which appears capable of reaching satellites in GEO. Chinese military space activities lack transparency, but it seems clear that such activities include the objective of being able to exercise counterspace actions. Most troubling, there has been a lack of serious dialogue among these Big Three states. Multilateral Efforts to Reduce Risks For many years, a direct approach to concerns about the potential for weaponizing space (space has been militarized since the dawn of the space age, but so far cannot be said to have been weaponized) has been debated within the United Nations, as well as at the Conference on Disarmament in Geneva. The Russian-Chinese cosponsored initiative, on the Prevention of an Arms Race in Outer Space, has been on the agenda of the Conference on Disarmament since 1985, and under that agenda item Moscow and Beijing have proposed a treaty to ban weapons in space.7 However, the Conference has been all but immobilized by wider disagreements since that time; and the United States remains firmly opposed to the proposed treaty. There have been a number of efforts to set norms of behavior in space in order to guard against misunderstanding and conflict in space. Most recently, the 2013 UN Group of Governmental Experts (GGE) on Transparency and Confidence-Building Measures in Outer Space Activities released a set of recommended initiatives for states to implement, including improved communications about objects in orbit.8 Unfortunately, little work has been done since to implement the recommendations, either at the multilateral level or by individual states. However, the United States, Russia and China have recommended that the UN Disarmament Commission, based in New York, and the deliberative body on arms control issues, take up the question of implementation of the GGE recommendations. While the initial proposal has been received favorably, a decision regarding whether to put the issue on the Commission’s formal agenda will not be made until Fall. III. POLICY QUESTIONS FOR THE UNITED STATES In view of the increased uncertainties affecting the use of outer space, particularly in the area of international security, the United States needs to address several issues with some urgency. First, what is the appropriate mix of resiliency measures to apply in the coming years? A subsidiary question in this regard is what is an appropriate role for commercial providers? And should the U.S. military switch to constellations of small satellites for some national security missions? The budgetary implications of achieving objectives, and establishing appropriate requirements, are important components of pursuing this mix. And there is the inevitable bureaucratic overlap between the Department of Defense and the Intelligence Community. Such “turf” issues require constant attention lest they adversely impact on the fulfillment of national, vice institutional, objectives. Lengthy acquisition programs put systems at risk of becoming obsolescent earlier than they would otherwise become outdated. As part of this latter issue, the United States will need to consider what reforms are needed in the acquisition process, and related organizational arrangements. The integration of Department of Defense and Intelligence Community programs and activities is inevitably a delicate matter; it will require especial focus from the White House, in particular as resiliency is now being embedded into the requirements for acquisition of new systems. A more far reaching issue is how best to strike a balance between the defensive aspects of counterspace and the offensive aspects. And integral to addressing this balance is the impact of U.S. options to respond to hostile space activities on the stability of the strategic/nuclear relationships: U.S.-Russia, U.S.-China, and a large number of other such relationships involving the nuclear-weapon-possessing states. If “arms racing” resumes, or, in the case of India and Pakistan, continues, how will the use of space, specifically for counterspace activities, impact on these races, and vice-versa? Will there be a deterioration in nuclear deterrence? Will an offensive strategy involving the targeting of an adversary’s nuclear-related satellites emerge? These are questions that beg answers in the near-term, as budgetary and policy decisions are being made. **It is also important to consider the role of diplomacy in dealing with international security for outer space.** Diplomacy, in the form of both self-restraint and in reassurance of potential adversaries regarding intentions, has been a part of the tool kit for managing competition in space from the beginning of the space age. Can effective “rules of the road” be further developed? The limited success, but slow pace, of multilateral efforts should not be seen as failure, however. Diplomacy is a difficult business, often characterized by a “one step forward, one step back” dynamic. There is some optimism to be found in the ongoing COPUOS effort, which while a slightly sideways approach, will have positive impacts on international security if successful. While the Disarmament Commission has little power, the advent of discussions there would provide a much needed multilateral forum for addressing the security issues for space given the decades-long impasse at the Conference on Disarmament. Finally, **one should not overlook the value of bilateral diplomacy, particularly among the Big Three space powers. Further work will also be needed to regulate the proliferation of technologies in the commercial sector**. This will likely involve export control, and measures for the management of “traffic” in space (STM). However, care must be given to weigh national security concerns against the needs of commercial industry to thrive in the international marketplace. There is a tendency in the national security community to try to “close the barn door after the horses have escaped” that must not be indulged in the space domain, given the reliance of the national security sector on commercial capabilities and technological innovation. IV. THE NEED FOR A “TIME OUT” To date, no state is deploying dedicated anti-satellite weapons. Testing of capabilities does not a program make. That said, the trend lines are currently negative and require both time and analysis to mitigate. It would be irresponsible for the United States, or any other country, to leap to conclusions about the “inevitability” of all-out war in space. A balanced strategy, which combines resiliency, deterrence, and diplomacy **will be required to** protect national security and **ensure international security**. While development of some anti-satellite capabilities for potential future use may be wise, a run-away space arms race is not desirable for any party. It may be that a viable modus vivendi could be a situation of “implied deterrence:” i.e., the development of dual-use technologies with inherent weapons capabilities in a transparent manner so as to provide the knowledge to others that, if pushed, antisatellite weapons could be deployed. And despite the difficulties to date, **the prospect of the multilateral establishment of norms shows some possibility of promise.** This involves the implementation of recommendations by the Group of Governmental Experts discussed above; of the COPUOS LTS (long-term sustainability) best practices work making progress by 2018; the successful efforts to codify the legal regime that are underway (e.g., those at McGill University in Montreal), and perhaps the UN Disarmament Commission addressing TCBMs in 2018. These efforts must be given a chance to ripen, however much frustration is involved in the processes. It can perhaps be helpful to think of the world as being surrounded on all sides by a large fishbowl, of indefinite dimensions in the outward direction, with the atmosphere at the intersection between “outer” space and the land and waters below. Looked at in this way, human activities in outer space have little room to be confined to a single state: the world as a whole is impacted by those activities. Accordingly, when dealing with outer space, traditional concepts of absolute roles for state sovereignty must inevitably be modified to serve the objectives of global peace, security and stability. Whether this reality will at some point lead to an appreciation that reliance on force, nuclear weapons in particular, cannot play the role in space that it does on the Earth, remains to be seen.

## Case

#### Even though the OST doesn’t bind private entities, governments still already restrict and regulate them to ensure just compliance in the squo

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Two provisions of the Outer Space Treaty (OST), both also customary, are particularly relevant here. OST article II: “Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.” OST article III: “States… shall carry on activities in the exploration and use of outer space, including (…) celestial bodies, in accordance with international law”. SpaceX is a private entity, and is not bound by the Outer Space Treaty – but that does not mean it can opt out. Its actions in space could have consequences for the United States in three ways. First, the US, as SpaceX’s launch state, bears fault-based liability for injury or damage SpaceX’s space objects cause to other states’ persons or property (OST article VII, Liability Convention articles I, III). Second, the US, as SpaceX’s state of registry, is the sole state that retains jurisdiction and control over SpaceX objects (OST article VIII, Registration Convention article II). Both refer to objects in space and are irrelevant. According to article VI OST, States “bear international responsibility for national activities in outer space”, including Mars, including those by “non-governmental entities”. The US, as SpaceX’s state of incorporation, must authorise and continuously supervise SpaceX’s actions in space to ensure compliance with the OST (OST article VI) and international law (OST article III). In practice, this task is done by the US Federal Communications Commission, which licenses and regulates SpaceX. Article VI OST sets a specific rule of attribution, supplementing the customary rules of state responsibility (Stubbe 2017, pp. 85-104). SpaceX acts with US authorisation, and its conduct in space within and beyond that authorisation is attributable to the US (ARSIWA articles 5, 7). In the absence of circumstances precluding wrongfulness, the result is straightforward. If SpaceX breaches a US obligation under international law, the US bears responsibility for an internationally wrongful act.

#### Only asteroid mining can provide us with the research and understanding to prevent extinction

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If knowledge or greed isn’t motivation enough to set your sights on the asteroids, then the one thing virtually all people agree on is that having humanity wiped off the face of Earth would be bad, at least for us. Of all the multiple threats to humanity’s existence, the only one that we can definitely eliminate is that of a large asteroid slamming into our home planet and killing us off, together with most other species, following the lead of the dinosaurs who were made extinct by an asteroid slamming into the ocean. There’s a T-shirt popular among space cadets that has the slogan ‘Asteroids are nature’s way of saying “How’s that space programme coming along?”’ If we can find all the killer asteroids, then we can divert them to render them harmless. Best to play it safe. There are several searches underway for undiscovered, potentially dangerous asteroids. Thanks to the first big survey, Spaceguard, 90 per cent of the dinosaur-killer-sized asteroids out there have already been found. None of them pose any danger for the next century at least. That still leaves an uneasily large number of about 100 extinction-event-sized rocks out there that we haven’t found yet. Smaller, city-killer asteroids are much less well-surveyed for. To remedy this concern, two new surveys will begin in the next few years, and they will both be more or less done by 2030. They are the Vera C Rubin Observatory ‘Legacy Survey of Space and Time’, which will start scanning the whole sky every few nights from 2023 onwards. Its mission has been complicated by the mushrooming constellations of thousands of internet satellites now being launched by several companies, with SpaceX being the most visible. Hopefully a solution will be found. The Vera C Rubin Observatory, on a mountain in Chile, will record its image using normal visible light. For asteroids, that light is reflected sunlight. But many asteroids are pitch black, reflecting only a few percent of the sunlight pouring on to their surfaces. How do you find those dark asteroids? The answer is to use the long wavelength – infrared – light they emit because they’re warm: their ‘black body radiation’. NASA is building a special mission just for this purpose. Developed by a team lead by Amy Mainzer, now of the University of Arizona, Tucson, it’s called the Near-Earth Object Surveillance Mission. Starting around 2025, it will scan the sky repeatedly for five years looking for moving objects that are bright in infrared light, and has wavelengths some 10 to 20 times longer than we can see with our eyes. The team’s tagline is ‘Finding Asteroids Before They Find Us.’ Good idea! This will be the first time that humanity has deliberately changed the orbit of any celestial body An advantage of using the black body radiation is that it also tells us quite accurately how big each asteroid is. That helps in assessing their threat, as well giving us a first guess at how much they might yield in resources. Combining the two surveys will indicate how much sunlight each asteroid reflects – its ‘albedo’ – and that’s a clue to what they’re made of. We want to know that because a metal asteroid of a given size is more dangerous than one made of rock, and is more difficult to push out of the way. The composition also helps us explore all two dozen types of asteroid out there, the better to decipher the history of our solar system. As a side product, the surveys will pin down their potential value. By 2030, we’ll have better rockets than we have today. Several are set to fly within five years. They’ll let us reach many more asteroids with more massive payloads to deflect them, study them or mine them. Also by 2030, several more asteroids will have been visited by our exploration spacecraft. JAXA, the Japanese space agency, and NASA each had recent missions to return samples from carbonaceous asteroids. The Japanese Hayabusa2 went to the spinning-top-shaped asteroid named Ryugu, and NASA’s OSIRIS-REx went to the asteroid called Bennu. Such carbonaceous asteroids are the least changed, we believe, from the time of their formation at the beginning of the solar system’s formation. They are called carbonaceous because they are chockfull of organic (carbon-containing) molecules; many of them also contain quite a lot of water. There are more missions planned to more distant asteroids such as Psyche, a metal asteroid in the Main Belt, and to the Trojan asteroids trailing Jupiter’s orbit. OSIRIS-REx samples and leaves asteroid Bennu. Courtesy of NASA **Every time we visit an asteroid, it surprises us.** Bennu was found to be throwing rocks off its surface as it spun around its axis, and when OSIRIS-REx put down its outstretched arm to grab a sample off the surface, the arm sank half a metre into the asteroid; it stopped going deeper only when the retrorockets fired to stop it. That’s really not how rubble behaves on Earth! The more we know about asteroids, the more confident we can be that we can deflect their path away from Earth. A NASA mission called DART will make a high-speed impact on the small moon of the asteroid Didymos in late 2022 to see if we can slow down a dangerous asteroid to stop it causing devastation on Earth. (Don’t worry: the target was chosen to be a safe one for us.) This will be the first time that humanity has deliberately changed the orbit of any celestial body. It isn’t likely to be the last. Once all the good-sized accessible asteroids have been found, their orbits mapped, their sizes known, and at least a good clue found as to what they’re made of, the barriers to mining them will be much lower. **After visiting a half dozen asteroids up close, we’ll have learned a great deal about their origins, how to deflect them should one be headed our way, and how to handle them.** That will put us in a good place to begin to extract their resources. I predict this will happen right around 2030, when demand for in-space materials should be picking up. **The stars seem to be aligning for mining the asteroids. Mining will expand our capabilities in space, especially making it easier to deflect a dangerous asteroid.** In a virtuous cycle, those new capabilities will lead us on to greater exploration of the many worlds in our solar system and, with bigger, better telescopes, to the Universe beyond. It should be fun.

#### Space treaties get circumvented through domestic legislation and legal ambiguities will be exploited – the Outer Space Treaty proves

Stockwell 20 [Samuel Stockwell. Research Project Manager, the Annenberg Institute at Brown University. “Legal ‘Black Holes’ in Outer Space: The Regulation of Private Space Companies.” E-International Relations. July 20, 2020. <https://www.e-ir.info/2020/07/20/legal-black-holes-in-outer-space-the-regulation-of-private-space-companies/>] HW AL

Envisaging appropriation concerns that might arise from the future extraction of space assets by spacefaring nations, Article II of the UN OST declared that: “Outer space is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means” (UN, 1967). The emphasis on claims of national sovereignty were intimately tied to the Cold War context at the time, where space activities were under the exclusive monopoly of governmental agencies and initiated for goals of military dominance or national prestige (Sachdeva, 2017: 210). However, the privatisation of the space industry that has occurred since the 1980s has meant that the legislation leaves an enormous amount of legal ambiguity and interpretation regarding the regulation of private resource mining in space. As Shaer (2016) demonstrates, the Article II provision fails to address either the exploitation of space for financial gain or the property claims of commercial enterprises (Shaer, 2016: 47). Nevertheless, Article VI of the UN OST asserts that: “States shall be responsible for national space activities whether carried out by governmental or non-governmental entities” (UN, 1967; own emphasis). Some scholars have suggested that this clause significantly restrains the activities of private space corporations by incentivising states to regulate their domestic organisations for fear of liability concerns (Abeyratne, 1998: 168). **However, the US government recently enacted a piece of legislation which exploited this clause, in order to circumvent its own restrictions** and strengthen US economic

#### Despite repeated and consistent discord, relations with Russia are empirically resilient – Syria and most recent evidence prove. Their evidence is unfalsifiable and hyperbolic.

* Peaceful interaction continues – accounts for airstrikes
* Tons of instances where war could’ve started but didn’t
* Syria proves – US/Russia communicating to avoid killing Russian soldiers in airstrikes
* Their ev is unfalsifiable
  + IR is complex, they slant evidence to fit their analytically desired outcome
* Leaders have maintained peace

Crosston, PhD IR @ Brown, ‘18

(Matthew, IR&ComparativePtx@Brown, MA IR@UniveristyOfLondon, SeniorFacultyGlobalSecurity&StrategicIntelligence@AMU, first American invited to do political analysis at the Russian International Affairs Council, https://moderndiplomacy.eu/2018/04/14/no-wwiii-the-odd-logic-of-the-new-fake-cold-war-and-the-curious-reality-of-feather-pillow-proxy-wars/, April 14) BW

There has been an awful lot of noise and blowing wind of late across all forms of social media about an impending WWIII between the United States and Russia, most of which involves further involvement and an intensified escalation within Syria. With the US airstrikes (alongside its allied partners, the UK and France) on Friday night (American time), that crescendo is no doubt going to hit an all-time high of anticipation. To that I offer one small contrary warning: don’t hold your breath for the mushroom clouds just yet. There is still too much evidence of designed respectful interaction between the United States and Russia to even begin to suspect a major physical confrontation directly between the two will take place. And this includes last night’s airstrikes.

While there is no doubt that current relations between America and Russia are not exactly glowing and positive, there are also numerous examples of restraint to show that both sides do not wish to pursue a war with each other. In some cases, the very evidence that has put people all over the world in a frothy orgasm of Cold War bloodlust is actually the evidence people should be noting for why war is unlikely. Consider the following incidents/initiatives that have taken place over the past few years and consider how often any one of them could have resulted in war and other serious military repercussions between adversaries:

* Russia supporting with its own military presence the Crimean secession referendum
* American retaliatory sanctions for said support, resulting in the Russian ruble losing literally half of its value, significantly damaging the earning and consuming power of regular Russians
* Russian retaliatory initiatives for those sanctions, most notably the alleged hacking of the 2016 American Presidential election
* The Magnitskii Act (followed up with still more sanctions just last week), which is basically a form of punishment by hubris: America blacklisting influential friends of Putin (oligarchs) from having access to enter America
* The closing of diplomatic offices in both Russia and America, with further escalation to a tit-for-tat diplomat rejection plan where both countries keep kicking each other’s diplomats out of their respective countries.
* One country accuses the other of overlooking chemical gas attacks against the Syrian people
* One country accuses the other of fabricating chemical gas attacks against the Syrian people
* Rumors of a ‘pee tape’ morally compromising the President of the United States while on an earlier visit to Russia
* Rumors of secretly going after to freeze and/or steal billions of dollars President Putin supposedly has stashed all over the globe
* And, of course, the biggest one of all: both sides intervening in another country’s internal civil war but on opposite sides of the conflict

This is a fairly impressive list of disagreement, discord, conflict, and outright aggression. There have been wars breaking out all over the globe for far fewer incidents and over far less intense accusations and maneuvers. This is why so many today are obsessing over the so-called New Cold War. In fact, the opposite is reality: we should not be welcoming the New Cold War. We should be welcoming the New FAKE Cold War. All of the reasons given above should have been reason enough for kinetic confrontation between the two countries. And yet no direct military conflict has arisen. The United States has now done ‘surprise’ airstrikes in Syria not once but twice. And, “miraculously,” no significant, if at all, formal uniformed Russian military presence has been killed in either of those airstrikes. When the White House goes before the press conference microphones to thank its allies for their cooperation and assistance, the unrecognized reality is that one of those allies is de facto Russia: the two sides have clearly collaborated at least in terms of communication before the airstrikes to ensure that only the proper Syrian military targets are hit and the formal Russian military presence has time to evacuate the direct area. This, of course, is bad news for any and all Syrians: basically, what both countries have been saying throughout the entire civil war is that it is just fine to spill Syrian blood as long as American and Russian blood is not spilled with it. This is the feather pillow of proxy wars. At least when it comes to Americans and Russians. Again, no comment on how much it has been a sledgehammer for both Syrian sides within Syria.

#### Restrictions on space access get circumvented by underground and foreign private institutions— Scenario 2: The Temasek Holding of Shin Corporation on Thailand Jirakindakul & Kovudhikulrungsri ‘10

{Watcharachai Jirajindakul & Lalin Kovudhikulrungsri, 2010, Jirajindakul Graduate School of Law National Institute of Development Administration in Thailand and Graduate School of Law Instructor, Associate Dean for Development and Planning, Lalin Kovudhikulrungsri received the bachelor’s degree in law from Thammasat University, Thailand, the LL.M. degree in air and space law from the Institute of Air and Space Law, McGill University, and the Ph.D. degree in air and space law from the International Institute for Air and Space Law, Leiden University. She is currently an Assistant Professor with the Faculty of Law, Thammasat University. She has published extensively on air and space law and human rights issues in Thai and English publications, “The Legal Loopholes in Space law: The Case of The Legal Loopholes in Space law: The Case of Shin Corporation of Thailand - Temasek Holding Shin Corporation of Thailand - Temasek Holding of Singapore Business Deal of Singapore Business Deal”, //NL}

Currently, there are four function satellites under Thailand’s communication satellite fleet. THAICOM-1A was launched on December 1993 and on October 1994, THAICOM-2 was launched. THAICOM-3, launched in 1997, was replaced by THAICOM-5 on October 2006 due to power loss. THAICOM-4 or IPSTAR, launched on August 2005 is a new generation of broadband satellite that would serve the demand for high-speed broadband Internet access. They cover areas from Central Europe through Asia coasts.40 Figure 2 depicts the shareholding structure of Shin and SATTEL as on January 20, 2006, before the transaction. Shin Corp held shares in SATTEL to the tune of 51.48% which was in compliance with the shareholding ratio condition in the Concession Agreement.41 The major shareholders of Shin securities, at that time, were the Shinawatras and their relatives. Temasek is an Asian investment house owned by the government of Singapore. Its markets are mainly Singapore, Asia and other emerging economies. Amongst this, Thailand can be considered as one of its potential market. However, the name of Temasek became familiar to Thai people after the successful takeover of Shin Corp. Temasek wished to purchase 49.59% of Shin’s shares but the then 39.02% foreign shareholding ratio in Shin made such purchase impossible to succeed without turning Shin into a “foreign juristic person” under Thai domestic law. This would also terminate concessions in Shin’s subsidiaries. Hence the transaction had to be completed through nominees, namely, Cedar Holdings and Aspen Holdings. On January 23, 2006, during the term of Prime Minister Thaksin Shinawatra, Temasek – through its nominees – successfully acquired 49.59 % stake of Shin for an approximate amount of Baht 73,300 million, or Baht 49.25 per share. At that time, Baht 40.0171 equalled to USD 1.42 4 1 FRANCIS LYALL & PAUL B. LARSEN, SPACE LAW: A TREATISE 378 (1st ed. 2009). 4 2 Concession Agreement, supra note 39, § 4.2. The original Concession Agreement mentioned that Shin has to hold at least 51% of the total shares in SATTEL. This **clause was amended to decrease the ratio** from 51% to 40% on October 27, 2004 during the Shinawatra administration. 4 3 Bank of Thailand Foreign Exchange Rate, Figure 3 indicates the structure of the deal and the shareholding structure after January 23, 2006. The 49.59% of shares were divided into 10.97% and 38.62% and purchased by Aspens Holdings and Cedar Holdings respectively. This large portion of share acquisition reached the tender offer trigger point. However, with regard to SATTEL’s stake, Cedar and Aspen were asked by the Securities and Exchange Commission not to make any tender offer for SATTEL’s securities owing to the fact that Cedar and Aspen had no intention to acquire the SATTEL’s securities and that it was considered immaterial to Shin’s assets value.44 **After the Shin-Temasek deal, SATTEL**, one of the Shin’s subsidiaries, operating four communication satellites under the awarded concession **is indirectly controlled by Temasek**, a Singaporean state-owned enterprise even though Shin changed its shareholding ratio in SATTEL from 51% to 41%. B. Thai Domestic Laws on Foreign Investment To stimulate economic growth in developing countries, foreign direct investment is an important factor. On the other side, nationalism still has influence in developing countries, including Thailand, so they wish to reserve their resources and business for their nationals. This controversy leads to the enactment of general and specific legislations on foreign investment i.e. **the Foreign Business Act** B.E. 2542 (1999) (FBA), which **governs the scope and types of permitted or prohibited business for foreigners in general**, and the Telecommunications Business Act, B.E. 2544 (2001), which particularly focuses on telecommunication sector. i. Foreign Business Act B.E. 2542 (1999) of Thailand The Foreign Business Act B.E. 2542 (1999) (FBA) defines a foreigner in Section 4. The scope of this paper focuses only on “foreign juristic person”, which is defined in Section 4 (2) – (4) as follows. “Foreigner” means… (2) Juristic person not registered in Thailand. (3) Juristic person registered in Thailand having the following characteristics: (a) Having half or more of the juristic person’s capital shares held by persons under (1) or (2) or a juristic person having the persons under (1) or (2) investing with a value of half or more of the total capital of the juristic person. (b) Limited partnership or registered ordinary partner-ship having the person under (1) as the managing partner or manager (4) Juristic person registered in Thailand having half or more of its capital shares held by the person under (1), (2) or (3) or a juristic person having the persons under (1), (2) or (3) investing with the value of half or more of its total capital.46 4 6 Supra note 38, art. Subsection (2) is simply understood. Subsections (3)-(4) use the phrase ‘capital share’. As a result, **in order to be considered a foreign juristic person, more than half of such juristic person’s share has to be held by a foreigner**. It does not have to track the shareholding ratio of the shareholder again. This clause solved the problem on the interpretation of the repealed law on foreign investment, the Announcement No. 281 of **the National Executive Council** B.E. 2515 (1972).47 In other words, it **allows foreign firms to set up subsidiaries that are nominally owned by Thais but actually controlled by foreigners.**48 In addition, **the concept of foreign juristic person had been challenged on the basis of voting right structure**. The share ratio of 51-49 can be twisted to form a nominee company by mentioning the 51% shares as a preferred share which has less voting right. The outcome is that the **foreign shareholders can always control majority vote even though they have a lower share ratio.** This practice has been approved by the Thai Ministry of Commerce since 1988.49

#### Private space appropriation will solve extinction – presume neg

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Leah Ginsberg (senior editor covering entrepreneurs, this article is just a summary of a musk interview), June 16 2017, “Elon Musk thinks life on earth will go extinct, and is putting most of his fortune toward colonizing Mars,” CNBC, https://www.cnbc.com/2017/06/16/elon-musk-colonize-mars-before-extinction-event-on-earth.html, // HW AW

If we stay on earth forever, “there will be some eventual extinction event,” says Elon Musk in an article published in academic [journal New Space](http://online.liebertpub.com/doi/full/10.1089/space.2017.29009.emu). In it, Musk says the alternative to this doomsday is for humans to become a multi-planetary species. He says Mars is the place to do it. Venus is a “hot acid bath,” says Musk in the article, which summarizes a speech he gave in Sept. of 2016. Mercury is too close to the sun. The moon is too small, has no atmosphere and not as “resource-rich.” Speaking like the entrepreneur he is, Musk says, Mars is better-suited “to scale up” to be a self-sustaining civilization. ″[I]f we could warm Mars up,” says Musk, which he believes is doable, “we would once again have a thick atmosphere and liquid oceans.” Mars also has enough sunlight and an atmosphere in which, with some tweaking, it would be possible to grow plants. 1:29 SpaceX’s Elon Musk’s bold ambition to colonize Mars Musk also says, “It would be quite fun to be on Mars because you would have gravity that is about 37 percent of that of Earth, so you would be able to lift heavy things and bound around.” The key, says Musk is his company SpaceX creating systems that make the move to Mars affordable – comparable to the median house price in the U.S. is the goal. Currently, Musk estimates trips to Mars would cost about $140,000 per ton (taking into account transporting things like luggage, food and life support). But he believes the cost could potentially drop to below $100,000 a ton. Musk sees a future where people would save up for a move to Mars like they do a home. “People could also get sponsorship. It gets to the point where almost anyone, if they saved up and this was their goal, could buy a ticket and move to Mars — and given that Mars would have a labor shortage for a long time, jobs would not be in short supply,” he says. Ultimately, says Musk, funding this will be a joint effort between private and government resources. “As we show that this is possible and that this dream is real—it is not just a dream, it is something that can be made real—the support will snowball over time,” says Musk. “I should also add that the main reason I am personally accumulating assets is in order to fund this,” says Musk of his wealth. “I really do not have any other motivation for personally accumulating assets except to be able to make the biggest contribution I can to making life multi-planetary.” Just 15 years ago, “SpaceX basically consisted of carpet and a mariachi band,” says Musk. “We were basically clueless.” Now, he believes SpaceX will have a spaceship by about 2020, with which it can start doing suborbital flights. That would also enable the transport of cargo “to anywhere on Earth in 45 minutes at the most,” he says. “Most places on Earth would be 20–25 minutes away. If we had a floating platform off the coast of New York, 20–30 miles out, you could go from New York to Tokyo in 25 minutes and across the Atlantic in 10 minutes,” he says. “If things go super-well, it might be in the 10-year time frame,” to Mars, says Musk. “But I do not want to say that is when it will occur. There is a huge amount of risk. It is going to cost a lot. There is a good chance we will not succeed, but we are going to do our best and try to make as much progress as possible.”