# 1AC --- Moonopolies --- JCCC

## 1AC --- Space --- v1

### 1AC --- Adv --- Space Traffic

#### Advantage one is Space Traffic:

#### The Outer Space Treaty (OST) principles don’t apply to the private sector which allows them to seek a monopolistic status and exploit space resources --- That undermines space traffic management (STM) development

Rhimbassen and Rapp, 21 (Maria Lucas-Rhimbassen and Lucien Rapp, Research Fellow with Open Lunar & PhD Candidate in Space Law at the University of Toulouse and CNES. Member of the IISL and an associate member of the ABA Committee on Space Law., Professor Rapp is one of the French leading experts on international business law and international regulatory matters, with a focus on ICT, Feb 2021, accessed on 9-26-2021, Acta Astronautica, "Competitive space foresight: Incentivizing compliance through antitrust", <https://www.sciencedirect.com/science/article/abs/pii/S0094576521004550)//Babcii>

While higher ethical principles such as **non-discrimination, equal access, and benefit sharing** are enshrined within the magna carta (the Outer Space Treaty (OST) of 1967) [1], of the corpus juris spatialis, it becomes a challenge to ensure the perennialism of such principles given the recent acceleration of **commercialization and privatization of** the **outer space** sector. Given this transitional trend, it is important to delve into new regulatory methods to deal with the private actors contributing to the thriving new space economy and to regulate accordingly. Arguably, global outer space governance is lacking, and space law is facing fragmentation. Consequently, space traffic management (STM), including space situational awareness (SSA), faces the risk of a battle of standards of sorts. In the meantime, **the Kessler effect** [2] urges action since time is ticking. In that regard, it is relevant to look for regulatory alternatives and find a pragmatic and efficient approach for STM governance, since STM implies both a technical and a regulatory aspect. In this paper, we propose that such an alternative approach might be found in antitrust – or competition law, especially **given its power to intervene in the commercial sector**. We also address some of the key arguments in favor or against our proposal and make some recommendations as to how antitrust might provide answers to the STM conversation

#### Legalistic gray zones create regulatory battles --- Only Antitrust can establish rules of the road to prevent future conflicts over STM standards and the Kessler effect

Rhimbassen and Rapp, 21 (Maria Lucas-Rhimbassen and Lucien Rapp, Research Fellow with Open Lunar & PhD Candidate in Space Law at the University of Toulouse and CNES. Member of the IISL and an associate member of the ABA Committee on Space Law., Professor Rapp is one of the French leading experts on international business law and international regulatory matters, with a focus on ICT, Feb 2021, accessed on 9-26-2021, Acta Astronautica, "Competitive space foresight: Incentivizing compliance through antitrust", <https://www.sciencedirect.com/science/article/abs/pii/S0094576521004550)//Babcii>

2. Context

STM is becoming a top priority in the space sector as, so far, **there are no “rules of the road” on orbit**. The lack of regulation and inherent legal void leaves room for either navigating through loopholes or setting customary practices, especially by **the private sector** seeking to protect commercial interests, regardless of **ethics, public policy or international law**. This **might trigger a battle of standards in the realm of STM**, which would rather be unacceptable as there is no place for more than one code of conduct about “rules of the road” and interoperability in that regard is essential. A battle of technical standards, downstream, might be caused, inter alia, by a battle of suppliers and services, upstream. Most strikingly, such upstream battle might be exacerbated by the fact that STM services, including SSA, are engulfed by the digital sector, including artificial intelligence (AI), algorithms (algos), big data, cloud infrastructure, and intellectual property (IP). Since cloud providers are part of the GAFAM world [3] which appeared relatively recently in antitrust hearings [4], and since IP plays a determining role in antitrust, we formulate the hypothesis that **antitrust is a relevant** regulatory **option, when there is no global consensus** in either space law or in STM standards, and when **harmonization efforts need to be set in motion**.

3. The decade-long problem

As mentioned above, there is no global space governance in STM as of this writing. According to a recent report by the Institute for Defense Analysis (IDA), there is a danger that no international STM **regime will be agreed upon within the next decade**:

“Issues related to lack of trust and transparency pose challenges to efforts to develop more binding and formal institutions for STM. For these and other reasons, unless some “wildcards” (an example being a significant collision event in space) come into play, or unless significant political will is exerted, there is likely to be no international agreement on an international STM regime in the next decade” [5].

At the fast pace with which the space exploration is soaring and given the growing number in both space faring nations and private actors, **ten years is a long time and**, therefore, it **increases the risks of fragmentation despite the urgency to act** (e.g., **Kessler effect**). As far as fragmentation concerns the private actors, a recent report by the Chatham House confirms that:

“The rise in private space actors has increased the number of commercial STM providers and, **with plans in the US to move responsibility for STM to civilian control**, there will likely be more opportunities for international collaboration, particularly through the EU Space Surveillance and Tracking (SST) programme” [6].

In an ideal world, such collaborations would indeed solve the issue rapidly. However, the fragmentation does not stop there. International geopolitical differences cause further hurdles, as stated in the same report:

“There are worldwide challenges, both political and technical, to providing STM coverage, which may lead to a lack of collaboration and gaps in understanding of activities in orbit. Existing sensors have limitations in terms of the size of objects that can be detected and the precision with which their movements can be predicted. These capability gaps represent opportunities for the EU to contribute.”

These fragmentation issues might slow down the progress of collaborative efforts such as the recent UN Long Term Sustainability (LTS) guidelines [7], which lays down the foundations of behavioral sustainability in outer space.

4. The imminent need While the digital sphere of influence is skyrocketing and while **regulation struggles to keep up**, it is important to monitor and contain the high-tech industry which is growing out of control and if, “too big to fail”, it might overlap with the sectoral regulation of the aerospace sector. Traditionally, the outer space sector was a sanctuary for states and public actors, hence its reliance on international space law. However, due to the privatization and commercialization of the space sector, diversified non-governmental actors are growing both in size and importance. Moreover, some of these new entities are of a multinational nature. However, this multinationalism is in fact turning into an elusive transnationalism, which is more complex to deal with in legal terms. This adds to the fragmentation of international space law since it faces new challenges. For this reason, global space governance is at an impasse. Therefore, **we propose the alternative of antitrust**

Furthermore, as previously mentioned, the OST focuses **on principles such as non-discrimination, benefit sharing, equality of access and opportunity**. The International Telecommunications Union (ITU) Constitution protects fair competition of telecommunications services through “equitable distribution” [8]. Interestingly, antitrust provides protection to fair competition, more particularly, fair economic competition. The economic term here responds to the newly privatized space sector and market. Antitrust defines what an economic activity is and whether it prevents fair competition within that market. **In our case, that would be space-based services**, more precisely, space-based STM services.

#### Monopolization and Anti-competitive practices are inbound and quick --- That causes collisions and interference --- It also disrupts the ecosystem needed to develop preventative standards

Rhimbassen and Rapp, 21 (Maria Lucas-Rhimbassen and Lucien Rapp, Research Fellow with Open Lunar & PhD Candidate in Space Law at the University of Toulouse and CNES. Member of the IISL and an associate member of the ABA Committee on Space Law., Professor Rapp is one of the French leading experts on international business law and international regulatory matters, with a focus on ICT, Feb 2021, accessed on 9-26-2021, Acta Astronautica, "Competitive space foresight: Incentivizing compliance through antitrust", <https://www.sciencedirect.com/science/article/abs/pii/S0094576521004550)//Babcii>

The main point here is to prevent space monopolies. In terms of cloud infrastructure and AI services, such monopoly, either natural or artificial, might harm STM. Today already, we can witness attempts at **monopolizing orbits by the private sector**, especially in the satellite mega-constellations sub-sector. For example, this can be illustrated by the battle between Project Kuiper mega-constellation vs Starlink. To summarize the facts, Amazon’s Project Kuiper was designed, apparently, to avoid interfering with Starlink. However, when Elon Musk chose to ask permission to the US Federal Communications Commission (FCC) to modify Starlink’s orbital altitude, Amazon tried to prevent this by stating that Kuiper’s design is specifically based on not interfering with Starlink and that any modification of Starlink would be detrimental towards Kuiper in terms of harmful interference and risk of collision:

“The facts are simple. We designed the Kuiper System to avoid interference with Starlink, and now SpaceX wants to change the design of its system. Those changes not only create a more dangerous environment for collisions in space, but they also increase radio interference for customers. Despite what SpaceX posts on Twitter, it is SpaceX’s proposed changes that would hamstring competition among satellite systems. It is clearly in SpaceX’s interest to smother competition in the cradle if they can, but it is certainly not in the public’s interest.” [32].

This illustrates indeed nascent battles in terms of competition (law) and STM and potential toxic competition through accrued contention points. Furthermore, Starlink has formed an alliance with Microsoft’s Azure to directly compete against Amazon’s AWS in space. This leads to thinking that anti-competitive behavior in STM is actually taking place and, according to Amazon, this could lead to STM issues such as **interference and collision**; clearly something that SpaceX denies. Nonetheless, the issue stands, and it raises concern over future STM conflicts and anti-competitive behavior, which is **unsustainable** and has a **negative impact on the healthy development of the space ecosystem**. This paper suggests that competition law provides an equitable solution to avoid such scenario, under the condition that space antitrust be depoliticized, yes, but at the service of an agenda based on higher collective purposes, determined multilaterally.

However, if no one is allowed to take a certain form of lead, **discussions could last at least a decade**, as referred to supra, which is a considerable time for space debris to build up and **endanger orbital activity**. Incentivizing leaders through fair competition, internationally, while ensuring interoperability, has indeed a potential benefit. Interoperability is crucial. The recent NASA’s “minilateral” Artemis Accords value this concept and succeed in gathering an ever-growing number of signatory States (with South Korea to join as a 10th member [33] as of this writing). However, Russia, China and France did not sign. Can the market, then, help bridge the gap and lead by example through bottom-up innovative alternatives? Can fair competition play this role and ensure that the nascent “lex mercatoria spatialis” complies with the “corpus juris spatialis”? Future on-going investigation is required to answer this question, but the analysis presented in this paper determines that the potential of an ethical and “noble” new space antitrust framework to **channel market forces towards sustainability** is far from negligeable.

#### Only regulatory beacons can prevent emerging violations that are impossible to predict

Rhimbassen, 21 (Maria Rhimbassen, Research Fellow with Open Lunar & PhD Candidate in Space Law at the University of Toulouse and CNES, 6-6-2021, accessed on 9-27-2021, Openlunar, "An Introduction to Space Antitrust - Open Lunar Foundation", <https://www.openlunar.org/library/an-introduction-to-space-antitrust#commercial-space-law-context>)//Babcii

Potential Solutions

There are multiple potential legal solutions at the international level, such as amending the OST. However, interestingly, the private sector is not that keen on changing the OST (18). Moreover, **reaching global consensus has proved increasingly more challenging** (19) given the growing number of space faring nations or nations with space capabilities (20), non-traditional space actors (21), the democratization of the space sector (22), and the fragmentation of space law (23). Therefore, for efficient and pragmatic reasons, a solution at the global governance level, such as the United Nations (24), is not necessarily ideal for the near future (25), nor for the commercial sector which prefers to “pick and choose” among the most advantageous jurisdictions following their interests, to the detriment of globalized legal stability (26). Moreover, it is asserted that new elements of the body of law are created behind closed doors, privately, by lawyers and arbitrators, and not publicly, by judges (27). Notably, since the private sector appears lately to be one step ahead of regulators in the emerging space commerce (28), it would **make sense to look at adopting strategies that resonate with the commercial sector** to anticipate the next moves while not just regulating for the sake of it (29). Instead, to secure the perennialism of the higher principles of space law, it would be beneficial to create legal (either hard or soft law) **“beacons” as catalysts for future ethical compliance**, in terms of requirements, incentives and sanctions, and thus help channel the market forces into a sustainable direction in the interest of intergenerational benefit sharing (30). Legal design (31), as elaborated in the discussion section, infra, comes in as a useful tool to mind map a constellation of legal loopholes and contention points to be “transformed” and “activated” into such ethical compliance beacons (32) by co-design at a later stage. Such a visual tool can indeed contribute to determining better strategies and roadmaps down the road.

#### Speed and clarity are key to establish rules of the road and create private control over STM development

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Space activity and space operations are undergoing one of the largest changes since the beginning of the space age.8,9,10 The **substantial increase in commercial space activity**, including participation from around the world, is both **crowding and democratizing space**—pushing the quantity and nature of space operations well beyond the traditionally government dominated activity of the past, and **challenging existing processes**. With the advent of large constellations of hundreds or thousands of satellites, the number of operational satellites may increase by an order of magnitude or more over the next decade. The development of small satellites, including CubeSats, has opened up space to a whole range of organizations that previously would have been unable to afford satellites. These include universities and even high schools. The

democratization of space means that there will be significantly more operators than in the past and many will have relatively little experience in space. This diversity of space operators also includes an expansion of international operators outside of the traditional spacefaring counties adding to the complexity of coordinating space activities, requiring a broader-than-traditional U.S.-centered approach to ensure safe space operations practices are followed.

[Graph Omitted]

New classes of missions are being developed, including on-orbit servicing, mission life extension, and active disposal at end of life, which involve a servicing spacecraft rendezvousing with a customer satellite to provide the requested service. The range of orbits for operational use is also expanding to include elliptical and inclined geostationary orbits, medium Earth orbits, and cislunar space, which have seen only modest use in the past. New modes of operation are also being developed. Along with rendezvousing with other satellites, operators are employing extensive use of low-thrust propulsion and non-propulsive maneuvering techniques like changing satellite orientation to change the effects of atmospheric drag. These new capabilities allow frequent and autonomous station keeping and collision avoidance, but also complicate satellite tracking and maneuver coordination. All of these changes make tracking and maintaining awareness of the space environment more difficult and add to the challenges of safe space operations at a time when the United States’ approach to STM is changing.

Space Surveillance in the Context of STM. The U.S. STM organizational structure is in transition. In 2018, SPD-3 stated that the U.S. Department of Commerce (DOC) would take over the public STM role from the Air Force to allow the Air Force to focus on its primary mission—and having a civil agency lead the nation’s STM efforts might also facilitate international and commercial cooperation. This transition required action from Congress to define and allocate the responsibilities between organizations and provide the associated funding to the DOC.

Although two or more bills have been introduced in Congress to transition STM responsibilities to a civil agency, to date none has been enacted into law. There is still discussion at the congressional level about whether the DOC or another civil agency should take on the U.S. STM responsibilities (in late August, a congressionally mandated independent report from the National Academy of Public Administration endorsed the DOC taking on the STM role).11 The DOC has assigned this role to its Office of Space Commerce but cannot fully execute the needed programs to complete the civil transition until Congress acts. The agency will need to create the required organizational and technical structure to take on the role. **This leaves the United States in an extended transitional period** which is occurring while space activities are rapidly changing. If the space operations changes occur before the nation has clear organizational, technical, **and regulatory structures** in place, implementing an effective STM strategy will be significantly **more complex**.

While there is a growing consensus on the need to transition STM to a civilian agency,12 an inability to legislate the decision on which agency or to resource that agency to execute the mission keeps the mission in the Department of Defense. Moving forward on the assignment of responsibility of and funding for STM is recognized by many space operators **as critical to enable the United States to progress** **in advancing STM capabilities** and safe space operations, **both within the nation and in coordination with international entities.**

#### Lack of STM causes collisions, accidents, and debris --- Incoming flood of private sector satellites increase the risk

**Swinhoe, 21** (Dan Swinhoe, Dan is News Editor at Datacenter Dynamics. Previously he was at IDG in roles including UK Editor at CSO Online and Senior Staff Writer at IDG Connect., 7-2-2021, accessed on 9-30-2021, Datacenterdynamics, "Satellite boom demands better space traffic management", https://www.datacenterdynamics.com/en/analysis/satellite-boom-demands-better-space-traffic-management/)//Babcii

The **space above Earth is getting crowded**. Some 8,500 satellites, probes, landers, crewed spacecraft and the like have been launched into Earth orbit or beyond since Sputnik launched in 1957. More than 3,000 satellites are currently in operation in orbit. But that **number is set to explode.** More than 1,000 satellites have been launched in the last year alone, **the majority** (more than 900) **coming from commercial players**. It’s becoming common to see 100 satellites launched from a single rocket. Within a decade, with tens - if not **hundreds - of thousands of satellites in orbit**, we will see an increase in space debris the **risk of collisions**. Massive fleets of satellites will need to constantly maneuver to avoid not only one another but also potentially damaging **space debris**. That can’t be handled manually on the ground. The satellite industry needs more automation, and greater oversight to collision avoidance instructions. There are thousands of satellites in operation, but there are thousands more defunct satellites, spacecraft and rocket parts, as well as pieces of debris, scrap, and other flotsam and jetsam circling the planet. In 1978, Nasa scientist Donald Kessler predicted a scenario where the space around Earth is so full of satellites and debris that it becomes unmanageable and **collisions begin to cascade**, causing a chain reaction which would render many **orbits out of use** for generations. **Kessler syndrome** is not yet a fact, but the current situation presents a **major risk** for satellite operators. Around 28,200 pieces of space junk and debris are being tracked in orbit, but the European Space Agency (ESA) estimates the actual number is much higher; warning there could be up to 34,000 objects greater than 10cm, 900,000 objects between 1-10cm, and 128 million smaller than 1cm. The total weight of the debris is estimated to be around 5,000 tons. The North American Aerospace Defense Command (NORAD) tracks debris, but only objects larger than 10 cm in diameter. Objects between 1cm and 10cm are known as lethal non-trackable debris (LNT), meaning there could be thousands of invisible pieces of debris that could hit a satellite at any time. Dr. Holger Krag, Head of the Space Safety Programme Office for the European Space Agency says there should be more efforts made to pool debris information, and also glean more accurate information. “I think we can do more globally to join forces to see even more objects. In an ideal world, you can see everything down to one centimeter,” he explains. “And not only see it, but see it with an accuracy that allows you to travel safely. Because the smaller the objects are, the more inaccurate the information is normally, and you are getting many alarms as an operator.” Krag says the ESA is looking at using lasers for debris detection, which could improve the accuracy of debris tracking and measurement. Startups such as LeoLabs are beginning to deploy ground-based phased-array radars. LeoLabs claims it is capable of tracking debris as small as 2cm. While rare, collisions in space do happen, and the results can be catastrophic for the equipment - or potentially people - involved in the accident. Collision will also affect every nearby operator. In February 2009 the Russian military satellite Kosmos-2251 collided with the Iridium 33 communications satellite [also known as a ‘conjunction event’]. Traveling at speeds of 26,000 miles per hour, the two satellites were destroyed, creating a cloud of 1,800 large pieces of space debris, each capable of destroying any spacecraft they hit. Much of the debris remains in orbit today. Since the Iridium-Kosmos incident, operators have monitoring of space debris more closely, and shared potential collision information better - and a number of near-misses have been logged. In April 2021, the EU Space Surveillance and Tracking (EU SST) initiative warned of a possible collision. A defunct US meteorological satellite and a rocket body launched in 1971 by the former Soviet Union to deliver a satellite into orbit came within 21 meters of each other, narrowly avoiding a major collision. In 2020 a Soviet Parus navigation satellite launched in 1989 narrowly missed a Chinese rocket booster launched in 2009. Even the smallest debris can disable operational spacecraft. A fleck of paint was enough to damage a window on the International Space Station (ISS). While the ISS has some shielding to protect it against larger pieces, this isn’t practical or possible for the majority of satellites, requiring them to instead make numerous collision avoidance maneuvers. The ISS has made such avoidance measures 28 times since 1999, including three times in 2020. The moves use fuel, and the ISS has a regular stream of resupply missions. For satellites with finite fuel supplies, regular avoidance measures aren’t sustainable long term. There are various efforts to try and remove space junk and debris from orbit; Astroscale’s Elsa-d satellite, the world’s first commercial mission to demonstrate a space debris removal system, launched in March. But **the best way** to keep space junk to a minimum is to create as little as possible through **proper traffic management** and proper satellite disposal. LEO sat surge add complexity Where once the space above Earth was a relatively quiet country road, today there is a proverbial superhighway of satellites in orbit. The space above Earth is roughly divided into three strata: Low Earth Orbit, which is anything an altitude below 2,000 km (1,200 miles); Middle Earth Orbit between 2,000 km (1,243 mi) and 35,786 km (22,236 miles); and Geostationary Earth Orbit (GEO) at 35,786 kilometers (22,236 miles). Spacing in GEO is tightly controlled; the UN-backed ITU issues a finite number of slots to countries, which then divide them up for military, science, and commercial use. Though very high up, the GEO orbital plane on which satellites stay in sync with the Earth is very narrow, meaning **there is little room for error when it comes to collisions or debris.** In LEO, however, there is very little control. Companies are only limited by what their governments will grant them permission for - and **governments across the world are authorizing huge amounts of new satellites.** There are dozens of startups planning varying numbers of satellite constellations – ranging from small, box-sized CubeSats to fridge-sized machines weighing hundreds of kilos – that could see tens of thousands of satellites launched over the next decade. SpaceX’s Starlink has launched over 1,000 satellites in the last few years to provide high-speed broadband internet connectivity and has permission from the FCC to launch more than 40,000 into LEO. Amazon’s Project Kuiper will see the company invest $10 billion to launch over 3,000 satellites this decade. Though it has scaled back plans since emerging from bankruptcy, the UK’s OneWeb still plans to have almost 650 satellites in orbit by June 2022. A number of Chinese companies are also planning to launch thousands of satellites; Xie Tao, founder of Beijing Commsat Technology Development Co., Ltd, told China Money Network he expects the country to launch 30,000 to 40,000 Satellites in the future, compared to 40,000 to 60,000 launched by the US. Even large incumbents need to act in the face of new competitors, with Telesat planning to launch almost 300 satellites weighing 700 kilos each by 2023 for its Lightspeed broadband constellation. Governments can issue a near-unlimited number of satellite licenses, but a lack of global coordination at a time of rapid proliferation means the skies are becoming increasingly busy. “I think there need to be changes for it to be sustainable,” explains astrophysicist Jonathan McDowell of the Harvard-Smithsonian Center for Astrophysics. “I think that **there needs to be** some **at least US** and hopefully international agreement on what is the carrying capacity of low Earth orbit. Because there's no upper limit, there's no statement that we won't launch more than 200,000 satellites into the lower layer." McDowell says the current launching tens of thousands of satellites might be a ‘landgrab’ to secure as many satellites as possible before regulations change and impose limits. “I think at some point we're going to have to say that you can only have X number of satellites for this altitude band or something like that, and allocate orbital slots in a comparable way to how we allocate orbital slots in GEO.” Though there is more room for flexibility around positioning at LEO, the number of new satellites being introduced there is creating potential headaches both in terms of **space traffic management**. Though large satellites in GEO are robust and, by definition, stationary, even they aren’t capable of withstanding any major impact with large debris or another satellite. LEO sats, which are much smaller and traveling at much faster relative speeds, have almost no chance of surviving an impact with even small pieces of debris, let alone another satellite. NASA’s moon-based LunaNet will be one step towards bringing the Internet to the rest of the solar system In 2019, the European Space Agency's (ESA) Aeolus satellite raised its orbit in order to pass safely over Starlink 44, one of just the first 60 SpaceX satellites launched. The Agency said at the time that was its first-ever collision avoidance manoeuver, but Krag says the ESA's fleet of satellites receives "hundreds" of warnings a day, though most are for debris rather than other satellites. “And we do avoidance maneuvers every two weeks roughly," he says. "That's normal business today.” Nasa recently signed an agreement with Starlink to create increased interaction and partnership between the two companies to “ensure continued safe on-orbit operations” and ensure avoidance of ‘conjunctions’ between the two entities’ satellites and rockets. The agreement will see Nasa provide detailed mission info so Starlink can ensure its automated avoidance measures are up to date, while also working with SpaceX on improving its ability to assess and avoid potential incidents. February saw a Galileo constellation satellite perform a manoeuver in orbit to avoid an Ariane 4 upper stage launched in 1989. The satellite was taken out of service while it made the manoeuver, and returned to service after nearly three weeks. It was the first time one of Europe’s global navigation satellite systems (GNSS) was required to make such a measure. In April of this year, SpaceX and OneWeb satellites had a near miss, coming as close as 190 feet of one another. While large satellites are routinely equipped with propulsion systems, it's only recently that smaller sats in LEO have begun to have their own propulsion – Starlink sats reportedly have ion drive propulsion – meaning many are incapable of making any kind of effort to avoid space debris or other satellites in close orbits. The result can be a regular stream of near misses and minor adjustments for the satellites that can move. In a report filed to the FCC, Amazon explained that if one in 10 of its Kuiper satellites were to fail while in orbit, there would be a 12 percent chance one of them would collide with a piece of space debris. At a failure rate of one in 20 satellites, there would be a six percent chance of a collision. While six percent is high in the conservative realm of space, Kuiper is yet to launch any satellites into space, and could improve to a very low failure rate in a short space of time. SpaceX went from a 13 percent failure rate with its V0.9 prototypes, to a 3 percent failure rate with its first V1 sats, to just 0.2 percent after that. Space traffic management needs an update As the number of players in space increases, the way we manage satellites in orbit needs to change. Tracking potential collisions, notifying impacted parties, and coordinating how they respond is still a largely manual process done over email. Something that is not sustainable as the number of satellites grows. **Lack of adherence to ‘space norms’ could increase risk of in-orbit incidents**

#### Collisions and debris triggers miscalculated war

**Dockrill, 16** (Peter Dockrill, An award-winning science and technology journalist, 1-25-2016, accessed on 9-30-2021, ScienceAlert, "Space Junk Accidents Could Trigger Armed Conflict, Study Finds", https://www.sciencealert.com/space-junk-accidents-could-trigger-armed-conflict-expert-warns)//Babcii

The increasingly crowded space in Earth's low orbit could set the stage for an **international armed conflict**, says a new study.

Researchers from the Russian Academy of Sciences warn that accidents stemming from the steady rise in space junk floating around the planet **could incite political rows** and even warfare, with nations potentially mistaking debris-caused **incidents as the results of intentional aggressive acts by others**.

In a paper published in Acta Astronautica, the team suggests that **space** debris in the form of spent rocket parts and other fragments of hardware hurtling at high speed **pose a "special political danger**" that could dangerously escalate tensions between nations.

According to the study, destructive impacts caused by random space junk **cannot easily be told apart from military attacks**. "The owner of the impacted and destroyed satellite can hardly quickly determine the real cause of the accident," the authors write.

The risks of such an event occurring are compounded by the **sheer volume** of debris now orbiting Earth. Recent figures from NASA indicate that there are more than 500,000 pieces of space junk currently being tracked in orbit, travelling at speeds up to 28,160 km/h (17,500 mph).

The majority of those objects are small – around the size of a marble – but some 20,000 of them are bigger than a softball.

In addition to these 500,000 or so fragments – which are big enough for scientists to know about them – NASA estimates that there are millions of undetectable pieces of debris in orbit that are too small to be monitored.

But even extremely small fragments such as these pose a threat – in fact, they're considered a greater risk than trackable debris, as their invisible status means spacecraft and satellites can't do anything to avoid them until it's too late. As NASA observed in 2013:

"Even tiny paint flecks can damage a spacecraft when travelling at these velocities. In fact a number of space shuttle windows have been replaced because of damage caused by material that was analysed and shown to be paint flecks… With so much orbital debris, there have been surprisingly few disastrous collisions."

While we may **have been lucky** in the past, we can't rely on that to continue. The study by the Russian team cites the **repeated sudden failures of defence satellites** in past decades that were never explained. The researchers attribute two possible causes: either unrecorded collisions with space junk, or aggressive actions from adversaries. "This is **a politically dangerous dilemma,**" the authors write.

#### **MAD breakdown ensures it escalates quickly**

Les Johnson 14. Baen science fiction author, popular science writer, and NASA technologist. “Living without satellites”. <https://www.baen.com/living_without_satellites>.

Satellite imagery is used by the military and our political leaders to maintain the peace. When your potential adversaries can’t hide what they’re doing, where their armies are moving and what they are doing with their civilian and military infrastructure, then the danger of surprise attack is diminished. In our nuclear age with instant death only minutes away by missile attack, the doctrine of Mutual Assured Destruction (MAD) only works if both sides know whether or not they are being attacked. The launch of missiles or a bomber fleet can easily be seen from space far in advance of either reaching their potential targets halfway around the globe. The danger of surprise attack is therefore small, making an accidental war far less likely.

So what does all this mean? And what do we do about it?

First of all, it means that the advocates of space development, exploration and commercialization have succeeded far beyond their initial expectations and dreams. The economies and security of countries in the developed world are now dependent on space satellites. We space advocates should celebrate our success and be terrified of it at the same time. Should we lose these fragile assets in space, our economy would experience a disruption like no other: ship, air and train travel would stop and only restart/operate in a much-reduced capacity for years (GPS loss). Many banking and retail transactions would cease (VSAT loss). Distribution of news and vital national information would be crippled (communications satellite loss). Lives would be put at risk and the productivity of our farming would dramatically decrease (weather satellite loss). The risk of war, including nuclear war, would increase (loss of spy satellites) and our military’s ability to react to crises would be significantly reduced (loss of military logistics and intelligence gathering satellites).

#### Brush-up’s with nuclear spacecraft are inevitable --- That radiates the globe

Yuri **Zaitsev 9**, academic adviser with the Russian Academy of Engineering Sciences, ‘9, “Russia to develop nuclear-powered spacecraft for Mars mission” http://en.rian.ru/analysis/20091111/156797969.html

Soviet and U.S. **nuclear spacecraft** programs were **marred** by a number of accidents. In April 1964, a U.S. Navy Transit navigation satellite with a radio-isotopic generator onboard failed to reach orbit and disintegrated in the atmosphere, spewing out over 950 grams of plutonium-238. This was more than the total amount of plutonium released during all nuclear explosions by 1964. In January 1978, Kosmos-954, a Soviet Radar Ocean Reconnaissance Satellite (RORSAT) with a nuclear reactor onboard reentered the atmosphere, after the satellite's reactor core failed to separate and boost it into a nuclear-safe orbit, and fell in Canada, contaminating 100,000 sq. km. of its territory. In February 1983, the nuclear-powered Soviet satellite Kosmos-1402 went down in the South Atlantic. The most serious threat involved Cassini-Huygens, a joint NASA/European Space Agency/Italian Space Agency robotic spacecraft mission currently studying the planet Saturn and its many natural satellites, that was launched on October 15, 1997 and which made a gravitational-assist flyby of the Earth on August 18, 1999. The spacecraft, which had a nuclear reactor with 32.7 kg of plutonium-238, passed only 500 km above the Earth. Up to five billion people could have got radiation poisoning had the spacecraft plunged into the atmosphere. On February 10, 2009, the Iridium-33 telecommunications satellite owned by U.S. company Iridium Satellite LLC and its defunct Russian equivalent, the Kosmos-2251 with a nuclear propulsion unit, collided over northern Siberia. This resulted in **potentially hazardous space debris**. At present, 30 Russian and **seven** U.S. spacecraft with **nuclear systems onboard are orbiting** the earth at 800-1,100-km altitudes, where **similar collisions can take place**. This makes up for about **40 "potential nuclear explosions**." If any of these satellites hits **a fragment of space junk**, it will slow down and eventually re-enter the atmosphere, **spewing radiation** above the Earth and on its surface.

#### That causes extinction

Margaret Morris 16. Inventor of the GEO-DMF System for robotically building virtually permanent automated solid rock outer space facilities, worked for decades as an assistant to Dr. Joseph Davidovits, the award-winning founder of the chemistry of geopolymerization, worked with the late Dr. Edward J. Zeller, Head of the former NASA-funded Radiation Physics Laboratory, at the Space Technology Center of the University of Kansas. 04-05-16. “Nuclear Waste Pollution is an Existential Risk that Threatens Global Health.” Institute for Ethics and Emerging Technologies. <https://ieet.org/index.php/IEET2/more/morris20160405>

Deadly environmental pollution has become an existential risk that threatens the prospect for the long-term survival of our species and a great many others. Here we will focus on the nuclear waste aspect of the problem and ways to mitigate it before there is a critical tipping point in our global ecosystem.

As philosopher Nick Bostrom said in his 2001 paper titled “Existential Risks,” published in the Journal of Evolution and Technology, “Our future, and whether we will have a future at all, may well be determined by how we deal with these challenges.”1

Unlike many radioactive materials that degrade fairly rapidly, some will remain intensely poisonous for incredibly long periods. Plutonium-240 (Pu-240) has a half-life of 6,560 years. The half-life is the time it takes for radioactive decay to decrease by half. But decay does not occur at an even pace, and radioactive isotopes are dangerous for much longer – typically 10 to 20 times the length of their half-life. Pu-238 has an 88-year half-life, and is used for space vehicles despite the frequency of rocket failures. Any exploding rocket including such cargo spreads pollution far and wide. Pu-239 has a half-life of over 24,000 years, and will remain radioactive for about a half a million years. But the situation is more complicated because as Pu-239 decays it transforms to uranium-235 (U- 235), which has a half life of 600 to 700 million years. Iodine-129 has a half-life of 16 million years. Pu-244 has a half-life of 80.8 million years. U-238 has a half- life of 4.5 billion years.2

When taken into the body, isotopes of radioactive plutonium are not fully eliminated and tend to accumulate. They are deadly when sufficiently accumulated. Pu-239 was described by its co-discoverer, chemist Glenn Seaborg, as “fiendishly toxic.” In addition to terrible chemical toxicity, plutonium emits ionizing radiation. Pu-239 emits alpha, beta and gamma particles. Gamma radiation can penetrate the entire body and kill cells. Pu-239 has a robust resonance energy of 0.2 96 electron-volts that can badly damage DNA and produce birth defects that carry over generations.3 The body repairs tissues and DNA, but becomes overwhelmed when plutonium concentrates too heavily.

According to a 1975 article in New Scientist Magazine, “But if it is inhaled, 10 micrograms of plutonium-239 is likely to cause fatal lung cancer.”4 Experts estimate that Pu-239 is so noxious that only one pound would be enough to kill everyone on our planet if it were so evenly dispersed in the air that everyone inhaled it.5

#### Satellites solve nuclear terror and rogue-state bioweapons.

Gallagher and Steinbruner, Jan 2008 - \*Nancy, Associate Director for Research at the Center for International and Security Studies at Maryland (CISSM) and a Senior Research Scholar at the University of Maryland’s School of Public Policy, B.A. in history from Carleton College and her Ph.D. in political science from the University of Illinois, Champaign-Urbana \*\*John David, Fellow of the American Academy of Arts and Sciences and co-chair of the Committee on International Security Studies of the American Academy, A.B. from Stanford University and his Ph.D. in political science from the Massachusetts Institute of Technology; "Reconsidering the Rules for Space Security," *American Academy of Arts & Sciences*, https://www.amacad.org/publication/reconsidering-rules-space-security/section/14

SPACECOM wants to modernize current capabilities to provide more precise and comprehensive information, faster and more securely, in a manner that is integrated into a single network-centric system-of-systems rather than the current mission-unique, stove-piped approach. In the area of satellite communications, DOD plans include launching a number of Advanced Extremely High Frequency satellites to replenish its current Military Strategic and Tactical Relay (MILSTAR) secure communications satellites with a constellation that can provide more capacity and speed, then replacing that system with the Transformational Satellite Communications System (TSAT), an ultra-large bandwidth secure communications system that would use lasers to rapidly move information to and from friendly forces operating in even the most remote locations.93 To address emerging challenges such as rogue states, terrorists armed with WMD, or other small-scale threats that are difficult to identify and destroy, the Air Force transformation plans include a space radar that can see moving targets even at night or in cloudy weather and a hyperspectral imaging system that can detect chemical, biological, radiological, nuclear, and high explosive materials.94 The National Reconnaissance Office (NRO), which builds and manages spy satellites, also has several ambitious and expensive programs, including efforts to deploy a larger constellation of smaller, lighter satellites with radar and electro-optical imagery capabilities to provide more valuable data**,** on a more frequent schedule, in forms that can easily be integrated with other intelligence information.

#### Nuclear terror causes extinction

Arguello and Buis, 18 – \*Irma, Founder and Chair of the NPSGlobal Foundation (Non-proliferation for Global Security), degree in Phyisics Science from the University of Buenos Aires, Master degree in Business Administration from IDEA/Wharton School, Defense and Security studies (Master level) at the Escuela de Defensa Nacional, Argentina; \*\*Emiliano, lawyer and associate professor of public international law, international humanitarian law, international law of disarmament, and the origins of international law in antiquity (Irma Arguello & Emiliano J. Buis, **“**The global impacts of a terrorist nuclear attack: What would happen? What should we do?,” *Bulletin of the Atomic Scientists*, 2018, https://doi.org/10.1080/00963402.2018.1436812)

But the consequences would go far beyond the effects in the target country, however, and promptly propagate worldwide. Global and national security, economy and finance, international governance and its framework, national political systems, and the behavior of governments and individuals would all be put under severe trial. The severity of the effects at a national level, however, would depend on the countries’ level of development, geopolitical location, and resilience. Global security and regional/national defense schemes would be strongly affected. An increase in global distrust would spark rising tensions among countries and blocs, that could even lead to the brink of nuclear weapons use by states (if, for instance, a sponsor country is identified). The consequences of such a shocking scenario would include a decrease in states’ self-control, an escalation of present conflicts and the emergence of new ones, accompanied by an increase in military unilateralism and military expenditures. Regarding the economic and financial impacts, a severe global economic depression would rise from the attack, likely lasting for years. Its duration would be strongly dependent on the course of the crisis. The main results of such a crisis would include a 2 percent fall of growth in global Gross Domestic Product, and a 4 percent decline of international trade in the two years following the attack (cf. Figure 3). In the case of developing and less-developed countries, the economic impacts would also include a shortage of high-technology products such as medicines, as well as a fall in foreign direct investment and a severe decline of international humanitarian aid toward low-income countries. We expect an increase of unemployment and poverty in all countries. Global poverty would raise about 4 percent after the attack, which implies that at least 30 million more people would be living in extreme poverty, in addition to the current estimated 767 million. In the area of international relations, we would expect a breakdown of key doctrines involving politics, security, and relations among states. These international tensions could lead to a collapse of the nuclear order as we know it today, with a consequent setback of nuclear disarmament and nonproliferation commitments. In other words, the whole system based on the Nuclear Non- Proliferation Treaty would be put under severe trial. After the attack, there would be a reassessment of existing security doctrines, and a deep review of concepts such as nuclear deterrence, no-firstuse, proportionality, and negative security assurances. Finally, the behavior of governments and individuals would also change radically. Internal chaos fueled by the media and social networks would threaten governance at all levels, with greater impact on those countries with weak institutional frameworks. Social turbulence would emerge in most countries, with consequent attempts by governments to impose restrictions on personal freedoms to preserve order – possibly by declaring a state of siege or state of emergency – and legislation would surely become tougher on human rights. There would also be a significant increase in social fragmentation – with a deepening of antagonistic views, mistrust, and intolerance, both within countries and towards others – and a resurgence of large-scale social movements fostered by ideological interests and easily mobilized through social media.

#### Bio-weapons cause extinction

Myhrvold, 13 Nathan, PhD in theoretical and mathematical physics from Princeton + founded Intellectual Ventures after retiring as chief strategist and chief technology officer of Microsoft Corporation, July 2013, "Strategic Terrorism: A Call to Action," The Lawfare Research Paper Series No.2, (<http://www.lawfareblog.com/wp-content/uploads/2013/07/Strategic-Terrorism-Myhrvold-7-3-2013.pdf>)//Babcii

A virus genetically engineered to infect its host quickly, to generate symptoms slowly—say, only after weeks or months—and to spread easily through the air or by casual contact would be vastly more devastating than HIV. It could silently penetrate the population to unleash its deadly effects suddenly. This type of epidemic would be **almost impossible to combat** because most of the infections would occur before the epidemic became obvious. A technologically sophisticated terrorist group **could develop such a virus** and kill a large part of humanity with it. Indeed, terrorists may not have to develop it themselves: some **scientist may do so first and publish the details**. Given the rate at which biologists are making discoveries about viruses and the immune system, at some point in the near future, someone may create artificial pathogens that could drive the human race to extinction. Indeed, a detailed species-elimination plan of this nature was openly proposed in a scientific journal. The ostensible purpose of that particular research was to suggest a way to extirpate the malaria mosquito, but similar techniques could be directed toward humans.16 When I’ve talked to molecular biologists about this method, they are quick to point out that it is slow and easily detectable and **could be fought with biotech remedies**. If you challenge them to come up with improvements to the suggested attack plan, however, they have plenty of ideas. Modern biotechnology will soon be capable, if it is not already, **of bringing about the demise of the human race**— or at least of killing a sufficient number of people to end high-tech civilization and set humanity back 1,000 years or more. That terrorist groups could achieve this level of technological sophistication may seem far-fetched, but keep in mind that **it takes only a handful of individuals** to accomplish these tasks. Never has lethal power of this potency been accessible to so few, so easily. Even more dramatically than nuclear proliferation, modern biological science has frighteningly undermined the correlation between the lethality of a weapon and its cost, a fundamentally stabilizing mechanism throughout history. Access to extremely lethal agents—lethal enough to exterminate Homo sapiens—**will be available to anybody with a solid background in biology**, terrorists included. The 9/11 attacks involved at least four pilots, each of whom had sufficient education to enroll in flight schools and complete several years of training. Bin laden had a degree in civil engineering. Mohammed Atta attended a German university, where he earned a master’s degree in urban planning—not a field he likely chose for its relevance to terrorism. A future set of terrorists could just as **easily be students of molecular biology** who enter their studies innocently enough but later put their skills to homicidal use. Hundreds of universities in Europe and Asia have curricula sufficient to train people in the skills necessary to make a sophisticated biological weapon, and hundreds more in the United States accept students from all over the world. Thus it seems likely that sometime in the near future a small band of terrorists, or even a single misanthropic individual, will **overcome our best defenses** and do something truly terrible, such as fashion a bioweapon that could kill millions or even billions of people. Indeed, the creation of such weapons within the next 20 years **seems to be a virtual certainty**. The repercussions of their use are hard to estimate. One approach is to look at how the scale of destruction they may cause compares with that of other calamities that the human race has faced.

### 1AC --- Adv --- Fragmentation

#### Advantage two is Fragmentation:

#### US apathy towards the OST will imperil international cooperation on space commercialization absent a quick and clear application of the OST to antitrust

Rhimbassen and Rapp, 20 (Maria Lucas Rhimbassen and Lucien Rapp, Research Fellow with Open Lunar & PhD Candidate in Space Law at the University of Toulouse and CNES. Member of the IISL and an associate member of the ABA Committee on Space Law., Professor Rapp is one of the French leading experts on international business law and international regulatory matters, with a focus on ICT, November-10-2020, accessed on 9-27-2021, University of Toulouse, " Versus “Moonopolies” & “Fort McMoonies”: On the Importance of Space Antitrust and Governance Framework for Commercial Activities on the Moon", <https://mva2020.cseo.org.cy/live/presentations/40%20Maria%20Lucas-Rhimbassen%20-%20Versus%20Moonopolies%20&%20Fort%20McMoonies.mp4)//Babcii>  
\*This is a transcript. The video was run through Otter.ai to get a rough transcript, and then I went back through and made it as accurate as possible

So, to better understand our analysis through this competition lowlands, we will discuss about NASA’s unilateralism and the USA’s unilateralism which is probably debatable if not **controversial**, but we can't really do without because at the moment multilaterally at the international level, there is a little bit of **an impasse**. However, this mercantilist dynamism and momentum needs a little bit of **regulation** to ensure space ecosystem **sustainability**. And therefore, we propose a pragmatic solution based on competition law and the competition law framework. As you all know, the space sector is thriving indeed, **due to this aggressive and recent unilateralism**. However, the article six of the Outer Space Treaty **does not compensate enough** for this commercialization. And therefore we have a situation of legal void, **where the private sector** is navigating through these loopholes, generating this at the **international** level situational **fragmentation** due in part to either customary practice or law or to National Space legislations which are potentially conflicting. This is very timely because recently Nokia manifested interest in establishing telecommunications on the moon, which reminds us of the antitrust measures back in the day in the telecommunications sector, which was very beneficial in opening up the market to competition and other actors and lowering prices, and diversification. Furthermore, in the GAFA world, we have these recent antitrust hearings, with the outcome of a potential lawsuit against Google and its monopoly. In with regards to Amazon cloud services, there is a new space policy department this is interesting because they're interested into building the cloud infrastructure in space, as well as with Blue Origin, building space infrastructure might be there might be some monopolistic aspirations behind too. To apply our competition lens let's look for example at the Artemis accords. We have all these principles such as mutual interest, benefits for all humankind, common spirit cooperation, global benefits of space commerce, collective interest etc and compliance with the Outer Space Treaty principles which go even deeper you know, such as equality and nondiscrimination etc. So competition law is very interesting here because it provides with a pragmatic solution, a practical tool, it's a utilitarian solution to help ensure the accomplishment of these principles. Basically, we see that we have already all the necessary ingredients for competition law within the accords, for instance, establishing best practices for governance, or sustainable and beneficial use of space for all humankind. Nations they can **interact contractually with the private sector**. All these are good ingredients for establishing a competition law framework. But because there is a path nonetheless, some issues need clarification, such as entry barriers to assist in our economy based on interoperability, what is interoperability will I turn issues for instance, preclude international competition? So for this, you need more clarification. Now in terms of space resources, what needs more clarification is the term support what do we mean by critical support, which can generate benefit for humankind and sustainable resources utilization, in terms of deconfliction activities? Can due regard be applicable to our fair competition purposes? Do we need an economic based interpretation methodology in this new context of space commercialization. How about harmful interference? Since in this context of trade war, interference can be used for commercial purposes? Therefore, how about anti competitive behavior? Could it be a source of harmful interference? Should we regulate this? Here we address the issues of safety zones. Should we expect a safety zones rush or race on the moon? Or will the moon become a haven for Artemis accords clubs, safety zones, and exclusive practices? What about the others? Therefore, there's a need to define how the Artemis accords signatories committed to complying with the principle of free access as opposed to an exclusive Artemis Club. And this should be needed because for instance, exclusive practices can be translated into interim directives. If we take for example, NASA interim directive on planetary protection, which basically unilaterally divides the moon into two categories. Therefore, multilateral venues need to fast forward a little bit because if not, they might be left out. For instance, **NASA is already promoting lunar samples** commerce **unilaterally outside of the UN**, with specific contractual instructions, procurement prices. And yes, it's benefiting the whole of humankind. But it's a second play. **It's Take it or leave it**, like it or not. This is good for us. Because it promotes open competition. The jackpot, you see, there's a need indeed **to regulate** and to regulate **with a specific space competition law**. And why? Because in space four, we have these principles, these higher ethical principles with which need protection, and therefore you need a specific space competition law framework to protect them. And now is a good timing to regulate to start discussing already, because this **unilateralism** generates **multilateralism** and this artemus club with their own interpretations. So **now is the right timing before it's too late** or before there's not enough room at the table to negotiate and come up with **multilateral approaches**. See, there's already debate at the international level. For instance, the **executive order of the United States** say that space mining should be enabled only by National Space legislation, and that space is not a place for global commons. In contrast, Canada reacted well Canadian scholars reacted and said that **no**, space is a place for global commons. And space mining should only be regulated or enabled through an international regime or a multilateral agreement. And on top of that, these scholars also disagree on what benefits sharing should be. They advocate monetary benefit sharing while on the contrary, the Hague resources group say that no, it doesn't have to include monetary benefits. And so we find ourselves within this international impasse or lex butser is mercato. Aria is based on National Space regulation instead of international regulation, and to bridge the gap. We propose this space antitrust or competition of framework together with governance based on business language. It is our opinion that this could be a relevant solution because it addresses issues of space competition law such as **collusion, anti-competitive behavior, dominance**, etc. And also antitrust issues such as **monopoly**, oligopoly, etc. It helps containing excess while enabling market space market expansion and sustainability and also preventing eventually a fork McMooney situation and history repeating and on that constructive note, I would like to thank you

#### Otherwise, fragmenting space law and divergent interpretations will imperil space commercialization

Rhimbassen, 21 (Maria Rhimbassen, Research Fellow with Open Lunar & PhD Candidate in Space Law at the University of Toulouse and CNES, 6-6-2021, accessed on 9-27-2021, Openlunar, "An Introduction to Space Antitrust - Open Lunar Foundation", <https://www.openlunar.org/library/an-introduction-to-space-antitrust#commercial-space-law-context>)//Babcii

Commercial Space Law Context

Given the context supra, the observed trend is that a growing number of divergent national laws are **fragmenting the main international body of space law** to protect domestic geopolitical and **commercial interests** (7). The legal void contained within international space law gave enough room to States to further regulate the commercial activities of their nationals according to their interests, under the condition that these national legislations comply with the applicable law and the rules of interpretation of international treaties (8). However, it is debated today whether certain legislations are departing from these requirements and, interestingly, there seems to be no right or wrong answer as we simply tread into unknown legal territory (9). To illustrate this point, the example of the non-appropriation principle, enshrined within article II of **the OST**, can be used (10). Conventionally, it is **considered that no State can claim sovereignty over celestial bodies** or their resources. However, nothing is mentioned as to the commercial appropriation of such resources and some States, such as **the United States**, Luxembourg, the United Arab Emirates (11) **chose to grant rights to space resources to their nationals** while there is no consensus at the international level on this issue (12). One of the main obstacles to a consensus is that, besides the non-appropriation principle, **there is no other space property rights regime in place**, nor are there any definitions related to property law which would be useful in that sense. For instance, there is no definition of a “celestial body”, of “movable” or “immovable” goods in space, nor is there any universally adopted legal definition of a “space object” or “space resources” (13). Most interestingly, as the legal debate continues on the legal void at the international level, and while “fragmented” national law creates a heterogenous puzzle of legal loopholes (e.g., assignment, attribution or jurisdiction matters, etc.), **the private sector moves fast enough to seize the opportunity to** create “customary” practice and **make its own rules** (14). This phenomenon can be described as the rise of the “lex mercatoria spatialis” (15) (or commercial space law), which, contrary to the corpus juris spatialis, evolves rather quickly in a “stealthy” fashion and is more elusive given that commercial law is not international, but transnational (16). Transnational law is more flexible and multifaceted, it is therefore harder to grasp. For example, with regards to property rights, what makes its international harmonization inherently trickier is that property law is linked to a national jurisdiction. However, as soon as some property rights are transformed into financial assets, they escape a given jurisdiction and fall under transnational law (17). For this reason, this note addresses property rights in further sections, more precisely through the prism of space resources, finance, and intellectual property rights, while ensuring that, for the benefit of a sustainable space ecosystem, monopolies will be limited to the greatest extent possible. In particular, anti-monopoly law is studied at two levels: the what and the how. The what consists in the value proposition of ethical space commerce, compliant with fair competition principles, and the how consists in the means to ensure that those means do not monopolize the final frontier.

#### Antitrust is the goldilocks solution --- Adopting OST principles into antitrust allows flexible regulation of incoming space conflicts and prevents fragmentation --- That’s key to planetary protection and space equity

Rhimbassen and Rapp, 21 (Maria Lucas Rhimbassen and Lucien Rapp, Research Fellow with Open Lunar & PhD Candidate in Space Law at the University of Toulouse and CNES. Member of the IISL and an associate member of the ABA Committee on Space Law, Professor Rapp is one of the French leading experts on international business law and international regulatory matters, with a focus on ICT, 6-25-2021, accessed on 10-8-2021, Emerald, "New space property age: at the crossroads of space commons, commodities and competition | Emerald Insight", <https://www.emerald.com/insight/content/doi/10.1108/JPPEL-02-2021-0007/full/html>)//Babcii

. Competition law New technologies, globalization and deregulation helped competition law to make its way into the derivatives industry, to compensate for decreasing agency oversight because of a long tradition of jurisprudence in that sense (Weinstein, 2019). The US Commodities Futures Modernization Act (CMFA) of 2000 both deregulated to a certain extent the derivate market while opening the door to antitrust measures (Falvey, 2006) as shown here: ANTITRUST CONSIDERATIONS. – Unless necessary or appropriate to achieve the purposes of this Act: [a] board of trade shall endeavor to avoid – (A) adopting any rules or taking any actions that result in any unreasonable restraints of trade; or (B) imposing any material anticompetitive burden in trading on the contract market. Indeed, increasing competitive market dynamics and commodity exchanges call for antitrust enforcement; however, it remains unclear as to how this will happen and to what degree. Nonetheless, the Commodities Futures Trade Commission (CFTC), created in 1974, provided for some antitrust authority vs anti-competitive conduct via its “antitrust considerations” within the 2010 Dodd-Frank Act [19] as is explained below, to help break collusive behavior and cartelization of the oligopolistic derivatives market in the highly increasing concentrated financial sector [20]: One of Dodd-Frank’s central goals was to ensure that most derivatives transactions are centrally cleared (thereby reducing systemic risk) and traded on exchanges (reducing pricing opacity and promoting competition). The increased significance of derivatives clearinghouses and exchanges in the Dodd-Frank regulatory scheme raises the danger that firms controlling these entities could exclude derivatives-trading rivals who need access to complete their swaps. Such conduct could lead to reduced competition and higher prices in derivatives trading. Big-bank control of clearinghouses and exchanges also may give those firms the opportunity to manipulate the types of derivatives contracts that are exchange traded and centrally cleared, pushing certain contracts into the over-the-counter markets where the banks can charge higher prices. To the extent central clearing of derivatives trades reduces systemic risk (the key premise of Dodd-Frank’s derivatives reforms), this outcome may threaten systemic soundness. Despite these risks, antitrust immunity may **shield such conduct from attack, leaving sector regulators as the only bulwark against anticompetitive activity** in these markets (Weinstein, 2019, p. 6). This **measure proved inefficient**, as it did not cover a major loophole (swap dealers [21]) and its reach was rather **limited**. Therefore, it is argued that **the scope of the antitrust considerations should be broadened** by Congress by amending the 1936 Commodities Exchange Act (CEA) – amended several times since [22] – to “prohibit any person who causes (or attempts to cause) unreasonable restraints of trade or material anticompetitive burdens in the markets for derivatives.” This amendment should also prohibit both in-house and inter-Exchanges anti-competitive and anti-ethical behavior such as unfair competition and derivatives price-fixing conspiracies (Scopino, 2016). Weinstein concludes in that sense: Concentration appears to be increasing in the financial sector and the broader economy. In this context, the Supreme Court’s restrictions on antitrust enforcement in regulated markets are especially concerning. This concern is heightened by evidence that **sector regulators generally are poorly suited to protecting competition and reluctant to take on that job.** This Article has proposed a regulatory-design solution to the challenge of protecting competition in regulated markets. Structural regulation of potential competitive bottlenecks can adequately preserve competition while allowing **sector regulators to focus on their core missions**. When executed properly, this approach may be **superior to active sector-regulator competition enforcement** and even to traditional antitrust enforcement (Weinstein, 2019, p. 59). For this reason, **antitrust has the potential for further regulatory impact** and reach in the commodities sector and we posit that this could be extrapolated to space in a more complex fashion, as space is a peculiarly vast and complex domain, as has been shown throughout this paper. 10. Space antitrust In the light of the previous section, this paper argues that space antitrust could provide for both a pragmatic and efficient manner to contain the volatile forces of a space commodities market, as explained supra. Centralized global space governance is a vast, multi-generational project, presumably in the works and a manifestation of its shapes has yet to appear. In the meantime, however, alternate methods must be investigated. Decentralized models are surfacing from a bottom-up approach and polycentricity is emerging organically. How these polycentric forces will interact, compete, cooperate and evolve can be facilitated by a **“space” antitrust framework based on the OST principles**, which cover interactions relevant to an ethical “space antitrust” and sustainable space ecosystem. These principles, which all have an incidence on competition, are benefit sharing, equality of access, non- discrimination, non-harmful interference, due regard, cooperation and fair competition. Future analysis as to their incidence is necessary to determine their interaction with an antitrust framework and how these interactions are to be governed. Polycentricity is timely given the complexities of systems of systems in space. It could successfully work for hand in hand with space antitrust to ensure that the transnational lex mercatoria and the commoditization of the space market do not collide with the higher ethical principles, which international space law relied on for half a century. 11. Discussion Traditionally, international space law, as opposed to national space law, is not equipped to deal directly with the private sector. However, antitrust has the tools to do so. The broader range of space antitrust might help delve further down into the elusive and transnational commercial law, which is likely to accelerate in the near future and multiply interest around the commodification of the space market. As suggested throughout this paper, **space concentration, leading to monopolies, is a likely outcome** of the further development of space commerce. To mitigate the risks of monopolization, collusive and of other anti-competitive behavior, especially when considering the particular nature of space resources, to be exchanged on the emerging space-based market – including the complex and specialized services attendant thereto – special ethical and legal safeguards must be put in place to incentivize competition while containing the risks of fragmentation mentioned previously. This is important to enable a healthy expansion of the ecosystem. Our emphasis on the market forces at play is rooted in the assumption that through the observation of the current trends of commercialization and of the growing number of non-traditional actors (either public or private) stemming from old and from new space-faring nations, it is easier to anticipate risk and to provide supporting regulatory proposals. Our suggested approach toward an adaptive and polycentric governance model attempts to resolve some of these challenges, by allowing for a bottom-up framework that fosters commercialization, to surface organically, from the players, with minimal outside intervention. Our goal is to prevent the risk of privatization and commercialization that might gradually erode the ethical principles of international space law. To use the analogy of the carrot and the stick in striking a balance between regulatory intervention and free initiative, we prefer the **carrot** approach. Incentivizing the **private sector** to compete around ethically balanced markets has the potential to unlock new and unforeseen forces of antitrust in space to channel the fragmentation of forces in a sustainable manner while ensuring the respect of the conventional set of ethical principles to which many corporations already subscribe to in the context of their corporate compliance programs. Here we would an additional layer of space law higher ethical principles (such as enumerated supra) and investigate into further incentivizing soft law implementations. These higher principles are rooted in system interconnectivity and complexity, and have direct consequences on life, **planetary protection, environmental aspects, intergenerational equity**, etc. In approaching these issues through the angle of antitrust, we argue that **antitrust is bound to evolve and to adapt**, both in Space and on Earth. Furthermore**, a broad space antitrust scope** might also benefit from polycentric governance when concrete self-determination claims would manifest, such as Elon Musk’s self-governing principles on Mars. Any future space colonies (or settlements) would either rely on their own resources or would depend on the import and the export of resources, and therefore, on resource commodification. It then follows that having an ethical space antitrust regime well in place appears as a foreseeable necessity. An ethical space antitrust should also consider non-market factors such as the potential new rights granted to specific resources and regulate accordingly (e.g. the equivalent in space of legal rights to natural resources, etc.). Without such an ethical regime framework harnessing uncoordinated competitive forces, one possible outcome would be the **dystopia** described by Andy Weir’ Artemis economy on the Moon based on “soft landing grams” credits directly applied to one’s consumption of oxygen. A bleak perspective. Finally, antitrust is an adequate response to space property and resources, as property law is, at its basis, domestic law and so is competition law. They can evolve in parallel in the space sector and merge into an **international framework**, adapted to the international space law forum. There is no internationally harmonized antitrust framework as of this writing, except non-binding UN guidelines. Perhaps, a “**space antitrust**” would help bridge that gap and contribute to **reducing growing issues such as “forum shopping,” fragmentation and “conflict of laws.”** 12. Limitations and further research While this paper is at the exploratory level, further research is necessary in determining the scope of antitrust in space, property and commodities and how ethics can play a role specifically, at the implementation level. Case studies should be conducted with a clear methodology. Moreover, the research must include other financial aspects such as spacebased assets and securities, notably the Space Assets Protocol of the UNIDROIT Cape Town Convention. Finally, more work must be done in terms of international/transnational recommendations for antitrust, as there is no internationally harmonized antitrust governance or regime and it remains heavily politicized – or not enough, depending on the school of thought (Teachout, 2020, p. 212). 13. Conclusion This paper explored a roadmap into managing fragmentation triggered by the accelerated development of the outer space ecosystem and the rise in non-traditional space actors, be they public or private. **International space law no longer suffices to cope with all the new actors**, and therefore, transnational alternates are recommended. This paper recommends a transformed antitrust regime, adapted to space, based on the corpus juris spatialis ethics. This could help preventing the risk of space law erosion while privatization and commercialization of space are trending and potentially leading to the commodification of the space market and ecosystem, while space lawyers are still debating internationally as per the principle of non-appropriation and as per what a “space object” should consist of and what property rights could be applicable in space. An interdisciplinary approach could prove very helpful to address this problem. For instance, E. Ostrom’s work on classifying the goods into four categories from an economic standpoint might help space lawyers into classifying space goods once and for all and this could serve as a catalyst for polycentric space governance, governed inter alia, by competing forces. However, these competing forces should rather be seen as the dark matter in a space ecosystem, enabling sustainable synergies and interactions, with intergenerational equity in mind. This would be essential to avoid unregulated speculation based on space commodities, which could prove to be more detrimental in such an extreme environment as space. For instance, speculation benefits from climate change impact on crops and other commodities on Earth. We are all too familiar with the consequences. Imagine what space weather-based speculation could do in space. It could obliterate entire economies at once. One could argue that either space antitrust monitors the space commoditization closely, either space derivatives should be significantly regulated.

#### Cohesive space governance controls responses to every risk.

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We live in “a time of profound transformations to our global context,” stressed Klaus Schwab, Founder and Executive Chairman of the World Economic Forum, during the presentation of the Global Risks Report 2015,4 in Davos, Switzerland. For him, mankind faces the accelerated effects of climate change and the increasing uncertainty about the global geopolitical context. Going further, the Bulletin of the Atomic Scientists Science and Security Board, in a recent analysis, pointed out that “ in 2015, unchecked climate change, global nuclear weapons modernization, and out-sized nuclear weapons arsenals pose extraordinary and undeniable threats to the continued existence of humanity.”5 That led its Doomsday Clock to be advanced by two minutes. Today it marks three minutes to midnight, the moment of the Earth's collapse. There are many other reports and studies alerting to this catastrophe. Such an immeasurable disaster on Earth may affect all space activities, and their legal achievements. While focusing on outer space and space activities, international space law can be considered not only a probable victim of this disaster, but also an important instrument capable of preventing it. The fundamental 1967 Outer Space Treaty,6 as its Preamble points out, is inspired “ by the great prospects opening up for humanity as a result of man’s entry into outer space” and recognizes “ the common interest of all mankind in the progress of exploration and use of outer space for peaceful purposes.” This obviously means that the fate of humanity is in the core of its attention. This paper attempts to demonstrate the ability and the need for international space law to face the critical situation of the Earth in extreme danger, including the legal examination and the use of juridical provisions presented in the recommendations of the main scientific documents already drawn up on this transcendental subject. In conclusion, some viable initiatives in the space law field are proposed as contributions to efforts to provide Earth with new guarantees of survival. I. The Preventive Function of Law The paper’s proposals raise the opportunity and the need to expand the scope and the objectives of international space law, including in it specific space issues of the Earth and of its life expressions. Furthermore, it is timely to underline that “ in today’s world, the preventive function of law is more vital than ever,” as observed Manfred Lachs (1914-1993) about 28 years ago. For him, it would be necessary for men around the world to feel this reality, “ in order to incite them to abandon something of the parish spirit and give them the feeling of the existence of a common interest, and of responsibility in application of law in the everyday life of nations, as well as to make them understand that, as usually is said, it is worth more act wisely together than commit follies separately,” At the same time, as a notable jurist and thinker, Lachs foresaw the dangers that the Earth is currently experiencing: “Today, it is required to work at a time when science and technology have placed in man’s hands weapons capable of creating a danger to life and even cause total destruction; when modern techniques create other dangers threatening the earth, water and air; when economic and political relations between the states require that a new order abolishes abyss between rich and hungry [...]” .7 If the world already was in great danger in the 1980s, what could be the magnitude of danger today? II, Poly-Catastrophe “Dark times [...] are not only not new, they are not a rarity in history,” as Hannah Arendt (1906-1975) observed.8 But today we are certainly living in often darker times. According to the Global Solidarity, Global Responsibility: An Appeal for World Governance - launched in Geneva, Switzerland, on 6 March 2012, and endorsed by the Collegium International members "we are facing a conjunction of global crises that are unprecedented in history: depletion of natural resources, irreversible destruction of biodiversity, disruption of the global financial system, dehumanization of the international economic system, hunger and food shortages, viral pandemics and breakdown of political orders [...] none of these phenomena can be considered independently of the others. All are highly interconnected, constituting a single ‘poly-crisis’ that threatens the world with a ‘poly-catastrophe’ [...]” The Appeal stresses that “ the great crises of the 21st century are planetary,” and that “ this is no butterfly effect, but the realization, grave and strong, that our common home is in danger of collapsing and that our salvation can only be collective.”9 III. Our World Today The new Global Sustainable Development Goals - Transforming our World: the 2030 Agenda for Sustainable Development10 - have been adopted by Heads of State and Government and High Representatives, during the meeting at the United Nations (UN) Headquarters in New York from 25-27 September 2015 - with the UN celebrating its 70th anniversary. Paragraph 14 of this historic document presents the vision of the UN General Assembly (UNGA) on the world global situation today, as follows: “We are meeting at a time of immense challenges to sustainable development. Billions of our citizens continue to live in poverty and are denied a life of dignity. There are rising inequalities within and among countries. There are enormous disparities of opportunity, wealth and power. Gender inequality remains a key challenge. Unemployment, particularly youth unemployment, is a major concern. Global health threats, more frequent and intense natural disasters, spiraling conflict, violent extremism, terrorism and related humanitarian crises and forced displacement of people threaten to reverse much of the development progress made in recent decades. Natural resource depletion and adverse impacts of environmental degradation, including desertification, drought, land degradation, freshwater scarcity and loss of biodiversity, add to and exacerbate the list of challenges which humanity faces. Climate change is one of the greatest challenges of our time and its adverse impacts undermine the ability of all countries to achieve sustainable development. Increases in global temperature, sea level rise, ocean acidification and other climate change impacts are seriously affecting coastal areas and low-lying coastal countries, including many least developed countries and small island developing States. The survival of many societies, and of the biological support systems of the planet, are at risk.” “ Climate change will amplify existing risks and create new risks for natural and human systems. Risks are unevenly distributed and are generally greater for disadvantaged people and communities in countries at all levels of development,” as Intergovernmental Panel on Climate Change (IPCC) says in Climate Change 2014 - Synthesis Report - Summary for Policymakers.11 IV. Care for Our Common Home Pope Francis in his 2015 Encyclical Letter Laudato Si ~ On Care for Our Common Home - issued in 25 May - makes an “ urgent appeal for a new dialogue about how we are shaping the future of our planet.” According to Pope, “we require a new and universal solidarity,” as “ our present situation is in many ways unprecedented in the history of humanity.” “ The Earth, our home,” - he stresses - “ is beginning to look more and more like an immense pile of filth,” because “ each year hundreds of millions of tons of waste are generated, much of it non-biodegradable, highly toxic and radioactive, from homes and businesses, from construction and demolition sites, from clinical, electronic and industrial sources.” Pope Francis also warns: “A very solid scientific consensus indicates that we are presently witnessing a disturbing warming of the climatic system [...} most of global warming in recent decades is due to the great concentration of greenhouse gases (carbon dioxide, methane, nitrogen oxides and others) released mainly as a result of human activity [...] The problem is aggravated by a model of development based on the intensive use of fossil fuels, which is at the heart of the worldwide energy system. Another determining factor has been an increase in changed uses of the soil, principally deforestation for agricultural purposes.” “Warming has effects on the carbon cycle. It creates a vicious circle which aggravates the situation even more, affecting the availability of essential resources like drinking water, energy and agricultural production in warmer regions, and leading to the extinction of part of the planet’s biodiversity. If present trends continue, this century may well witness extraordinary climate change and an unprecedented destruction of ecosystems, with serious consequences for all of us,” as “ climate change is a global problem with grave implications: environmental, social, economic, political and for the distribution of goods.” Moreover, Pope Francis remarks: “We all know that it is not possible to sustain the present level of consumption in developed countries and wealthier sectors of society, where the habit of wasting and discarding has reached unprecedented levels. The exploitation of the planet has already exceeded acceptable limits and we still have not solved the problem of poverty. ” “Caring for ecosystems demands far-sightedness, since no one looking for quick and easy profit is truly interested in their preservation. But the cost of the damage caused by such selfish lack of concern is much greater than the economic benefits to be obtained,” points out Pope Francis, And he adds that “ the alliance between the economy and technology ends up sidelining anything unrelated to its immediate interests.” “The failure of global summits on the environment makes it plain that our politics are subject to technology and finance. There are too many special interests, and economic interests easily end up trumping the common good and manipulating information so that their own plans will not be affected.” “ It is foreseeable that, once certain resources have been depleted, the scene will be set for new wars, albeit under the guise of noble claims. War always does grave harm to the environment and to the cultural riches of peoples, risks which are magnified when one considers nuclear arms and biological weapons [...] Politics must pay greater attention to foreseeing new conflicts and addressing the causes which can lead to them. But powerful financial interests prove most resistant to this effort, and political planning tends to lack breadth of vision.” 52 Wouldn’t these observations also applicable to outer space? V. The Tragedy f Common Goods To explain how we arrived to it at current bad situation of the common resources of Earth, Eduardo Felipe P. Matias recalls the article Tragedy of Common Goods, written in 1968 by American ecologist Garrett Hardin (1915-2003). Hardin recounts the case of a village of shepherds, whose sheep used a pasture in common. Each shepherd was engaged in putting more and more sheep in the pasture in order to increase his income. Over time, the pasture was saturated, and there was no pasture left to feed all the sheep. Most of them died. In sum, a tragedy. The shepherds abused the common good to increase their individual gains, ignoring the limits of nature. Although they gained more in short term, they lost out in long run. Already in 1999, it was recognized that “ a globalized world requires a theory of global public goods to achieve crucial goals such as financial stability, human security or the reduction of environmental pollution.” And that “many of today’s international crises have their roots in a serious under supply of global public goods.” 13 As to global human security as a public good, the 1994 Human Development Report has showed threats to world peace in transborder challenges: unchecked population growth, disparities in economic opportunities, environmental degradation, excessive international migration, narcotics production and trafficking and international terrorism,” It was equally said that the society would be “willing to pay for public goods that serve our common interest, be they shared systems of environmental controls, the destruction of nuclear weapons, the control of transmittable diseases such as malaria and HIV/AIDS, the preservation of ethnic conflicts or the reduction of refugee flows,” 14 Addressing the present question of common goods in his 2015 Encyclical Letter, Pope Francis points out: “Whether believers or not, we are agreed today that the Earth is essentially a shared inheritance, whose fruits are meant to benefit everyone. Hence every ecological approach needs to incorporate a social perspective which takes into account the fundamental rights of the poor and the underprivileged. The principle of the subordination of private property to the universal destination of goods, and thus the right of everyone to their use, is a golden rule of social conduct He also notes that “ the natural environment is a collective good, the patrimony of all humanity and the responsibility of everyone. If we make something our own, it is only to administer it for the good of all. If we do not, we burden our consciences with the weight of having denied the existence of others.” Antonio Cassese (1937-2011) commented that “ the concept of ‘common good’ is not yet felt by the members of the international society. Only state interests and their occasional convergence regulate international relations.” 15 The refugees tragedy in Europe today proves it. VI. Uncertainty According to Klaus Schwab, Executive Chairman of World Economic Forum, “ in the coming decade [...] our lives will be even more intensely shaped by transformative forces that are under way already. The effects of climate change are accelerating and the uncertainty about the global geopolitical context and the effects it will have on international collaboration will remain. At the same time, societies are increasingly under pressure from economic, political and social developments including rising income inequality, but also increasing national sentiment [...] [N]ew technologies, such as the Internet or emerging innovations will not bear fruit if regulatory mechanisms at the international and national levels cannot be agreed upon.” The Global Risks Report 2015, in turn, stresses: “ 2015 differs markedly from the past, with rising technological risks, notably cyber-attacks, and new economic realities, which remind us that geopolitical tensions present themselves in a very different world from before. Information flows instantly around the globe and emerging technologies have boosted the influence of new players and new types of warfare [...] Past warnings of potential environmental catastrophes have begun to be borne out, yet insufficient progress has been made - as reflected in the high concerns about failure of climate-change adaptation and looming water crises in this year’s report.” The Report sees three risk constellations that bear out its findings: “ 1) The interconnections between geopolitics and economics are intensifying because States are making greater use of economic tools, from regional integration and trade treaties to protectionist policies and cross-border investments, to establish relative geopolitical power. This threatens to undermine the logic of global economic cooperation and potentially the entire international rulebased system; 2) The world is in the middle of a major transition from predominantly rural to urban living, with cities growing most rapidly in Asia and Africa. If managed well, this will help to incubate innovation and drive economic growth. However, our ability to address a range of global risks - including climate change, pandemics, social unrest, cyber threats and infrastructure development - will largely be determined by how well cities are governed; and 3) The pace of technological change is faster than ever. Disciplines such as synthetic biology and artificial intelligence are creating new fundamental capabilities, which offer tremendous potential for solving the world’s most pressing problems. At the same time, they present hard-to-foresee risks. Oversight mechanisms need to more effectively balance likely benefits and commercial demands with a deeper consideration of ethical questions and medium to long-term risks - ranging from economic to environmental and societal. Mitigating, preparing for and building resilience against global risks is long and complex, something often recognized in theory but difficult in practice.” How to govern the emerging technologies and uncertainties? VII. The Doomsday Clock It is a symbolic clock face, marking countdown to doomsday. On 19 January 2015, it went on to score 23:57h, three minutes to midnight - the time of global catastrophe able to extinguish the human species inhabiting the Earth for many thousands of years. The decision to advance the clock by two minutes was taken after consultations with more than 20 scientists, including 17 Nobel laureates, among them famous physicists, such as the British Stephen Hawking, the Japanese Masatoshi Koshiba, pioneer in the study of neutrinos, and the American Leon Lederman. The clock has been maintained since 1947 - when the Cold War between the USA and the former USSR began - by the members of the Bulletin of the Atomic Scientists Science and Security Board. In 68 years, this sui generis indicator has been adjusted 22 times. Its worst moment came in 1953, triggered by American and Soviet tests with hydrogen weapons when the Clock scored 23:58h. The Clock was conceived by the celebrated Chicago Atomic Scientists, that had actively participated in the Manhattan Project in the creation of the atomic bombs launched over Hiroshima and Nagasaki, Japan, in August 1945. Haunted with these bombings - that killed more than 100,000 people just on the first day, and many more in the following months - they started to publish a mimeographed warning newsletter and then the Bulletin. The closer they set the Clock to midnight, the closer the scientists believe the world is to a global disaster. The Clock hangs on a wall in a Bulletin's office in the University of Chicago. Originally, it represented an analogy to the threat of global nuclear war. But since 2007 it has also reflected climate change, and new developments in the life sciences and technology that could inflict irrevocable harm to humanity. The analysis of the Bulletin - addressed “to the leaders and citizens of the world” - says in sum: “ In 2015, unchecked climate change, global nuclear weapons modernizations, and out-sized nuclear weapons arsenals pose extraordinary and undeniable threats to the continued existence of humanity.” The group said in a statement: “ [Wjorld leaders have failed to act with the speed or on the scale required to protect citizens from potential catastrophe. These failures of political leadership endanger every person on Earth.” In 2014, with the Doomsday Clock at five minutes to midnight, the members of the Science and Security Board concluded their assessment of the world security situation by writing: “We can manage our technology, or become victims of it. The choice is ours, and the Clock is ticking.”In 2015, with the Clock hand moved forward to three minutes to midnight, the Bulletin feels compelled to add, with a sense of great urgency: “The probability of global catastrophe is very high, and the actions needed to reduce the risks of disaster must be taken very soon.” In face of the dangers affecting today civilization on a global scale, the Bulletin urges the citizens of the world to demand that their leaders, among other measures, "dramatically reduce proposed spending on nuclear weapons modernization programs” , as “ the USA and Russia have hatched plans to essentially rebuild their entire nuclear triads in coming decades, and other countries with nuclear weapons are following suit.” At the start of 2015, nine States - the USA, Russia, the United Kingdom, France, China, India, Pakistan, Israel and Democratic People’s Republic of Korea (North Korea) - possessed about 15,850 nuclear weapons, of which 4,300 were deployed with operational forces. Roughly 1800 of these weapons are kept in a state of high operational alert, according to the Stockholm International Peace Research Institute (SIPRI). Launched on 15 June 2015, the SIPRI Yearbook 2015, which assesses the current state of armament, disarmament and international security, notes as one of its key findings that “ all the nuclear weapon-possessing states are working to develop new nuclear weapon systems and/or upgrade their existing ones.” 16 “There are too many nuclear weapons,” said Sharon Squassoni, an expert in nuclear weapons nonproliferation at the Center for Strategic and International Studies in Washington, USA. And she added: “The existence of these weapons takes a lot of time, effort, and money to keep them safe, and the bureaucracies are poised to keep these systems going indefinitely.” 17 For Hans M Kristensen, director of the Nuclear Information Project at the Federation of American Scientists, “ the projected costs of the nuclear weapons modernization program are indefensible, and they undermine the global disarmament regime.” 18 That is why another demand from Bulletin, addressed to world leaders, is to “ re-energize the disarmament process.” In practice it means that “ the USA and Russia, in particular, need to start negotiations on shrinking their strategic and tactical nuclear arsenals.” The creation of “ institutions specifically assigned to explore and address potentially catastrophic misuses of new technologies,” is also a requirement proposed by the Bulletin. The Bulletin’s appeals are also, to some extent, applicable to outer space, and some of its requirements can be objects of proper regulation by international space law. VIII. Transparency and Confidence The Earth being in danger, the transparency and confidence-building measures (TCBMs) are as vital as those of collective security. These actions are means by which Governments can share information aiming at creating mutual understanding and trust, reducing misconceptions and miscalculations and thereby helping both to prevent military confrontation and to foster regional and global stability. They played an important role during the Cold War, contributing to reducing the risk of armed conflict through mitigating misunderstandings on military actions, particularly in situations where States lacked clear and timely information.19 The need for such measures in outer space activities has increased significantly over the past 20 years, The world’s growing dependence on space-based systems and technologies and the information they provide requires collaborative efforts to address threats to the sustainability and security of outer space activities. TCBMs “ can reduce, or even eliminate, misunderstandings, mistrust and miscalculations with regard to the activities and intentions of States in outer space” , This is the conclusion of the Report of the Group of Governmental Experts on TCBMs in Outer Space Activities - a study adopted by consensus and issued on 29 July 2013.20 The Report adds that “ these measures can augment the safety, sustainability and security of day-to-day space operations and can contribute both to the development of mutual understanding and to the strengthening of friendly relations between States and peoples.” It is acknowledged that “ the existing treaties on outer space contain several TCBMs of a mandatory nature. Non-legally binding measures for outer space activities should complement the existing international legal framework on space activities and should not undermine existing legal obligations or ham per the lawful use of outer space, particularly by emerging space actors.” The Group also discussed other measures, including those of a legally binding nature. The Group further agreed that “ such measures for outer space activities could contribute to, but not act as a substitute for, measures to monitor the implementation of arms limitation and disarmament agreements,” help States to enhance clarity of their peaceful intentions and create conditions for establishing a predictable strategic situation in both the economic and security arenas. Similarly, included in the Report were "coordination and consultative mechanisms aimed at improving interaction between participants in outer space activities and clarifying information and ambiguous situations.” Likewise the Report recommended a coordination between the Office for Disarmament Affairs, the Office for Outer Space Affairs (OOSA) and other appropriate UN entities. Moreover, the Report drafted “ a series of measures for outer space activities, including exchange of information relating to national space policy such as major military expenditure in outer space, notifications of outer space activities aimed at risk reduction, and visits to space launch sites and facilities.” The Group took note of the “Guidelines for appropriate types of confidencebuilding measures and for the implementation of such measures on a global or regional level” , as contained in the “ Study on the application of confidence- building measures in outer space”21 TCBMs for outer space activities are integrated in a broader context. The UN General Assembly endorsed, in its resolution 43/78 H, the guidelines on confidence- building measures adopted by the Disarmament Commission at its 1988 session. This resolution noted that “ confidence-building measures, while neither a substitute nor a precondition for arms limitation and disarmament measures, can be conducive to achieving progress in disarmament” . The Report indicates the following categories of TCBMs for space activities as relevant: “ a) General transparency and confidence-building measures aimed at enhancing the availability of information on the space policy of States involved in outer space activities; b) Information exchange about development programs for new space systems, as well as information about operational space-based systems providing widely used services such as meteorological observations or global positioning, navigation and timing; c) The articulation of a State’s principles and goals relating to their exploration and use of outer space for peaceful purposes; d) Specific information-exchange measures aimed at expanding the availability of information on objects in outer space and their general function, particularly those objects in Earth orbits; e) Measures related to establishing norms of behavior for promoting spaceflight safety such as launch notifications and consultations that aim at avoiding potentially harmful interference, limiting orbital debris and mini mizing the risk of collisions with other space objects; f) International cooperation measures in outer space activities, including measures aimed at promoting capacity-building and disseminating data for sustainable economic and social development, that are consistent with existing international commitments and obligations. In fact, some TCBMs for outer space activities have already been enacted at the multilateral and/or the national level. They include pre-launch notifications, space situational awareness data-sharing, notifications of hazards to spaceflight safety and other significant events, and the publication of national space policies. But they need to be further developed.IX. Common Law of Mankind and Earth More than ever, it is time to think big. International space law is usually defined as dealing with outer space, celestial bodies - Moon and asteroids, Mars and other planets as well as with the space activities which so far are carried out only by the human species from the planet Earth, However, the very specific situation of Earth as celestial body responsible for the creation and development of the international space law is not taken into the due consideration. Earth is not recognized as one of the main objectives of this branch of law. Ironically, in this context, we could say that the international space law takes care of the solar system and the universe as a whole, minus of Earth, although it is the cradle of the exploration and use of outer space in general, and, therefore, of international space law. Let’s take just two examples. “At its broadest, space law comprises all the law that may govern or apply to outer space and activities in and relating to outer space,” write Francis Lyall and Paul B. Larsen.22 In the same sense, the Education Curriculum of Space Law, adopted by United Nations Office For Outer Space Affairs (UNOOSA), on March, 2014, states that “ space law can be described as the body of law applicable to and governing space related activities.”23 Nevertheless, the Outer Space Treaty, of 1967, has, at least, two extremely important norms for the security of Earth and its inhabitants in Articles IV and IX, respectively: 1) “not to place in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction,” and 2) to avoid “harmful contamination and adverse changes in the environment of the Earth resulting from introduction of extraterrestrial matter.” The sky always has played a crucial role in the evolution of mankind and all life manifestations on Earth. However, today the importance of outer space to our planet and its common life has increased as never before. The data coming from satellites are absolutely fundamental for any efforts to assure the sustainability of Earth and all its life expressions. In this global reality it is sheer recklessness to ignore the imperative of protecting our planet and its population, based on inclusive international space legislation. Hence the necessity of a Common Law of Mankind24 and Earth, specially related with international space law. More and more, outer space protection25 must be seen as an indispensable factor to Earth protection, and vice-verse. As the globalization of Earth - with the interdependence of physical, social and political events - is more than ever recognized as an undeniable fact, the universalization of outer space {its cosmic reach), with the interconnection of everything with everything, cannot be bypassed, as it has been in the past. As Ervin Laszlo remarks, “ the reality we call universe is a seamless whole, evolving over eons of cosmic time and producing conditions where life, and then mind and consciousness can emerge.”26 Or, as Edgar Morin says, “we carry inside of us all the cosmos” and “we are all children of the sun.”27 X. It Is up to International Space Law If we are really determined to avoid a likely apocalypse visible on the horizon, one of the main tasks of the international space law that we must trigger is to help save the Earth from space, using the powerful scientific and technological resources we have installed there. Centuries ago Earth ceased to be the center of the universe, as our ancestors thought. But in face of unprecedented global dangers that threaten our planet today, its place cannot be other than the center of our universal concerns. Probably, a collapse of Earth would deprive the universe of a specie of intelligent life. In reality, as Jonathan Schell (1943-2014) pointed out, “ the vision that counts is the view from Earth, from life,” as “ from our strategic position on Earth different view opens, bigger even than the one taken from space. It is the vision of our children and grandchildren, of all future generations of mankind, stretching ahead of us into the future.”28 The question, as posed by Antonio Cassese, is that “ international society is still grounded in the mere juxtaposition of its subjects - not in their solidarity, let alone in their integration.” 29 In any event, “ from the microbes inhabiting the earth beneath our feet to environments of the universe unknown to us now, the next 100 years of ecological discoveries will influence our lives. We enter a time when society is armed with the scientific knowledge and ability to make responsible decisions,” as a recent editorial of Science affirms.30 And with “ a new human consciousness ” , as says Edgar Morin.31 So, “ the choice is our: form a global partnership to care for Earth and one another or risk the destruction of ourselves and the diversity of life,” according to The Earth Charter.32 The current global situation seems to be so serious that the titanic work of saving mankind and our planet can be seen as a kind of utopia, maybe the major utopia of all times. A dream still far from having a general support. Coincidentally we’ll commemorate in 2016 the 500 years since the English humanist and statesman Thomas More (1478-1535) published his Utopia„ considered “ a playfully serious social critique to a social reality deadly and tragically grave.”33 In this context, it is urgent to build a positive agenda for the international space law.

#### OST norms solve nanotech extinction

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This article assesses concerns about the potential development of new weapons and risks of mass destruction made possible by nanotechnology – the rapidly evolving field of atomic and molecular engineering.1 It will argue that such concerns are valid and will need to be addressed by the international arms control and non-proliferation regime. The paper concludes with an appeal for such an engagement to begin sooner rather than later. Weapons of mass destruction (WMD) are already banned from outer space under the terms of the 1967 Outer Space Treaty. Before long, there may be need for an ‘inner space’ treaty to protect the planet from devastation caused – accidentally, or by terrorists, or in open conflict – by artificial atomic and molecular structures capable of destroying environments and life forms from within. The Nanotechnology Revolution Nanotechnology is defined in the Oxford English Dictionary as “the branch of technology that deals with dimensions and tolerances of less than 100 nanometres, esp. the manipulation of individual atoms and molecules.” A nanometre is one billionth (one-thousand millionth) of a metre. Although the potential of atomic engineering on the scale of 1-100 nanometres was foreseen for decades, most famously in a 1959 lecture by the US physicist Richard Feynman,2 serious research was only made possible in the 1980s, primarily through the ability of a new microscope – the scanning tunnelling microscope (STM) – to ‘click’ and ‘drag’ on individual atoms.3 Numerous universities in North America, Europe and Asia quickly established teams to investigate the possibilities of the new research. By January 2000, the US government had become sufficiently impressed with the early results to launch a National Nanotechnology Initiative (NNI)4, with initial funding of $497 million. While other governments are also investing in a range of nanotechnology research5, the US effort is by far the most substantial – and hyped. Launching the programme, President Bill Clinton enthused: “Imagine the possibilities: materials with ten times the strength of steel and only a small fraction of the weight; shrinking all the information housed at the Library of Congress into a device the size of a sugar cube; detecting cancerous tumors when they are only a few cells in size. Some of our research goals may take 20 or more years to achieve, but that is precisely why there is an important role for the federal government.”6 A White House Fact Sheet – entitled ‘National Nanotechnology Initiative: Leading to the Next Industrial Revolution’ – virtually salivated over the prospect of an atomically re-designed world: “The emerging fields of nanoscience and nanoengineering – the ability to manipulate and move matter – are leading to unprecedented understanding and control over the fundamental building blocks of all physical things. These developments are likely to change the way almost everything – from vaccines to computers to automobile tires to objects not yet imagined – is designed and made. … Nanotechnology is the builder’s new frontier and its potential impact is compelling: this Initiative establishes Grand Challenges to fund interdisciplinary research and education teams…that work for major, long-term objectives.”7 The Bush administration’s first NNI budget request, for FY 2002, was for $518.9 million, increased by Congress to $604.4 million. The request for the coming fiscal year is $679 million. The range of US government partners involved reflects the technology’s potential breadth of application.8 The second largest recipient is the Department of Defense, with $180 million of funding dedicated to elaborating a “conceptual template for achieving new levels of warfighting effectiveness” reflecting “the increasingly critical nature of technological advances”.9 None of the funding is currently earmarked specifically for developing new weapons. Studies are, however, already underway (e.g. the research on new types of armour, considered below) and likely to be undertaken to assess the kind of nanotechnological systems which US forces may confront, or equip themselves with, in the future. Such weapons, at least in principle, could include WMD, either in terms of entirely new means of mass destruction, or nanotechnological enhancements to existing WMD. The incentive for an adversary to pursue the military application of atomic engineering – either on a battlefield or on a massively destructive scale – may, ironically, be increased by the evident enthusiasm of the US military for the new possibilities. As with other advanced technologies, the defensive and offensive utility of nanotechnology is hard to distinguish; from an adversary’s point of view, it may even be dangerous to try. Here, for instance, is a recent news story on ‘nanoarmour’ for US troops: “The Massachusetts Institute of Technology plans to create military uniforms that can block out biological weapons and even heal their wearers as part of a five-year contract to develop nanotechnology applications for soldiers, the US Army announced… MIT won the $50 million contract to create an Institute for Soldier Nanotechnologies, or ISN. The ISN will be staffed by around 150 people, including 35 MIT professors… The unique lightweight materials that can be composed using nanotechnology will possess revolutionary qualities that MIT says will help it make a molecular ‘exoskeleton’ for soldiers. The ISN plans to research ideas for a soft – and almost invisible – clothing that can solidify into a medical cast when a soldier is injured or a ‘forearm karate glove’ for combat, MIT said. Researchers also hope to develop a kind of molecular chain mail that can deflect bullets. In addition to protecting soldiers, these radically different materials will have uses in offensive tactics, at least psychologically. ‘Imagine the psychological impact upon a foe when encountering squads of seemingly invincible warriors protected by armour and endowed with superhuman capabilities, such as the ability to leap over 20-foot walls,’ ISN director Ned Thomas said in a release.”10 Imagine, one might add, the psychological impact on people around the world, first of realising that such a dramatic extension of militarisation into the nanosphere is beginning, then of wondering where such a process might end. Why stop at armour, short of new weapons – and, if it does lead to new weapons, what on earth will they be? Fact and Fiction Nanotechnology has become firmly established as a subject of popular interest, largely through visions of a ‘return to Eden’, and even an escape from mortality, offered in countless science fiction novels, films and television series, and a number of best-selling science books, prominent among them Engines of Creation by K. Eric Drexler and The Age of Spiritual Machines by Ray Kurzweil. Such works are generally derided by professional nanotechnologists, keen to caution against inflated expectations and thus possible disillusionment on the part of governments, funders and industry. Even the vision of nanotechnology purveyed by such professionals, however, is replete with expressions of confidence in its long-term capacity to transform the modern world – for the better, of course. In September 2001 – a month synonymous with the destructive misuse of modern technology – Scientific American published a special issue on progress and prospects in the new ‘science of the small’. The issue, featuring articles from prominent nanotechnology advocates and practitioners, differing only in the intensity of their enthusiasm, outlines developments in four main areas of research: computer circuitry11, new construction ‘supermaterials’12, medical diagnostic and therapeutic applications13, and ‘nanorobotics’14. All these areas overlap, just as nanotechnology itself merges with two other ‘frontier’ disciplines, genetic engineering and robotics. More grandly, nanotechnology is viewed as a potentially significant step toward the ‘unification’ – at least in terms of a central research and development agenda – of physics, chemistry and biology. As the introduction to the special issue of Scientific American, entitled ‘Megabucks for Nanotech’, noted: “Because the development of tools and techniques for characterising and building nanostructures may have far-reaching applicability across all sciences, nanotechnology could serve as a rallying point for physicists, chemists and biologists.” But does this allure mean scientists are more or less likely to be wary of the potential for harm their work may entail? What ‘far-reaching applicability’ could ‘nanostructures’ have for repressive governments, high-tech militaries, or terrorist organisations? The dark side of nanoscale engineering has long been acknowledged outside the laboratory, both in works of science fiction and by prominent evangelists for the new faith, some of whom (see below) have suggested safeguards and protections. The extent or even existence of the threat, however, has been largely ignored or discounted in the official decisions and statements of governments, funders, industry and academe. This in turn adds to the difficulty of seeking to persuade the overstretched and under-resourced arms control diplomatic community to begin to consider its possible interest in the subject. In the wake of September 11, however, a serious reappraisal of official attitudes toward nanotechnology is urgently required. The assumption, perhaps held most deeply in the US, is that nanotechnology can and should be enlisted in the campaign against terrorism, and that the risk of misuse is far outweighed by the likely gains. But to what extent is this more than an assumption? Nanotechnology and Mass Destruction: an Overview of the Current Debate Processes of self-replication, self-repair and self-assembly are an important goal of mainstream nanotechnological research. Either accidentally or by design, precisely such processes could act to rapidly and drastically alter environments, structures and living beings from within. In extremis, such alteration could develop into a ‘doomsday scenario’, the nanotechnological equivalent of a nuclear chain-reaction – an uncontrollable, exponential, self-replicating proliferation of ‘nanodevices’ chewing up the atmosphere, poisoning the oceans, etc. While accidental mass-destruction, even global destruction, is generally regarded as unlikely -equivalent to fears that a nuclear explosion could ignite the atmosphere, a prospect seriously investigated during the Manhattan Project – a deliberately malicious programming of nanosystems, with devastating results, seems hard to rule out. As Ray Kurzweil points out, if the potential for atomic self-replication is a pipedream, so is nanotechnology, but if the potential is real, so is the risk: “Without self-replication, nanotechnology is neither practical nor economically feasible. And therein lies the rub. What happens if a little software problem (inadvertent or otherwise) fails to halt the self-replication? We may have more nanobots than we want. They could eat up everything in sight. … I believe that it will be possible to engineer self-replicating nanobots in such a way that an inadvertent, undesired population explosion would be unlikely. … But the bigger danger is the intentional hostile use of nanotechnology. Once the basic technology is available, it would not be difficult to adapt it as an instrument of war or terrorism. … Nuclear weapons, for all their destructive potential, are at least relatively local in their effects. The self-replicating nature of nanotechnology makes it a far greater danger.”15 Assuming replication will prove feasible, K. Eric Drexler also assumes the worst is possible: “Replicators can be more potent than nuclear weapons: to devastate Earth with bombs would require masses of exotic hardware and rare isotopes, but to destroy life with replicators would require only a single speck made of ordinary elements. Replicators give nuclear war some company as a potential cause of extinction, giving a broader context to extinction as a moral concern.”16 There are, of course, multiple levels of concern below that of a final apocalypse. Use and abuse are, unavoidably, the twins born of controlled replication. Nanosystems proliferating in a precisely controlled and pre-programmed manner to destroy cancerous cells, or deliver medicines, or repair contaminated environments, can also be ‘set’ to destroy, poison and pollute.17 The chain reactions involved in thermonuclear explosions are precise and controlled, as much or more than the dosages in chemotherapy treatment. In the science of atomic engineering, the very technologies deployed to allay concerns of apocalyptic malfunction loom as the likely source of functional mass destruction. Notwithstanding their vividly expressed concerns, both Kurzweil and Drexler portray the risk of mass- or global-destruction as a containable, preventable problem – provided nanotechnology is pursued as vigorously as possible in order to understand the real risks. In April 2000, however, an article in Wired magazine by Bill Joy, a leading computer scientist and co-founder of Sun Microsystems, painted a far bleaker picture: “Accustomed to living with almost routine scientific breakthroughs, we have yet to come to terms with the fact that the most compelling 21st-century technologies – robotics, genetic engineering, and nanotechnology – pose a different threat than the technologies that have come before. … What was different in the 20th Century? Certainly, the technologies underlying the weapons of mass destruction – nuclear, biological, and chemical – were powerful, and the weapons an enormous threat. But building nuclear weapons required, at least for a time, access to both rare…raw materials and highly protected information; biological and chemical weapons programs also tended to require large-scale activities. The 21st century technologies…are so powerful that they can spawn whole new classes of accidents and abuses. Most dangerously, for the first time, these accidents and abuses are widely within the reach of individuals or small groups. … Thus we have the possibility not just of weapons of mass destruction but of knowledge-enabled mass destruction (KMD), this destructiveness hugely amplified by the power of self-replication.”18 Joy identifies and addresses two key issues: if the danger is so great, 1) why hasn’t the warning been adequately sounded before now, and 2) what can be done to avoid the abyss? His answer to the first question19 is shocking and, given his own commercial success, confessional: “In truth, we have had in hand for years clear warnings of the dangers inherent in widespread knowledge of GNR [genetics, nanotechnology and robotics] technologies – of the possibility of knowledge alone enabling mass destruction. But these warnings haven’t been widely publicized; the public discussions have been clearly inadequate. There is no profit in publicizing the dangers. … In this age of triumphant commercialism, technology…is delivering a series of almost magical inventions that are the most phenomenally lucrative ever seen. We are aggressively pursuing the promises of these new technologies within the now-unchallenged system of global capitalism and its manifold financial incentives and competitive pressures.” In seeking ways back from the brink, Joy’s starting point is the folly of distinguishing between military and non-military – or, more broadly, ‘good’ and ‘bad’ – nanotechnology. There is, of course, a distinction between malicious and benign intent, but the difference does not affect the inherently dangerous and/or uncontrollable nature of atomic fabrication and engineering. In view of the vast promise, both financial and scientific, involved, the tendency is to seek a technological fix, a nanotechnological equivalent to a missile defence system, to ward off any demons the same technology may conjure up. In dismissing this option, Joy draws the only remaining conclusion available: “In Engines of Creation, Eric Drexler proposed that we build an active nanotechnological shield – a form of immune system for the biosphere – to defend against dangerous replicators of all kinds that might escape from laboratories or otherwise be maliciously created. But the shield he proposed would itself be extremely dangerous – nothing could prevent it from developing autoimmune problems and attacking the biosphere itself. Similar difficulties apply to the construction of shields against robotics and genetic engineering. These technologies are too powerful to be shielded against in the time frame of interest; even if it were possible to implement defensive shields, the side effects of their development would be at least as dangerous as the technologies we are trying to protect against. These possibilities are all thus either undesirable or unachievable or both. The only realistic alternative I see is relinquishment: to limit development of the technologies that are too dangerous, by limiting our pursuit of certain kinds of knowledge.” As he doubtless expected, Joy’s article was widely portrayed by nanotechnology enthusiasts and practitioners as Luddite exaggeration bordering on unmanly hysteria. Gary Stix, special projects editor at Scientific American, noted scornfully that “the danger comes when intelligent people” take “predictions” of nanotechnological catastrophe “at face value”. A “morose Bill Joy”, Stix wrote, had “worried…about the implications of nanorobots that could multiply uncontrollably. A spreading mass of self-replicating robots – what Drexler has labelled ‘gray goo’ – could pose enough of a threat to society, he mused, that we should consider stopping development of nanotechnology. But that suggestion diverts attention from the real nano goo: chemical and biological weapons.”20 This parodies Joy’s article, however, which considers a range of negative consequences potentially flowing from the basic fact of the nanotechnology revolution, namely that the “replicating and evolving processes that have been confined to the natural world are about to become realms of human endeavour”.21 That we may not be eaten by ‘gray goo’ does not mean we should ignore other dire prospects. As for the ‘real nano goo’, Joy sees in nanotechnology the potential to dramatically enhance the mass-destructive capacity of chemical and, particularly, biological weapons, in a manner akin perhaps to the qualitative leap from atomic to thermonuclear weapons. It is precisely in the CBW area that nanotechnology is likely to pose its first major arms control challenge. The analogy with the development of thermonuclear weapons is also instructive in the context of the possible abandonment of a field of scientific work – however uncharted and challenging the territory – on moral grounds, or out of fear of the total destruction which may follow. In 1949, the scientific General Advisory Committee (GAC) of the US Atomic Energy Commission (AEC) drew up a report on the possible development of hydrogen bombs by the United States military. The general report, adopted by eight physicists including the scientific director of the Manhattan Project, Robert Oppenheimer, stumbled on the verge of recommending that the attempt not be made: “It is clear that the use of this weapon would bring about the destruction of innumerable human lives… Its use…carries much further than the atomic bomb itself the policy of exterminating civilian populations. … We all hope that by one means or another, the development of these weapons can be avoided.” A supporting document, however, submitted by I.I. Rabi and Enrico Fermi, took the final step. The destructive capacity of the hydrogen bomb, they argued, “makes its very existence and the knowledge of its construction a danger to humanity as a whole. It is necessarily an evil thing considered in any light.”22 So, for Joy, is nanotechnology. For most scientists, however, the case is rather that of physicists in the 1930s, aware but sceptical of the prospect of the large-scale release of energy from the atomic nucleus23, but almost without exception committed to exploring the exciting new world, and professional opportunities, opened up by quantum mechanics.24Even after the discovery of fission in 1938, many prominent physicists, including Niels Bohr25, were extremely dubious that a practical, deliverable weapon could be built. The thing to do was to press on, work hard to make sure of the facts, and hope the bomb would prove impossible. Part of the motivation for pressing on, of course, was fear of Hitler getting the bomb first. But, assuming the risks of nanotechnological mass destruction became more widely accepted, what would the comparable fear be today? Pre-eminently, terrorism. Terrorists, however, can only hope to acquire new means of mass destruction in the same way they pursue nuclear, chemical and biological WMD – by pilfering and diverting from a highly-developed knowledge-base and infrastructure. In Joy’s view, precisely such a ‘gift’ is presently being assembled and wrapped, generously funded and uncritically supported, and in the almost complete absence of mainstream political or wider democratic scrutiny or participation. ‘We’ are sowing the wind we all may reap. Options for an Inner Space Treaty There are two basic options for designing a possible arms control approach to the mass-destructive potential of nanotechnology. Both, of course, will be stillborn in the absence of a recognition by government, business and science – the ‘strategic triad’ of contemporary decision-making – that serious dangers exist. Such initial pressure for action cannot realistically be expected to come from within the structurally reactive and reflective arms control diplomatic community. Let us assume, however, that growing public concern and increasingly troubling scientific results combine to push the issue onto a future agenda. We are immediately confronted with a decisive choice, so familiar to followers of myriad disarmament and non-proliferation discussions: what is our goal, abolition or regulation? Is the fundamental danger what ‘others’ might do with ‘our’ technology, or is the real problem the technology itself? It is possible to construct an arms control regime based on the logic of either conclusion; but it is not possible to merge both approaches. Given the huge investment now flowing into nanotechnology, allied to the vast practical and financial gains on offer and the correspondingly large numbers of scientists likely to be employed in the new field, the probability is that a regime of control and restraint will acquire a compelling logic, banishing the ‘chimera’ of abolition to the shadows. If so, a rough transposition of the Outer Space Treaty – allowing only for obvious changes of reference and context – could quickly yield the broad brush parameters of an Inner Space Treaty seeking to ensure the peaceful exploitation, rather than the non-exploitation, of the nanosphere. (See the Appendix – ‘Version A: Treaty on Principles Governing the Nanotechnological Activities of States in Inner (Atomic and Molecular) Space’ – for a tentative sketch of an accord along these basic lines.) Such a treaty would mark a giant political leap forward from today’s effectively unregulated mass of governmental, academic and commercial projects. The critical issue would then become one of effective practical implementation. How, for example, could the nature, scope, intention and possible application of inner-space research be ascertained and verified? How would violations be detected and transgressors corrected? Where would the line be drawn, and by whom, between defensive and offensive military nanotechnology? How could adequate monitoring and inspection of commercial nanotechnology be reconciled with the demands of competitiveness and confidentiality?

### 1AC --- Plan

#### The United States federal government should expand the scope of its core antitrust laws to prohibit business practices by its private sector that violate the ethical principles of the Outer Space Treaty

### 1AC --- Solvency

#### Solvency:

#### Adoption of OST principles into antitrust prevents the monopolization of space

Rhimbassen and Rapp, 21 (Maria Lucas-Rhimbassen and Lucien Rapp, Research Fellow with Open Lunar & PhD Candidate in Space Law at the University of Toulouse and CNES. Member of the IISL and an associate member of the ABA Committee on Space Law., Professor Rapp is one of the French leading experts on international business law and international regulatory matters, with a focus on ICT, Feb 2021, accessed on 9-26-2021, Acta Astronautica, "Competitive space foresight: Incentivizing compliance through antitrust", <https://www.sciencedirect.com/science/article/abs/pii/S0094576521004550)//Babcii>

This backdrop illustrates antitrust issues according to which the future of the space ecosystem can unfold as an oligopolistic or monopolistic scenario, where **giant corporations fight** each other **through unfair competition practices** to seize market shares and enforce their own technical standards and rules of the road, **unless regulation prevents them to do so. This could result into a race to the bottom situation**, in a perceived zero-sum world, which is known as toxic competition, highly unsustainable.

While this paper posits that space antitrust must be depoliticized to avoid national partiality and ensure predictability, the need to intervene somehow remains owing to the fact that space antitrust is not an end in itself, but must serve a higher purpose, such as the benefit of all humankind and other higher **ethical principles as enshrined within international space law**. The meaning sought by such an agenda must, therefore, be ensured through a proper governance system, which can be composed of both a top-down hard law approach, in addition to concurring bottom-up soft law initiatives and self-regulatory incentives based on a series of compliance mechanisms to be determined, multilaterally. In that sense, space can be interpreted as a purposeful market to be channeled through “noble” competition, which is a new academic movement considering antitrust as a force leading to a race to the top, if granted the right instruments. **This is uncharted legal territory**, and the space arena is the appropriate testing field to start such a new framework from scratch. Indeed, enforcing a new “noble” **space antitrust, based on** the higher ethical **principles of international space law** (e.g., peace, equality, freedom, duty to assist, benefit sharing, due regard, noninterference, equitable distribution, transparency, etc.) can ensure the perennialism of space law, preclude monopolistic excess and abuse of a dominant position while maintaining a high level of security and safety in terms of STM standards and best practices since competition law in space, based on a “noble” space antitrust framework, is destined to lead the sector in the collaborative and constructive dynamic of a “race to the top” [28].

#### Commercial application is the litmus test --- Only US leadership is sufficient

**Blount, 14** (P.J. Blount, Adjunct professor, air and space law, university of mississippi school of law, May 2014, accessed on 9-28-2021, SUBCOMMITTEE ON SPACE - COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY HOUSE OF REPRESENTATIVES, "SPACE TRAFFIC MANAGEMENT: HOW TO PREVENT A REAL LIFE ‘‘GRAVITY’’", https://www.govinfo.gov/content/pkg/CHRG-113hhrg88144/pdf/CHRG-113hhrg88144.pdf)//Babcii

International space law encompasses a variety of principles that set the bounds of appropriate state conduct in outer space. These principles are broad in scope, and largely undefined. The lack of definition means that the United States is in a **unique position to influence the content of these norms** to help create a safe and secure space environment. International space law grants all states the right of free access to outer space. Additionally, states shall, under Article 9 of the Outer Space Treaty, engage in space activities with due regard to the corresponding interests of other states, and states are given a right and an obligation to seek consultations when there may be harmful interference between space activities. This treaty provision emphasizes international cooperation and coordination in space activities. Article 9 also creates an obligation to not harmfully contaminate the space environment.

Under **Article 6** of the same treaty, states are internationally responsible for the activities of non-governmental actors, and are required to authorize and continually supervise these activities. This is an extraordinary provision in international law which generally does not hold states responsible for the activities of their non-governmental actors. This provision gives states an affirmative obligation to oversee non-governmental actors to ensure that they behave responsibly in space.

As I have already mentioned, these **provisions are substantially undefined**. They require states to engage in space activities in such a manner as to preserve space for use and exploration by all for peaceful purposes. However, these **provisions leave the contours of what constitutes responsible behavior up to states**, who have traditionally cooperated and coordinated on an ad hoc basis. Notably, these **provisions have failed to set meaningful limits on the creation of orbital debris.**

The United States has traditionally been a leader in the development of international space law, and **s**pace **t**raffic **m**anagement should be no different. When **provisions of treaties are unclear**, state practice in regards to those provisions often help to define the content of the—the content and meaning of those provisions. For example, following the United States lead, Article 6—the Article 6 obligation to authorize and supervise has been implemented by states as licensing regimes.

The United States is in a unique position in the development of domestic space traffic management regime to influence the meaning of international norms and the international frameworks developed to coordinate space traffic management among states. To this end, in my written testimony, I have identified three key principles that should be taken into account when developing a domestic space traffic management system.

First, mechanisms providing for data transparency and access are critical to ensuring proper management of space traffic. It is essential to controlling domestic operations, as well as coordinating international cooperation.

Second, a space traffic management system, whether organized in one agency or many, needs to ensure that the—that a government agency has unambiguous jurisdiction during all phases of space operations. This provides regulatory predictability, which can help foster the commercial space industry, and it also ensures that the United States complies with its obligation to continually supervise non-governmental actors.

Finally, whatever government entity or entities is vested with the jurisdiction to manage space traffic, that agency needs also to vested with technical competence to ensure that it can properly oversee these operations. Jurisdiction to management operations will be meaningless without the technical capabilities to do so.

The **maintenance of a safe and secure space environment** is in the national interest of the United States. Civil, commercial, and military operations are all dependent on a space environment free of interference from other actors. To this end, the United States should be a leader in developing a **s**pace **t**raffic **m**anagement system that can foster such an environment, both **domestically and internationally.**

#### The US is key --- Their framework opens the flood gates --- It’s reverse causal

**Kamboj, 20** (Megha Kamboj, law student at Maharashtra National Law University in Mumbai, India, 6-1-2020, accessed on 9-27-2021, Jurist, "Outer Space: A Victim of Power Competition?", https://www.jurist.org/commentary/2020/06/megha-kamboj-outerspace-power-competition/)//Babcii

What’s Next?

The question of who owns outer space has become a controversial topic, with countries and private actors looking to seek profits from outer space. **The US government**, not viewing outer space as “global common,” has made a bold statement against the concept of “space as a heritage of mankind.” This move of the US government has now **opened the gates for other nations to draft domestic** space **laws on similar lines**. With the passing of this order, **the real space race has begun**. It is believed that the concept of res communis, in relation to international space law, limits exploration and innovation.

Such moves by various space powers come with a cost. The fact that **companies** only **based on domestic laws can exploit resources from outer space** will create a huge economic disparity between nations. This will lead to a change in economic and power dynamics in the international domain. In the absence of proper regulatory framework, the risk of weaponization of outer space also increases. Outer space needs to be protected from capitalist greed. As the resources available in outer space are exhaustible, it is important to explore outer space with a sustainable development approach. Also, with an increase in space exploration projects, the problem of space junk increases. Hence, it becomes important to carry out activities such as mining in a very systematic and ethical manner, to reduce over-exploitation of the outer space.

It is the joint responsibility of every nation to minimize the competition of the space race and to improve the balance of power. There is an urgent need for a common global governance mechanism for the exploitation and usage of resources from outer space. An approach that is transparent and collaborative is imperative. It has become the need of the hour to adopt methods for peaceful exploitation that will benefit humankind and not turn space into a battlefield. **The principle of “cooperation and mutual assistance,”** as laid down by the Outer Space Treaty, should be strongly upheld by all the nations – especially the major superpowers.

# 2AC --- Rutgers RR R4

## Adv---Space Traffic

## Adv---Fragmentation

## OFF

### 2AC --- T --- Prohibit

#### Counter-interpretation---rule of reason is a prohibition.

Light 19, Sarah E. Light Assistant Professor of Legal Studies and Business Ethics, The Wharton School, University of Pennsylvania., The Law of the Corporation as Environmental Law, 71 Stan. L. Rev. 137, 2019, Lexis/Nexis

While antitrust law can serve as an environmental mandate by prohibiting collusive behavior that keeps environmentally preferable goods from the market, there is also conflict between antitrust law's goals of promoting competition and environmental law's goals of promoting [\*177] conservation. 192 Because antitrust law's per se rule and rule of reason operate on a somewhat fluid continuum, 193 this Subpart discusses the two doctrines together. The per se rule operates as a prohibition, whereas the rule of reason operates as both a prohibition and a disincentive. As noted above, antitrust law generally prohibits certain types of market activity - price fixing, horizontal boycotts, and output limitations - as illegal per se, and harm to competition is presumed. 194 For example, if an industry association declines to award a seal of approval necessary for a product's sale without any good faith attempt to test the product's performance, but rather simply because that product is manufactured by a competitor, such an action would be illegal per se. 195 Under this Article's framework, a per se violation is thus a prohibition. The more fact-intensive inquiry under the rule of reason tests "whether the restraint imposed is such as merely regulates and perhaps thereby promotes competition or whether it is such as may suppress or even destroy competition." 196 While this extremely broad statement might suggest that any fact is relevant to the inquiry, the salient facts under the rule of reason are "those that tend to establish whether a restraint increases or decreases output, or decreases or increases prices." 197 If an anticompetitive effect is found, then the action is illegal and the rule of reason operates, like the per se rule, as a prohibition. 198 The rule of reason can also operate as a disincentive, even if no [\*178] court finds an anticompetitive effect, as uncertainty and litigation risk may discourage firms from undertaking legally permissible, environmentally positive industry collaborations. 199 Associations of firms have adopted numerous mechanisms of private environmental governance to address the management of common pool resources like fisheries, forests, and the global climate. 200 Examples include the Sustainable Apparel Coalition's Higg Index 201 and the American Chemistry Council's Responsible Care program. 202 But private industry standards raise special antitrust concerns. An agreement among competitors with respect to product or process specifications may exclude competitors who fail to meet such standards, raising the specter that such industry collaborations really constitute output limitations or efforts to limit competition. 203 While the U.S. Supreme Court has scrutinized private standard-setting associations carefully, 204 it has noted that if associations "promulgate … standards based on the merits of objective expert judgments and through procedures that prevent the standard-setting process from being biased by members with economic interests in stifling product competition … , those private standards can have significant procompetitive advantages." 205 In the absence of price fixing or a boycott, a rule of reason analysis generally applies to product standard setting by private associations. 206 The uncertain outcome [\*179] inherent in the application of antitrust law in this context could therefore serve as a potential disincentive to the adoption of private industry standards. 207 The challenge of course is that some form of explicit sanctions on noncompliant industry members may be necessary for private industry standards to be effective. In the context of private reputational mechanisms like the New York Diamond Dealers Club, 208 Barak Richman has pointed out that the Club's use of reputational sanctions and voluntary refusals to deal with actors who flout industry norms, while welfare enhancing, could nonetheless amount to violations of antitrust law. 209 This echoes the concern raised by Andrew King and Michael Lenox in their extensive empirical analysis of the Responsible Care program created by the Chemical Manufacturers Association (now the American Chemistry Council). 210 King and Lenox concluded that the absence of explicit sanctions on members who failed to meet the standards set by the program left the program vulnerable to "opportunism." 211 While they suggested that industry associations could look to third parties to enforce the rules, 212 an alternative way to facilitate the long-term environmental benefits of stronger sanctions would be to interpret antitrust law in conformity with the environmental priority principle presented below. 213 [\*180] In some instances, the conflict between the values of promoting competition and conserving environmental resources can be stark. 214 Jonathan Adler, for example, has identified this conflict in the context of fisheries - a tragedy of the commons situation in which some form of collective action is required to avoid overfishing. 215 He cites as an example Manaka v. Monterey Sardine Industries, Inc., in which a fisherman was excluded from a local fishing cooperative. 216 The fisherman sued the cooperative under the Sherman Act, and the court found an antitrust violation in his exclusion. 217 While the fishing cooperative's policies were no doubt exclusionary, Adler contends that they also promoted conservation by restricting catch. 218 The fishery collapsed by the 1950s, a collapse Adler hypothesizes might have been "inevitable" but that perhaps might not have occurred in the absence of the antitrust suit. 219 While a court performing a rule of reason analysis must consider whether a restraint on trade suppresses or destroys competition, Adler points out that courts may also "consider offsetting efficiencies from otherwise anticompetitive arrangements." 220 It is not clear, however, that the courts have consistently taken these factors into account. 221 Among other potential remedies, Adler argues that to resolve this tension between antitrust law, on the one hand, and private collective action to conserve environmental resources, on the other, courts should more actively consider the "ancillary conservation benefits of otherwise anticompetitive conduct." 222 Recognizing the long-term health of a fishery would be consistent with antitrust law's purpose of ensuring viable markets exist in the future, and consistent with the environmental priority principle introduced below. 223

#### Prohibit can mean ‘severely hinder’---doesn’t necessitate a ban.

Washington Court of Appeals 19 (KORSMO-judge. Opinion in State v. Kimball, No. 35441-5-III (Wash. Ct. App. Apr. 2, 2019). Google scholar caselaw. Date accessed 7/13/21).

His argument runs counter to the meaning of the word "prohibit." It means "1. To forbid by law. 2. To prevent, preclude, or severely hinder." BLACK'S LAW DICTIONARY 1405 (10th ed. 2014). As "severely hinder" suggests, a "prohibition" need not be an all or nothing proposition.

#### Anticompetitive practices are strategies that have anticompetitive effects

Wells 16, Executive Notes Editor, Washington University Global Studies Law Review, J.D., Washington University in St. Louis. (Todd Wells, “Exploring the Space for Antitrust Law in the Race for Space Exploration,” Washington University Global Studies Law Review, Vol. 15, 2016, LexisNexis)

Antitrust law attempts to fight anti-competitive actions. "Anticompetitive practices refer to a wide range of business practices in which a firm or group of firms may engage in order to restrict inter-firm competition to maintain or increase their relative market position and profits without necessarily providing goods and services at a lower cost or of higher quality." The Organization for Economic Cooperation and Development, Glossary of Statistical Terms, Anticompetitive Practices http://stats.oecd.org.proxy.library.georgetown.edu/glossary/detail.asp?ID=3145. Obviously, with such a broad definition of anticompetitive practices, many types of actions can fall under the regulation of anticompetitive law. This can cover forms of collusion, price fixing, bid rigging, bid suppression, complementary bidding, bid rotation, subcontracting, and market divisions. Price Fixing, Bid Rigging, and Market Allocation Schemes: What They Are and What to Look For, U.S. Dep't of Justice, http://www.justice.gov/atr/ public/guidelines/211578.htm. An even broader approach would put patents under antitrust law. "All of these developments, in Congress and the Courts, are in the spirit of harmonizing patent and antitrust law, generally in the direction of subsuming patent law under antitrust law. From the perspective of providing clarity and certainty for those who are the targets of patent and antitrust suits, harmonization has much appeal." Robin Feldman, Patent and Antitrust: Differing Shades of Meaning,13 Va. J.L. & Tech. 1, 7 (2008).

### 2AC --- Future CP --- F/L

#### 3. Can’t solve --- irregular processes undermine deterrence

Baker 11 (Donald I., Senior Partner, Baker & Miller PLLC, Washington DC  Why Is the United States So Different from the Rest of the World in Imposing Serious Criminal Sanctions on Individual Cartel Participants?, 12 Sedona Conf. J. 301, 305–06 (2011))

The accepted wisdom in the US is that we impose jail sentences against those who commit antitrust violations as a painful remedy for them and to deter similar conduct by others.18 As an apparent consequence, we do not tend to see serial violators (those individuals who repeat the same offence after having been caught once). Rather, we see some different individuals and enterprises violating the law because they think they can get away with it, while projecting some significant economic advantage to themselves and or their employers in trying to do so. Any system that is based on deterrence--and fairness--must have clear rules. Ordinary business actors must be able to understand the difference between right and wrong, and their lawyers must be able to give unequivocal legal advice. The basic anticartel rules against price-fixing and bid-rigging (and even market allocations) meet this required standard of clarity and predictability. Effective deterrence also requires that those who might be tempted to take illegal action believe that there is some reasonable probability of their being caught and that, if so, the consequences are likely to be grave. Risk of conviction and imprisonment also provides a powerful inducement for one coconspirator to inform on her other coconspirators. Moreover, the US has provided a fairly high level of funding for antitrust criminal enforcement by the DOJ and a uniquely advantageous prosecutorial system of grand jury investigations. Having more DOJ staff armed with a secretive process favoring the prosecutors clearly increases the government's chance of catching covert conspirators and thereby raises the stakes for those rationally contemplating price-fixing or other cartel activities. Consistency and comprehensiveness in enforcement are very important. For criminal laws against individual cartel participants to really matter, enforcement must be frequent and highly visible. It has taken almost a century in the US for incarceration to become routine for cartel participants who are caught. By contrast, having a criminal law against a profitable activity is unlikely to be effective as a deterrent if the normal prosecutions are so infrequent as to appear more like random lightning strikes or prosecutorial vendettas.

#### 4. Takes two years

David Huckabee 97, Specialist in American National Government, http://www.senate.gov/reference/resources/pdf/97-922.pdf

In the period beginning with the First Congress, through September 30, 1997 (105th Congress, 1 Session), a total of 10,980 proposals had been introduced to amend the Constitution. Thirty-three of these were proposed by Congress to the states, and 27 have been ratified. Excluding the 27th Amendment (Congressional Pay), which took more than 202 years, the longest pending proposed amendment that was successfully ratified was the 22nd Amendment (Presidential Tenure), which took three years, nine months, and four days. The 26th Amendment (18-year-old vote) was ratified in the shortest time: three months and 10 days. The average ratification time was one year, eight months, and seven days.

#### 5. Causes confusion and uncertainty

Phyllis Schafly 96. MA in gov from Radcliffe College, JD from Wash U @ St Louis. May 1996. “Is a Con Con Hidden in Term Limits?.” The Schiafly Report, Vol. 29, No 10. https://eagleforum.org/psr/1996/may96/psrmay96.html

Most of us have watched a Republican National Convention or a Democratic National Convention on television. We've seen the bedlam of people milling up and down the aisles. We've watched how the emotions of the crowd can be stirred, and we've felt the tension when thousands of people make group decisions in a huge auditorium. Now imagine holding the Republican and Democratic National Conventions together -- at the same time and in the same hall. Imagine the confrontations of partisan politicians and pressure groups, the clash of liberals and conservatives, and the tirades of the activists -- all demanding that their view of constitutional issues prevail. Imagine the gridlock as the Jesse Helms caucus tries to work out constitutional change with the Jesse Jackson caucus! No wonder Rush Limbaugh said that a Con Con would be the worst thing that could happen to America and that it might signal time to "move to Australia." That's what it would be like if the United States calls a new Constitutional Convention (Con Con) for the first time in 209 years. It would be a self-inflicted wound that could do permanent damage to our nation, to our process of self-government, and possibly even to our liberty. A Con Con would throw confusion, uncertainty, and court cases around our governmental process by opening up our entire Constitution to be picked apart by special-interest groups that want various changes. It would make America look foolish in the eyes of the world, unsettle our financial markets, and force all of us to re-fight the same battles that the Founding Fathers so brilliantly won in the Constitutional Convention of 1787. George Washington and James Madison both called our Constitution a "miracle". We can't count on a miracle happening again. The most influential players in a new Constitutional Convention would be Big Media (such as Dan Rather and Sam Donaldson) giving on-the-spot interviews and predictions of what they are trying to make happen. The media elite have made themselves players in the political process, not just observers, and a Constitutional Convention would be the biggest media event of our time. It would be an irresistible opportunity for Big Media to guide (if not actually dictate) the result. Under the presidency of George Washington, the original Constitutional Convention of 1787 deliberated in complete secrecy and there were no leaks to the press. That is obviously impossible today. The ratio at the 1988 and 1992 national party conventions was eight reporters per delegate. Demonstrators would hold court outside the convention hall, with the TV cameras giving us daily, live, on-the-spot coverage of pressure groups and radicals demanding constitutional changes. We would have round-the-clock coverage by CNN and C-Span. Demonstrations would be staged by the pro-abortionists and the pro-lifers, the gay activists and their opponents, the radical feminists (Bella Abzug would take time off from her United Nations projects), the environmentalists, the gun control activists, the animal rights extremists, the D.C. Statehood agitators, those who want to relax immigration and those who would restrict it, the homeless, and the unions -- all demanding that their perceived "rights" be recognized in the Constitution. A Constitutional Convention would be confrontational, divisive, and ruled by 20-second television sound-bites. Nobody can predict what the rules or the agenda of a new Constitutional Convention would be. There is nothing in the Constitution or in any law to guide us. The Con Con advocates try to reassure us with talk of a Procedures bill introduced many years ago by the late Senator Sam Ervin -- but Congress has consistently refused to pass any Procedures bill. The shenanigans involved in changing the text of the Procedures bill each time it has been reintroduced prove how political the procedures process is bound to be. The Con Con advocates try to tell us that there are "safeguards" that will prevent bad things from happening at a Constitutional Convention. In fact, there are no safeguards at all, and the alleged "safeguards" are just political campaign promises. None of them is backed up by any statute or court decision. The Constitution tells us nothing except that, if 34 states pass a resolution requesting a Constitutional Convention, Congress "shall" call a Con Con for the purpose of considering "amendments" (in the plural).

#### 6. It’ll be circumvented

Segal 2 **[**POL SCI PROF @ SUNY STONY BROOK, WINNER OF C. HERMAN PRITCHETT AWARD FOR BEST BOOK IN LAW AND JUDICIAL POLITICS FROM AMERICAN POL SCI ASSOCIATION, *THE SUPREME COURT AND THE ATTITUDINAL MODEL REVISITED*, P. 5-6]

If action by Congress to undo the Court's interpretation of one of its laws does not subvert judicial authority, a fortiori neither does the passage of a constitutional amendment, for example, the Twenty-Sixth Amendment reducing the voting age to eighteen and thereby undoing the decision in Oregon v. Mitchell,' which held that Congress could not constitutionally lower the voting age in state elections. Furthermore, not only does a constitutional amendment not subvert judicial authority, courts themselves – ultimately, the Supreme Court – have the last word when determining the sanctioning amendment's meaning. Thus, the Court is free to construe any amendment – whether or not it overturns one of its decisions – as it sees fit, even though its construction deviates appreciably from the language or purpose of the amendment.

#### 7. Con-Con bad --- not real world or predictable

Nick Hodgson 15, history teacher, “Does the President of the United States have an opportunity to change the political system to make it more like political systems of Ireland and Germany, or are such problems completely up to Congress?”, https://bit.ly/2TDCyMT

Changing the political system of the US would involve a complete change of the Constitution which neither the President nor Congress are capable of achieving on their own. There would have to be a massive groundswell of support for such a change from the general public leading to a series of political campaigns and candidates being elected on a platform of changing the constitution. This is so unlikely to happen it's not even worth speculating about.

### 2AC --- States CP --- F/L

#### 3. L2NB --- They’ll remove it to federal courts

Crowell and Moring 8 [Crowell and Moring LLP provide legal services across the world and specialize in antitrust, “THE ABCs OF CROSS-BORDER LITIGATION IN THE UNITED STATES”, https://www.crowell.com/files/ABC-Guide-to-Cross-Border-Litigation\_Crowell-Moring.pdf] IanM

It is important to bear in mind that some **federal statutes** may **apply to conduct** abroad of both **foreign** and U.S. **corporations**. For example, certain federal antitrust laws may apply where the **conduct** was meant to **produce** and in fact did produce a **substantial effect** in the United States. Other examples of laws that may be applied extraterritorially include certain federal securities and international banking laws, the Alien Tort Claims Act, suits against foreign states, various federal civil rights acts, and claims related to international arbitration agreements.

REMOVAL FROM STATE COURT TO FEDERAL COURT

“**Removal**” **permits** **defendants** sued in **state court** to “remove” the case from state court, in certain circumstances, so that it may be adjudicated by a federal court. A **party sued** in **state court** may **favor proceeding** in **federal court** for many reasons: federal courts may be more predictable, consistent, and experienced in **certain matters** than state courts; however, federal court litigation also may be more expensive and time-consuming than litigation in the state courts. As usual, with each rule there are exceptions. For example, **federal courts** in the Eastern District of **Virginia** are **known for moving extremely quickly** while some judges in other jurisdictions can take months or even years to resolve threshold questions in a case.

#### 4. States can’t access international spillover

**Kovacic, 21** (William Kovacic, Writing on behalf of the FTC, William Evan Kovacic is an American lawyer and legal scholar who served as a member of the Federal Trade Commission from 2006 to 2011. Kovacic is currently a professor at George Washington University Law School, 3-4-2021, accessed on 9-13-2021, FTC, "Toward a Domestic Competition", https://www.ftc.gov/sites/default/files/documents/public\_statements/toward-domestic-competition-network/040421domesticcomp.pdf)//Babcii

From the perspective of the United States, the existing design of domestic institutions for making competition policy could inhibit progress toward international convergence on competition policy processes and substantive standards. **Decentralization** and multiplicity in U.S. competition policy making complicates the attainment of a nationwide consensus about the appropriate content of procedures and substantive requirements. This is evident where two or more independent institutions exercise overlapping authority in the absence of a hierarchy of authority that makes the decision of one actor binding on another institutions. The DOJ and the FTC may be **seen as lacking the ability to speak authoritatively to foreign governments about U.S**. competition **policy because** their pronouncements do not bind other institutions, such as sectoral regulators and **state attorneys general**, which independently exercise policymaking power over a wide range of business activity. Coordination of competition policy making for individual transactions among foreign competition authorities becomes more costly where the preferences of several domestic agencies, rather than one institution, are relevant to the policy outcome. For example, a foreign competition authority can negotiate common terms with its competition policy counterparts, but it must also await the outcome of proceedings before a sectoral regulator in the same matter. Competition authorities may lack mechanisms for sharing information and views with the sectoral regulators in the same way that they share information and views with their antitrust counterparts.

#### 5. CP creates massive uncertainty and hurts investment

Robert W Hahn Is Executive Director of the American Enterprise Institute, Brookings Joint Center, which focuses on antitrust and regulatory policy, and Anne Layne-Farrar is a Senior Consultant with NERA Economic Consulting, 2003, Federalism in Antitrust, 26 Harv. J. L. & Pub. Pol'y 877

When states file antitrust cases under state statutes rather than under the Clayton or Sherman Acts, the likelihood of inconsistent and conflicting antitrust precedent is even higher. As a result, state action affects not only current cases, but can also affect future firm behavior. With mergers, the possibility of a challenge from any of the fifty states, each with its own standard of evaluation, could prevent companies from even attempting a beneficial transaction. As Lande points out, "it is confounding enough for antitrust counselors to have to contend with two potential federal enforcement agencies.

Even if state laws were identical, the interpretation and application of those laws would differ "since enforcers with divergent philosophies necessarily will interpret ambiguous terms differently in various factual contexts." Philosophical differences in approaches to antitrust enforcement are likely to stem from many sources, such as political affiliation, educational training, and personal experience. The National Association of Attorneys General (NAAG) Merger Guidelines for the states explicitly allow for this, noting that the general policy can be supplemented or varied in light of differing precedents, and "in the exercise of [the AGs'] individual prosecutorial ... discretion." While differing views can be helpful in some areas of law, such as when different states provide a testing ground for new regulations appropriate for federal adoption, this kind of experimentation is likely to be wasteful in the antitrust arena.

### 2AC --- Regs CP --- F/L

#### 4. The FTC is key to effective signaling AND coordination.

Dr. Heath P. Tarbert 21, JD and JSD from University of Pennsylvania Law School, Master of Studies and Doctor of Philosophy in Comparative Law from Oxford University, “Self-Regulation in the Derivatives Markets: Stability Through Collaboration”, Northwestern Journal of International Law & Business, 41 NW J. Int'l L. & Bus. 175, Winter 2021, Lexis

2. International Harmonization

Another area where government action is necessary relates to international harmonization. While SROs are often adept at formulating cross-border principles and standards with other SROs, 150 the government--and particularly a federal agency--is critical to advancing harmonized regulatory systems with foreign governmental counterparts. An example is the recent harmonization of certain swap data reporting efforts. In proposing and finalizing a new system for data reporting by swap dealers and swap data repositories, the CFTC has worked to harmonize its framework with that of the European Securities and Markets Authority (ESMA). 151 As data is inherently borderless and because swap dealers and swap data repositories often must report data to both the CFTC and ESMA, harmonizing reporting requirements where appropriate can produce significant cost savings and efficiencies for market participants.

For example, the CFTC's efforts to bring its swap data reporting system into greater harmony with international coordination efforts has led to the publication of a CFTC Technical Specification, which contains 128 reportable data fields. 152 The Technical Specification streamlines hundreds of prior fields that were previously required by swap data repositories operating without clear CFTC guidance. This change will enable the CFTC to receive the data it needs to perform its regulatory functions while at the same time reducing duplicative reporting burdens for entities subject to [\*203] multiple jurisdictions. In proposing revisions to the swap data reporting rules, the Chairman of the CFTC stated:

As it stands today, a market participant with a swap reportable to the CFTC might also have to report the same swap to the SEC, the European Securities and Markets Authority (ESMA), and perhaps other regulators as well. The global nature of our derivatives markets has led to the preparation and submission of multiple swap data reports, creating a byzantine maze of disparate data fields and reporting timetables. Market participants should not incur the costs and burdens of reporting a grab-bag of dissimilar data for the very same swap. That approach helps neither the market nor the CFTC: conflicting data reporting requirements make regulatory coordination more difficult, preventing a panoramic view of risk. 153

Resolving situations like this requires significant federal action to coordinate with and align regulatory requirements and technical standards with foreign regulators. 154 While SROs can be very effective at constructing international standards, they lack the ability to place the imprimatur of the United States government, as a sovereign nation, on negotiations and regulatory efforts. In contrast, CFTC action in the swap data reporting context has given assurances to other regulators that harmonization efforts have the backing of the United States government. This is important not only for the mechanics of promulgating rules, but also for international comity: federal support for collaborative efforts sends a strong signal to foreign governmental counterparts that can lay the groundwork for future cooperation.

#### Sectoral regulators are insufficient

**Kovacic, 21** (William Kovacic, Writing on behalf of the FTC, William Evan Kovacic is an American lawyer and legal scholar who served as a member of the Federal Trade Commission from 2006 to 2011. Kovacic is currently a professor at George Washington University Law School, 3-4-2021, accessed on 9-13-2021, FTC, "Toward a Domestic Competition", https://www.ftc.gov/sites/default/files/documents/public\_statements/toward-domestic-competition-network/040421domesticcomp.pdf)//Babcii

Coordination of competition policy making for individual transactions among foreign competition authorities becomes more **costly** where the preferences of several domestic agencies, rather than one institution, are relevant to the policy outcome. For example, a foreign **competition authority can negotiate** common terms **with** its competition **policy counterparts**, but it **must** also **await** the **outcome of** proceedings before **a** sectoral **regulator** in the same matter. Competition authorities may **lack mechanisms for** sharing information and views with the **sectoral regulators** in the same way that they share information and views with their **antitrust counterparts.**

### 2AC --- Core PIC --- F/L

#### 3. Bruh you rehighlighted the part about bank regulations please read the evidence

#### We read green

Rhimbassen and Rapp, 21 (Maria Lucas Rhimbassen and Lucien Rapp, Research Fellow with Open Lunar & PhD Candidate in Space Law at the University of Toulouse and CNES. Member of the IISL and an associate member of the ABA Committee on Space Law, Professor Rapp is one of the French leading experts on international business law and international regulatory matters, with a focus on ICT, 6-25-2021, accessed on 10-8-2021, Emerald, "New space property age: at the crossroads of space commons, commodities and competition | Emerald Insight", <https://www.emerald.com/insight/content/doi/10.1108/JPPEL-02-2021-0007/full/html>)//Babcii

. Competition law New technologies, globalization and deregulation helped competition law to make its way into the derivatives industry, to compensate for decreasing agency oversight because of a long tradition of jurisprudence in that sense (Weinstein, 2019). The US Commodities Futures Modernization Act (CMFA) of 2000 both deregulated to a certain extent the derivate market while opening the door to antitrust measures (Falvey, 2006) as shown here: ANTITRUST CONSIDERATIONS. – Unless necessary or appropriate to achieve the purposes of this Act: [a] board of trade shall endeavor to avoid – (A) adopting any rules or taking any actions that result in any unreasonable restraints of trade; or (B) imposing any material anticompetitive burden in trading on the contract market. Indeed, increasing competitive market dynamics and commodity exchanges call for antitrust enforcement; however, it remains unclear as to how this will happen and to what degree. Nonetheless, the Commodities Futures Trade Commission (CFTC), created in 1974, provided for some antitrust authority vs anti-competitive conduct via its “antitrust considerations” within the 2010 Dodd-Frank Act [19] as is explained below, to help break collusive behavior and cartelization of the oligopolistic derivatives market in the highly increasing concentrated financial sector [20]: One of Dodd-Frank’s central goals was to ensure that most derivatives transactions are centrally cleared (thereby reducing systemic risk) and traded on exchanges (reducing pricing opacity and promoting competition). The increased significance of derivatives clearinghouses and exchanges in the Dodd-Frank regulatory scheme raises the danger that firms controlling these entities could exclude derivatives-trading rivals who need access to complete their swaps. Such conduct could lead to reduced competition and higher prices in derivatives trading. Big-bank control of clearinghouses and exchanges also may give those firms the opportunity to **manipulate the types of derivatives contracts that are exchange traded and centrally cleared**, pushing certain contracts into the over-the-counter markets where the banks can charge higher prices. To the extent central clearing of derivatives trades reduces systemic risk (the key premise of Dodd-Frank’s derivatives reforms), this outcome may threaten systemic soundness. Despite these risks, antitrust immunity may **shield such conduct from attack, leaving sector regulators as the only bulwark against anticompetitive activity** in these markets (Weinstein, 2019, p. 6). This **measure proved inefficient**, as it did not cover a major loophole (swap dealers [21]) and its reach was rather **limited**. Therefore, it is argued that **the scope of the antitrust considerations should be broadened** by Congress by amending the 1936 Commodities Exchange Act (CEA) – amended several times since [22] – to “prohibit any person who causes (or attempts to cause) unreasonable restraints of trade or material anticompetitive burdens in the markets for derivatives.” **This amendment should also prohibit both in-house and inter-Exchanges anti-competitive and anti-ethical behavior such as unfair competition and derivatives price-fixing conspiracies** (Scopino, 2016). Weinstein concludes in that sense: Concentration appears to be increasing in the financial sector and the broader economy. In this context, the Supreme Court’s restrictions on antitrust enforcement in regulated markets are especially concerning. This concern is heightened by evidence that **sector regulators generally are poorly suited to protecting competition and reluctant to take on that job.** This Article has proposed a regulatory-design solution to the challenge of protecting competition in regulated markets. Structural regulation of potential competitive bottlenecks can adequately preserve competition while allowing **sector regulators to focus on their core missions**. When executed properly, this approach may be **superior to active sector-regulator competition enforcement** and even to traditional antitrust enforcement (Weinstein, 2019, p. 59). For this reason, **antitrust has the potential for further regulatory impact** and reach in the commodities sector and we posit that this could be extrapolated to space in a more complex fashion, as space is a peculiarly vast and complex domain, as has been shown throughout this paper. 10. Space antitrust In the light of the previous section, this paper argues that space antitrust could provide for both a pragmatic and efficient manner to contain the volatile forces of a space commodities market, as explained supra. Centralized global space governance is a vast, multi-generational project, presumably in the works and a manifestation of its shapes has yet to appear. In the meantime, however, alternate methods must be investigated. Decentralized models are surfacing from a bottom-up approach and polycentricity is emerging organically. How these polycentric forces will interact, compete, cooperate and evolve can be facilitated by a **“space” antitrust framework based on the OST principles**, which cover interactions relevant to an ethical “space antitrust” and sustainable space ecosystem. These principles, which all have an incidence on competition, are benefit sharing, equality of access, non- discrimination, non-harmful interference, due regard, cooperation and fair competition. Future analysis as to their incidence is necessary to determine their interaction with an antitrust framework and how these interactions are to be governed. Polycentricity is timely given the complexities of systems of systems in space. It could successfully work for hand in hand with space antitrust to ensure that the transnational lex mercatoria and the commoditization of the space market do not collide with the higher ethical principles, which international space law relied on for half a century. 11. Discussion Traditionally, international space law, as opposed to national space law, is not equipped to deal directly with the private sector. However, antitrust has the tools to do so. The broader range of space antitrust might help delve further down into the elusive and transnational commercial law, which is likely to accelerate in the near future and multiply interest around the commodification of the space market. As suggested throughout this paper, **space concentration, leading to monopolies, is a likely outcome** of the further development of space commerce. To mitigate the risks of monopolization, collusive and of other anti-competitive behavior, especially when considering the particular nature of space resources, to be exchanged on the emerging space-based market – including the complex and specialized services attendant thereto – special ethical and legal safeguards must be put in place to incentivize competition while containing the risks of fragmentation mentioned previously. This is important to enable a healthy expansion of the ecosystem. Our emphasis on the market forces at play is rooted in the assumption that through the observation of the current trends of commercialization and of the growing number of non-traditional actors (either public or private) stemming from old and from new space-faring nations, it is easier to anticipate risk and to provide supporting regulatory proposals. Our suggested approach toward an adaptive and polycentric governance model attempts to resolve some of these challenges, by allowing for a bottom-up framework that fosters commercialization, to surface organically, from the players, with minimal outside intervention. Our goal is to prevent the risk of privatization and commercialization that might gradually erode the ethical principles of international space law. To use the analogy of the carrot and the stick in striking a balance between regulatory intervention and free initiative, we prefer the **carrot** approach. Incentivizing the **private sector** to compete around ethically balanced markets has the potential to unlock new and unforeseen forces of antitrust in space to channel the fragmentation of forces in a sustainable manner while ensuring the respect of the conventional set of ethical principles to which many corporations already subscribe to in the context of their corporate compliance programs. Here we would an additional layer of space law higher ethical principles (such as enumerated supra) and investigate into further incentivizing soft law implementations. These higher principles are rooted in system interconnectivity and complexity, and have direct consequences on life, **planetary protection, environmental aspects, intergenerational equity**, etc. In approaching these issues through the angle of antitrust, we argue that **antitrust is bound to evolve and to adapt**, both in Space and on Earth. Furthermore**, a broad space antitrust scope** might also benefit from polycentric governance when concrete self-determination claims would manifest, such as Elon Musk’s self-governing principles on Mars. Any future space colonies (or settlements) would either rely on their own resources or would depend on the import and the export of resources, and therefore, on resource commodification. It then follows that having an ethical space antitrust regime well in place appears as a foreseeable necessity. An ethical space antitrust should also consider non-market factors such as the potential new rights granted to specific resources and regulate accordingly (e.g. the equivalent in space of legal rights to natural resources, etc.). Without such an ethical regime framework harnessing uncoordinated competitive forces, one possible outcome would be the **dystopia** described by Andy Weir’ Artemis economy on the Moon based on “soft landing grams” credits directly applied to one’s consumption of oxygen. A bleak perspective. Finally, antitrust is an adequate response to space property and resources, as property law is, at its basis, domestic law and so is competition law. They can evolve in parallel in the space sector and merge into an **international framework**, adapted to the international space law forum. There is no internationally harmonized antitrust framework as of this writing, except non-binding UN guidelines. Perhaps, a “**space antitrust**” would help bridge that gap and contribute to **reducing growing issues such as “forum shopping,” fragmentation and “conflict of laws.”** 12. Limitations and further research While this paper is at the exploratory level, further research is necessary in determining the scope of antitrust in space, property and commodities and how ethics can play a role specifically, at the implementation level. Case studies should be conducted with a clear methodology. Moreover, the research must include other financial aspects such as spacebased assets and securities, notably the Space Assets Protocol of the UNIDROIT Cape Town Convention. Finally, more work must be done in terms of international/transnational recommendations for antitrust, as there is no internationally harmonized antitrust governance or regime and it remains heavily politicized – or not enough, depending on the school of thought (Teachout, 2020, p. 212). 13. Conclusion This paper explored a roadmap into managing fragmentation triggered by the accelerated development of the outer space ecosystem and the rise in non-traditional space actors, be they public or private. **International space law no longer suffices to cope with all the new actors**, and therefore, transnational alternates are recommended. This paper recommends a transformed antitrust regime, adapted to space, based on the corpus juris spatialis ethics. This could help preventing the risk of space law erosion while privatization and commercialization of space are trending and potentially leading to the commodification of the space market and ecosystem, while space lawyers are still debating internationally as per the principle of non-appropriation and as per what a “space object” should consist of and what property rights could be applicable in space. An interdisciplinary approach could prove very helpful to address this problem. For instance, E. Ostrom’s work on classifying the goods into four categories from an economic standpoint might help space lawyers into classifying space goods once and for all and this could serve as a catalyst for polycentric space governance, governed inter alia, by competing forces. However, these competing forces should rather be seen as the dark matter in a space ecosystem, enabling sustainable synergies and interactions, with intergenerational equity in mind. This would be essential to avoid unregulated speculation based on space commodities, which could prove to be more detrimental in such an extreme environment as space. For instance, speculation benefits from climate change impact on crops and other commodities on Earth. We are all too familiar with the consequences. Imagine what space weather-based speculation could do in space. It could obliterate entire economies at once. One could argue that either space antitrust monitors the space commoditization closely, either space derivatives should be significantly regulated.

### 2AC --- FTC DA --- F/L

#### 1. FTC enforcement thrashed now because of staff morale

Sokol, 12/13 (Daniel Sokol, D. Daniel Sokol is a Professor of Law at the USC Gould School of Law and an Affiliate Professor of Business at the Marshall School of Business., 12-13-2021, accessed on 1-3-2022, ProMarket, "Populism at the FTC Undermines Antitrust Enforcement - ProMarket", <https://promarket.org/2021/12/13/ftc-populism-antitrust-enforcement-sokol-wickelgren/)//Babcii>

Rejection of expertise. The current FTC leadership criticizes reliance on economic analysis, caricaturing academic literature to justify dropping the agency’s guidance to companies about which vertical mergers may be challenged.

As Professors Carl Shapiro and Herbert Hovenkamp [have written for this blog](https://promarket.org/2021/09/23/ftc-vertical-mergers-antitrust-shapiro-hovenkamp/) regarding the basis of the vertical merger guidelines:

“This statement is flatly incorrect as a matter of microeconomic theory. [Elimination of Double Marginalization] applies (a) to multi-product firms, (b) regardless of whether the firms at either level have monopoly power or charge monopoly prices, and (c) regardless of whether the downstream production process involves fixed proportions. All of this has been included in economics textbooks for decades, building on a [seminal 1950 paper](https://www.jstor.org/stable/1828887) by Joseph Spengler.”

This is a symptom of the larger process problem: The majority statement on the withdrawal cited the agency’s experience—yet the staff was likely not consulted. If they had been, they could have ensured the statement [made the economically-defensible case](https://link.springer.com/article/10.1007/s11151-021-09826-x) for stricter merger review.

Leaders of well-managed organizations listen to staff, but the FTC staff, Commissioner Christine S. Wilson recently said,  **has become**[increasingly marginalized](https://www.ftc.gov/public-statements/2021/09/testimony-commissioner-christine-s-wilson-hearing-reviving-competition)**in**[decision-making](https://www.ftc.go/system/files/documents/public_statements/1598399/ftc_2021_fall_forum_wilson_final_the_neo_brandeisian_revolution_unforced_errors_and_the_diminution.pdf), noting “current leadership has sidelined and disdained our staff.” This leads the staff to **invest less in the agency** and the [best employees to find other employment](https://www.law.com/nationallawjournal/2021/07/13/a-real-disquiet-ftc-staff-attorneys-are-job-hunting/?slreturn=20211013215110).  What keeps talented staff making less money in the government is the knowledge that they make a difference. Without motivated and high-quality staff, the FTC **cannot effectively maintain current work levels**, let alone effectively expand enforcement. In her testimony, Wilson said that staff have been silenced externally—or as Commissioner Wilson states more directly, FTC leadership has been “muzzling staff internally and externally”—**forbidden to speak** publicly and present their scholarship. Ignoring and disrespecting staff undermines the agency’s **capabilities** and leads to enforcement errors and **court losses**.

#### 2. They are cutting back already

Olive Morris 7/12/21. Policy analyst with The New Center. “Lina Khan Has Big Plans For Big Tech — But She Might Not Have the Tools.” https://www.realclearpolicy.com/articles/2021/07/12/lina\_khan\_has\_big\_plans\_for\_big\_tech\_\_but\_she\_might\_not\_have\_the\_tools\_785004.html

But the FTC may not be equipped for that fight. Cases taken up by the FTC cost the agency enormously in fees paid to outside consultants and economists, who can charge as much as $1,350 an hour. At the same time, corporate merger filing fees, which traditionally serve as a major cash flow for the agency, have fallen during the pandemic. According to emails obtained by POLITICO, the lack of funding is also taking its toll on FTC staffing and resources. “[W]e will either need to bring fewer expert intensive cases or significantly decrease our litigation costs (e.g. experts, transcripts, litigation support contractors, etc.),” Executive Director David Robbins said in an October 29, 2020 email. Robbins said in later emails that the agency would be freezing all hiring, promotions, and end-of-the-year bonuses indefinitely. The FTC may see more funding in 2021 if Congress passes bills like the U.S. Innovation and Competition Act, which would allow the agency to increase their merger filing fees. However, it’s still unclear how much these fees would be raised and when the new payment schedule could be applied.

#### 4. Winners win—the plan saves the FTC by making them appear successful.

Lopez-Galdos 21. Marianela 7-28-21. Global Competition Counsel at the Computer& Communications Industry Association, previously served as Director of Competition & Regulatory Policy, and is a professor at George Washington University Competition Law Center and at the University of Melbourne Law School. “Policy Decisions of Antitrust Institutions Series: The Future of the FTC and Its Perils”. Disruptive Competition Project. <https://www.project-disco.org/competition/072821-policy-decisions-of-antitrust-institutions-series-the-future-of-the-ftc-and-its-perils/>

One of the most challenging matters to tackle when it comes to leadership of antitrust authorities, or administrative agency for that matter, is legacy and the impact for the future of the agency. To put it simply, while antitrust leaders leave agencies, the side effects of leadership’s successes and failures condition the future of the agencies. Their leadership has consequences and sets precedent which will bind the agency well into the future. Under the current political context, it would not be surprising if the current Neo-Brandeisian FTC enjoyed political support and success with its decision to bring big cases, especially against leading tech companies. In the short term, if the FTC makes headlines for opening cases against “Big Tech”, policymakers pushing for antitrust reforms will surely applaud the new changes as they would reflect a commitment to enhanced enforcement outcomes notwithstanding the strength of the cases. However, in the mid-and long-term, if the FTC loses the big cases, the commitment to policy outcomes won’t be met. And then, it is unlikely that the question would be whether the antitrust norms are fit for today’s economy, but rather if the agency is capable of executing its mandate effectively. The recent decision in the FTC v. Facebook case is a good example of this paradigm, where the Judge expressed that the FTC had not carried out a sufficiently robust analysis supported by evidence, and therefore dismissed the case.

#### 7. Funding rides the plan --- Or passes inevitably

Dylan Byers 21, senior media reporter for NBC News; internally citing George Washington University professor and former FTC chair William Kovacic; “Is Facebook untouchable? It's complicated,” NBC News, 7-1-2021, https://www.nbcnews.com/tech/tech-news/facebook-untouchable-complicated-rcna1323

The House Judiciary Committee recently advanced six bills that would bolster the government's ability to regulate Big Tech. They range from simple budgeting measures — one would give more funding to the FTC and the Department of Justice for their antitrust enforcement efforts — to profound reforms — one that would stop platform companies from preferencing their products over those of their competitors and another that would make it illegal for companies to eliminate competitors through acquisitions.

This legislative package faces an arduous road ahead. House Majority Leader Steny Hoyer, who sets the House floor schedule, has said none of the six bills are ready for a vote, which suggests they don't have broad bipartisan support. If and when they do make it through the House, they face an even harder battle in the Senate.

"It's hard to imagine that the larger legislative package is accomplished this year," Kovacic said, though he predicted a few of the less-threatening bills — budgeting, for example — are likely to pass on their own.

"The funding for the FTC and DOJ antitrust divisions, it's nearly 100 percent likely that Congress will pass that law," he said. He said another bill, which would block the tech firms from moving court hearings to more favorable states, was also likely to pass.

### 2AC --- Gas !

#### No impact

Khadduri, IR PhD, 11 (Walid – PhD JHU, former Middle East Economic Survey Editor-in-Chief, The impact of rising oil prices on the economies of importing nations, Al Arabiya News, http://english.alarabiya.net/views/2011/08/23/163590.html)

What is the impact of oil price shocks on the economies of importing nations? At first glance, there appears to be large-scale and extremely adverse repercussions for rising oil prices. However, a study published this month by researchers in the IMF Working Paper group suggests a different picture altogether (it is worth mentioning that the IMF has not endorsed its findings.) The study (Tobias N. Rasmussen & Agustin Roitman, "Oil Shocks in a Global Perspective: Are They Really That Bad?", IMF Working Paper, August 2011) mentions that “Using a comprehensive global dataset […] we find that the impact of higher oil prices on oil-importing economies is generally small: a 25 percent increase in oil prices typically causes GDP to fall by about half of one percent or less.” The study elaborates on this by stating that this impact differs from one country to another, depending on the size of oil-imports, as “oil price shocks are not always costly for oil-importing countries: although higher oil prices increase the import bill, there are partly offsetting increases in external receipts [represented in new and additional expenditures borne by both oil-exporting and oil-importing countries]”. In other words, the more oil prices increase, benefiting exporting countries, the more these new revenues are recycled, for example through the growth in demand for new services, labor, and commodity imports. The researchers argue that the series of oil price rallies (in 1983, 1996, 2005, and 2009) have played an important role in recessions in the United States. However, Rasmussen and Roitman state at the same time that significant changes in the U.S. economy in the previous period (the appearance of combined elements, such as improvements in monetary policy, the institution of a labor market more flexible than before and a relatively smaller usage of oil in the U.S. economy) has greatly mitigated the negative effects of oil prices on the U.S. economy. A 10 percent rise in oil prices before 1984, for instance, used to lower the U.S. GDP by about 0.7 percent over two to three years, while this figure started shrinking to no more than 0.25 percent after 1984, owing to these accumulated economic changes. This means that while oil price shocks continue to adversely impact the U.S. economy, the latter has managed, as a result of the changes that transpired following the first shock in the seventies, to overcome these shocks, and subsequently, the impact of oil price shocks has become extremely limited compared to previous periods. The significance of this study lies in its investigation of the impact of rising oil prices worldwide, especially in developing countries, in contrast with the limited focus on the United States or the Western industrialized countries in other similar available literature. Thus, the researchers draft a comprehensive global portrait of the intertwined relationship between crude oil prices on the one hand, and economic production and international trade on the other. They thus conclude that “the results show that these correlations have, across the world, usually been positive. High oil prices have generally coincided with good times for the world economy, especially in recent years.”

### 2AC --- Econ DA --- F/L

#### 1. Economy will implode --- non-bank financial speculation, rate hikes, and omicron

Lachman, 22 (Desmond Lachman, Desmond Lachman is a senior fellow at the American Enterprise Institute. He was formerly a deputy director in the International Monetary Fund’s Policy Development and Review Department and the chief emerging market economic strategist at Salomon Smith Barney., 1-4-2022, accessed on 1-8-2022, The Hill, "Another economic recession in 2022?", <https://thehill.com/opinion/finance/588194-another-economic-recession-in-2022)//Babcii>

In 2008, economists were caught flatfooted by the Great Recession that followed in the wake of the [Lehman Brothers bankruptcy](https://www.investopedia.com/articles/economics/09/lehman-brothers-collapse.asp). The main reason for this failure was that they had turned a blind eye to the financial sector’s acute vulnerability to the potential bursting of the U.S. housing and credit market bubble. In the event, that bursting brought on a deep and painful economic recession. Today, it seems that many **economists have learned little from their 2008 forecasting failure**. Instead of focusing on how vulnerable the U.S. and world economic financial systems are to the potential bursting of the global “everything” asset price and credit market bubble, [too many](https://www.economist.com/finance-and-economics/is-the-world-economy-going-back-to-the-1970s/21805260) are fretting about the risk of a return to the 1970s inflation problems. Many economists are setting themselves up for another major forecasting failure when the **inevitable bursting of today’s bubble finally arrives and upends the global economic recovery**. One reason for surprise at the economists’ current complacency is that today’s asset and credit market bubbles are much more pervasive than they were in 2008. Another is that today’s U.S. and world debt levels in relation to GDP are much higher than they were back then. According to t[he Institute for International Finance](https://www.reuters.com/business/total-global-debt-dips-emerging-market-debt-hits-record-high-2021-11-17/), world debt-to-GDP levels rose during the pandemic by 35 percentage points to an all-time high of 350 percent. In the run up to the 20**08** economic recession the bubbles were largely confined to the U.S. **housing and credit** markets. But today the bubbles are to be found in practically every corner of the world’s **asset and credit markets**. It is not simply that today U.S. **inflation-adjusted housing prices are higher than** they were in 20**06** or that U.S. **equity** valuations are at lofty **levels experienced only once before in the past 100 years**. It is that vast amounts of money have been loaned to borrowers with dubious ability to repay. Those monies have been loaned at very low interest rates that do not nearly **compensate the lenders for default risk.** A particularly troubling instance of **gross credit misallocation** is that characterizing the emerging market economies, which now account for around half of the world economy. These **economies** have now become more indebted than ever before at relatively low interest rates as global investors have stretched for yield. This has been the case despite that the pandemic has upended their economies and, in many instances, put their public debt on an unsustainable path. Over the past year, two factors have kept global asset and credit markets **well** bid. One is the large amount of money **printing** by the world’s major central banks, and the other is the strength of the world economic **recovery** from its March 2020 COVID-19 low. This makes today’s widespread complacency about economic recession risk in 2022 even more surprising considering that we **appear to be on the cusp of a reversal in those two supportive factors**. With **inflation now running at a rate well above their inflation targets**, it’s only a matter of time before the world’s major central banks turn off the monetary policy spigots that have been fueling the “everything” bubble. Already at its last meeting, the Federal Reserve announced an [acceleration of the tapering of its bond-buying program](https://www.business-standard.com/article/international/us-fed-announces-faster-tapering-of-asset-purchases-amid-rising-inflation-121121600233_1.html) with a view to ending that program in March. That could pave the way for a more **aggressive cycle of interest rate hikes than the market is currently expecting** especially if the omicron variant prolongs global **supply chain disruptions** and causes another inflation uptick. Yet another factor that could trigger the bursting of the global “everything” bubble might be a meaningful slowing in the global economy. In this context, markets seem to be overly complacent about the risks to the world economic recovery from the current surge in the omicron variant and from a possible sharp slowdown in the Chinese economy as a result of the acute problems in its property sector. Economists and the Federal Reserve take comfort in knowing that today’s U.S. banking system is much better equipped to handle the bursting of an asset price bubble than it was in 2008. This seems to be blinding them to the high degree of exposure of the largely unregulated non-bank part of the **financial** system. That could be setting us up for a series of Long-Term Capital Management (LTCM) moments for which U.S. and world economic policymakers seem to be **totally unprepared.**

#### 2. Wave of foreign antitrust thumps

Wheeler, 21 (Tom Wheeler, Tom Wheeler is a visiting fellow in Governance Studies at The Brookings Institution. Former chariman of the Chairman of the FCC., 2-10-2021, accessed on 8-18-2021, Brookings, "A focused federal agency is necessary to oversee Big Tech", <https://www.brookings.edu/research/a-focused-federal-agency-is-necessary-to-oversee-big-tech/)//Babcii>

A less obvious challenge presented by **the fed**eral government’**s failure** to effectively oversee the dominant digital companies is how it has left American **companies unprotected** in regard to the policies of other nations, and even individual American states. The United States is a worldwide leader in digital products and services for many reasons, but most notably because of its uniform market of 325 million consumers in which to develop products, products that are then widely available to an interconnected world. Such an advantage is [threatened](https://www.brookings.edu/blog/techtank/2019/03/26/the-tragedy-of-tech-companies-getting-the-regulation-they-want/) when the absence of federal government policy leadership opens the door for policies to be determined by others. In an interconnected world, the absence of national oversight and leadership **leaves U.S. companies exposed to rules made by other nations**. Because of this absence, there is little American input. Similarly, the **absence of a national policy encourages state governments** to develop their own answers to pressing digital economy questions—answers that run the risk of diminishing the advantage of a uniform national marketplace. States as diverse as [California](https://oag.ca.gov/privacy/ccpa) and [Vermont](https://www.vpr.org/post/public-utility-commission-vermont-can-regulate-internet-telecommunications#stream/0) are adopting their own approaches to internet governance, while **foreign nations are filling the leadership void** internationally. The European Union proposed a [Digital Services Act](https://ec.europa.eu/digital-single-market/en/digital-services-act-package) **to regulate the behavior** of online companies. The **U**nited **K**ingdom proposed the creation of a [new digital watchdog](https://www.gov.uk/government/publications/digital-regulation-cooperation-forum). Italy [announced](https://www.reuters.com/article/idUSKBN27D0MM) an investigation into Google’s advertising market activities. Germany is [investigating](https://uk.reuters.com/article/us-amazon-com-germany-competition/german-watchdog-launches-new-investigation-into-amazon-report-idUKKBN27D2OO) Amazon’s **relationships** with third-party sellers. **China went** so **far** as to attempt **to push a new** internet architecture through the U.N.’s International Telecommunications Union. American market oversight policies have traditionally been the North Star in the development of international technology policy.[[7]](https://www.brookings.edu/research/a-focused-federal-agency-is-necessary-to-oversee-big-tech/#footnote-7) Where there is no policy, however, there can be no pole star. By being absent from the field, the federal government has walked away from a history of American leadership.

#### 5. Business formation is useless for the general economy

Bagrie, 18 (Cameron Bagrie, Cameron Bagrie is the Managing Director of Bagrie Economics. Cameron has been an economist for 20 years. For over 11 years he was the Chief Economist at ANZ. He has also worked as an economist at the National Bank, Treasury and Statistics New Zealand., 8-9-2018, accessed on 8-21-2021, The Spinoff, "Business confidence is a hopeless indicator. But that doesn’t mean the economy isn’t in trouble", <https://thespinoff.co.nz/business/09-08-2018/business-confidence-is-bullshit-but-that-doesnt-mean-the-economy-isnt-in-trouble/)//Babcii>

The economy is headed for recession if you believe the readings from business confidence. Thankfully we can largely ignore business confidence readings. We can’t ignore other survey measures though that are saying growth has slowed and the official statistics are showing the same. The last three quarterly GDP prints have been 0.6, 0.6 and 0.5% and we only have data up to March 2018. That’s annualised growth in the low 2’s and a dip below 2% now looks likely. We have the potential for a growth pothole. That is becoming a concern as the wheels of the economy need to be turning and tax revenue coming in the door for social agenda demands to be met. A whopping net 45% of firms are pessimistic about the general economy according to the ANZ Business Outlook survey. That’s a level last seen around the global financial crisis. Of course, no one really believes things are that bad. We can’t blame the global scene as other countries would be seeing massive falls in confidence too if that was a key factor. Other countries are not. The New Zealand Institute of Economic Research (NZIER) is showing weak readings for business confidence within their Quarterly Survey of Business Opinion (QSBO) too. The good news is that business confidence is hopeless as an economic indicator. The correlation with economic growth is poor and I largely ignore business confidence readings. Changes in direction can provide some insightful information – whether things are picking up or slowing down, but not the levels. Businesses tend to be more upbeat regarding general confidence about the economy under a blue flag as opposed to a red one. Business confidence averaged minus 18 between 2000 and 2007. The economy (measured by real gross domestic product) grew on average by more than 3.5% per year. Yep, confidence was negative, but growth was positive. So, we ignore business confidence as an economic indicator. This is nothing new. It’s surprising headline business confidence figures receive so much attention.

#### 6. Decline doesn’t cause war

Dr. Stephen M. Walt 20, Robert and Renée Belfer Professor of International Relations at Harvard University, PhD in International Relations (with Distinction) from Stanford University, MA in Political Science from the University of California, Berkeley, “Will a Global Depression Trigger Another World War?”, Foreign Policy, 5/13/2020, https://foreignpolicy.com/2020/05/13/coronavirus-pandemic-depression-economy-world-war/

On balance, however, I do not think that even the extraordinary economic conditions we are witnessing today are going to have much impact on the likelihood of war. Why? First of all, if depressions were a powerful cause of war, there would be a lot more of the latter. To take one example, the United States has suffered 40 or more recessions since the country was founded, yet it has fought perhaps 20 interstate wars, most of them unrelated to the state of the economy. To paraphrase the economist Paul Samuelson’s famous quip about the stock market, if recessions were a powerful cause of war, they would have predicted “nine out of the last five (or fewer).”

Second, states do not start wars unless they believe they will win a quick and relatively cheap victory. As John Mearsheimer showed in his classic book Conventional Deterrence, national leaders avoid war when they are convinced it will be long, bloody, costly, and uncertain. To choose war, political leaders have to convince themselves they can either win a quick, cheap, and decisive victory or achieve some limited objective at low cost. Europe went to war in 1914 with each side believing it would win a rapid and easy victory, and Nazi Germany developed the strategy of blitzkrieg in order to subdue its foes as quickly and cheaply as possible. Iraq attacked Iran in 1980 because Saddam believed the Islamic Republic was in disarray and would be easy to defeat, and George W. Bush invaded Iraq in 2003 convinced the war would be short, successful, and pay for itself.

The fact that each of these leaders miscalculated badly does not alter the main point: No matter what a country’s economic condition might be, its leaders will not go to war unless they think they can do so quickly, cheaply, and with a reasonable probability of success.

Third, and most important, the primary motivation for most wars is the desire for security, not economic gain. For this reason, the odds of war increase when states believe the long-term balance of power may be shifting against them, when they are convinced that adversaries are unalterably hostile and cannot be accommodated, and when they are confident they can reverse the unfavorable trends and establish a secure position if they act now. The historian A.J.P. Taylor once observed that “every war between Great Powers [between 1848 and 1918] … started as a preventive war, not as a war of conquest,” and that remains true of most wars fought since then.

The bottom line: Economic conditions (i.e., a depression) may affect the broader political environment in which decisions for war or peace are made, but they are only one factor among many and rarely the most significant. Even if the COVID-19 pandemic has large, lasting, and negative effects on the world economy—as seems quite likely—it is not likely to affect the probability of war very much, especially in the short term.

### 2AC --- Funding DA --- F/L

#### Voting rights proves no bi-part and covid relief thumps

Clark Hill, 1/20 (Clark Hill, International law firm serving private firms, 1-20-2022, accessed on 1-22-2022, JD Supra, "Window on Washington – Vol. 6, Issue 2 | JD Supra", https://www.jdsupra.com/legalnews/window-on-washington-vol-6-issue-2-3440518/)//Babcii

Voting Rights.Senate Majority Leader Chuck **Schumer** (D-NY) **indicated last week that the Senate will take up voting rights legislation today** rather than his self-imposed deadline of yesterday due to COVID-19 and the snowstorm in DC. The voting rights megabill[3]will most likely fail given vocal opposition to changing filibuster rules from Senators Joe Manchin (D-WV) and Kyrsten Sinema (D-AZ). It remains to be seen whether changing the Electoral Count Act instead, which has both some Democratic and Republican support, will be pursued. Budget and Appropriations.The four top Democratic and Republican House and Senate Appropriations leaders (the two chairs and two ranking members) met last week to discuss the **FY22 omnibus** spending package. While the appropriations leaders from both parties indicated it was productive to meet, it **does not appear that they made any substantial progress** that would guarantee an omnibus passing before the current continuing resolution ends on February 18. There have also been discussions of passing another COVID-19 relief bill paired with disaster aid funding, but it remains to be seen whether there will be enough bipartisan support for that.

#### UQ ev concedes talks are going nowhere AND that pubs kill it

Gould 1/21 [Joe Gould is senior Pentagon reporter for Defense News, “Defense industry frets as **funding talks crawl**”, 1/21/2022, https://www.defensenews.com/congress/budget/2022/01/21/defense-industry-frets-as-funding-talks-crawl/]

Despite repeated warnings from uniformed Pentagon leaders and lawmakers of both parties that a full-year continuing resolution will hurt national security, some defense industry advocates are still worried about an impasse. On Thursday, both chambers of Congress left town on recess until the week of Jan. 31, after making scant progress on a deal for an omnibus federal spending package. Amid partisan divisions over funding levels and policy provisions, House Speaker Nancy Pelosi, D-N.Y., warned that a full-year CR would create a national security crisis ― in an effort to pressure Republicans. “It is a national security issue of the highest priority, with the threats that exist out there. To go to a continuing resolution instead of a decision-making omnibus bill is to weaken our security and our stability,” Pelosi told reporters Thursday. “The Republicans should know that, so we hope we will be able to bring that legislation to the floor before [the current CR] expires.” With fiscal 2022 spending bills four months overdue, lawmakers and the Pentagon have warned against a yearlong CR that would freeze defense spending at the level of 2021 appropriations. CRs continue funding at the previous year’s level, preventing the Pentagon from starting new acquisition programs and ramping up production quantities. And without a 2022 spending deal to set a new baseline, the president’s budget submission is in limbo and expected to come months late, which is sowing uncertainty for the military and its vendors. President Joe Biden signed a defense policy bill that boosts his $753 billion national defense budget request for FY22 to $778 billion, a 3% increase. But Republicans have said they want more for defense, less than the 16% increase proposed by Democrats and an agreement on some politically charged policy riders. By the reckoning of National Defense Industrial Association Chairman Arnold Punaro, lawmakers could **meet somewhere in the middle** with 8% increases for both defense and nondefense, but that’s far from a certainty. Democrats have raised fears some Republicans see budget gridlock as an advantage heading into midterm elections and don’t want a deal at all. “**We’re still in budget chaos**,” Punaro told Defense News this week. “China’s on the march, Russia’s on the move and North Korea’s on the advance, and yet **Congress is sitting on their duff**, not passing a spending bill. It’s disgraceful.” The lack of a 2022 deal as a baseline for defense amid escalating inflation presents a huge challenge for Pentagon planners crafting the FY23 budget request, Punaro said. He worried the administration could make a flat budget request, potentially costing the Pentagon billions of dollars in buying power. Meanwhile, a full-year CR would yield $11 billion of lost growth, while 7% inflation would mean another $50 billion in lost buying power, according to defense consultant Jim McAleese, the founder of McAleese & Associates. Though the current CR runs out on Feb. 18., recent negotiations in Congress have sparked some optimism. Lead appropriators in the Senate met Jan. 13 with Senate Majority Leader Chuck Schumer and Senate Minority Leader Mitch McConnell to set the guidelines for negotiations. From there, lead House and Senate appropriators met to kick off talks, and Pelosi has said she’s been in discussions with House Appropriations Committee Chairwoman Rosa DeLauro, D-Conn. Asked Thursday whether it’s realistic to get an agreement by Feb. 18, as Congress was about to leave town Senate Appropriations Committee Vice Chairman Richard Shelby, R-Ala., said: “That’s a good question. It’d be hard to get it by the 18th, but if we can make huge progress, we can probably get done soon.” It’s unclear whether looming international crises with Russia and Ukraine, China and Taiwan, and North Korean missile tests would add pressure to pass defense spending. When asked about Pelosi’s comments, Shelby seemed to dig in. “She’s right on that, but to underfund defense as some people would like to do, that would be a bigger challenge,” he said. At a House Appropriations Committee hearing Jan. 12 about the effects of a potential full-year CR, the top officers of the Army, Navy, Air Force, Marine Corps and Space Force warned such a move would sabotage the military’s efforts to compete with China by stalling new weapons like hypersonic missiles. “CRs effectively prevent modernization at speed,” said Marine Corps Commandant Gen. David Berger. “We actually stand to be outpaced by China — not because of their speed but because of our failure to comply with our own budgetary processes.” The president and CEO of the Aerospace Industries Association, Eric Fanning, has warned that budget unpredictability is inefficient for the defense industry, which has to idle while the Pentagon waits for its projects to be funded. Amid the Capitol Hill activity, Fanning said he is “hopeful that the momentum continues.” “The hearing painted a concerning picture of additional and unnecessary costs, as well risks to capabilities and to the industrial base in the short and long-terms. There was bipartisan agreement on how devastating a year-long CR could be,” Fanning said in a statement Thursday. “Over the last few days, there are positive signs that the message is getting through and the top appropriators from both parties are coming to the table.” Lead Pentagon officials have talked for years about the need to harness the innovation of small tech firms. But CRs stifle those efforts, an executive at one of those firms, Anduril Industries, wrote in an essay this week.

#### Plan is bi-part

Weeden 5/10Brian Weeden (Brian Weeden is the director of program planning for the Secure World Foundation, a nonprofit dedicated to the long-term sustainable use of space for benefits on Earth. He is a former U.S. Air Force officer and is a partner in Lquinox Consulting, LLC., ), 5-10-2021, "Op-ed", SpaceNews, https://spacenews.com/op-ed-getting-serious-about-the-office-of-space-commerce/ jt

Over the last few years, OSC has emerged as a key agency supporting the U.S. commercial space sector. Current U.S. law and national space policy designates OSC as the lead agency for representing and promoting commercial perspectives within interagency discussions, developing a civil space situational awareness pilot program that improves our ability to detect and prevent on-orbit collisions, modernizing the regulation and oversight of commercial space activities, and promoting the U.S. commercial space sector globally. All of these lines of effort are critical to ensuring that the commercial space sector continues to grow and provide the innovation and new capabilities that support U.S. national security, economic development, and societal benefits. OSC was originally created in 1988 with goals of promoting the commercialization of space and the U.S. commercial space sector. But for most of its existence it did not receive much attention, and by the end of 2016 it had a permanent staff of three people and an annual budget of $500,000. This changed dramatically under the Trump administration. In July 2018, Kevin O’Connell was brought in as the new director of OSC, a position that had not been filled for several years and was given significant political support from the Secretary of Commerce and the White House to begin to rebuild the office toward the original vision. Under O’Connell’s leadership, additional staff was added and complemented by “loans” of expertise from across the department. The office was empowered by administration leadership to not only take on the mantle of acting as the advocate for commercial space within the U.S. government but also to help lead the modernization of U.S. government oversight and regulation of private sector space activities. This leadership role has bipartisan roots. Following the 2010 National Space Policy, the Obama administration started efforts to update export controls, reform licensing of commercial remote sensing, and establish a national space traffic management (STM) regime. Additionally, there was a push to establish “mission authorization” to address the gap between existing regulatory powers and the innovative new missions that the commercial sector was developing. Some of these efforts were more successful than others, and some were intended to go to the Department of Transportation instead of Commerce, but there was significant agreement on the core problems that need to be solved. Under the Trump administration, significant progress was made on these same goals. Space Policy Directive 3 (SPD-3) created the first formal U.S. policy on STM and cemented the role of OSC in taking on the responsibility for creating civil space situational awareness capabilities and creating the foundation for a future STM regime. OSC also played a significant role in implementing an overhaul of commercial remote sensing regulations and greatly increased its outreach and engagement with the commercial space sector. And after two years of discussion, OSC was able to convince Congress to authorize and fund a pilot program for civil SSA in December 2020. The U.S. space industry was widely supportive of these enhanced roles for OSC. The Need for Action Unfortunately, many of these changes were not formalized before the change of administration. OSC was not elevated into a separate bureau, and instead was left within the National Oceanic and Atmospheric Administration (NOAA) and thus vulnerable to reversion once the top-down political push disappeared and the existing organizational inertia took over. That reversion is understandable, given NOAA’s important focus on Earth remote sensing, but also frustrating given the long and meandering process over the last decade to try and implement civil SSA, STM, and mission authorization to address widely-recognized challenges. As it stands, OSC may still muddle through the civil SSA pilot program but is unlikely to achieve the other policy goals and directives assigned to it. Those goals — promoting commercial space, acting as its champion within the government, fostering development of commercial standards and norms of behavior, and addressing regulatory gaps — require political will to finish implementing the expanded vision for OSC. Another key is continuing the push to move OSC out from underneath NOAA and into a separate Bureau, which is necessary for it to have the independence it needs to establish a new organizational culture and capacity. The Biden administration needs to act quickly to address this situation before it is too late. Key nonpolitical staff who were instrumental in developing and implementing the vision for a revitalized OSC are already leaving, just as the civil SSA pilot program is finally getting underway. The new leadership at the Department of Commerce needs to first and foremost halt additional changes and move with utmost speed to appoint a new director of OSC. That director needs to be empowered to continue the work started over the two previous administrations and now enshrined in the 2020 U.S. National Space Policy. Fully meeting this vision will likely mean continuing to push for the creation of a separate Bureau of Space Commerce. There has been strong bipartisan support over the last two administrations that we need to modernize the way that the U.S. government supports and oversees commercial space activities. Increasing the promotion of commercial perspectives within interagency discussions and globally, developing civil space situational awareness capabilities, and laying the foundation for space traffic management are key elements of this modernization. OSC has made significant strides toward implementing these new roles and we cannot afford more delays.

### 2AC --- Cyber !

#### No risk of cyber escalation

Caylor 2-1-16 [Mathew. “The Cyber Threat to Nuclear Deterrence” 2/1/16 <http://warontherocks.com/2016/02/the-cyber-threat-to-nuclear-deterrence/> //GBS-JV]

The perception that cyber threats will ultimately undermine the relevance or effectiveness of nuclear deterrence is flawed in at least three keys areas. First among these is the perception that nuclear weapons or their command and control systems are similar to a heavily defended corporate network. The critical error in this analogy is that there is an expectation of IP-based availability that simply does not exist in the case of American nuclear weapons — they are not online. Even with physical access, the proprietary nature of their control system design and redundancy of the National Command and Control System (NCCS) makes the possibility of successfully implementing an exploit against either a weapon or communications system incredibly remote. Also, whereas the cyber domain is characterized by significant levels of risk due to a combination of bias toward automated safeguards and the liability of single human failures, nuclear weapon safety and surety are predicated on balanced elements of stringent human interaction and control. From two-person integrity in physical inspections and loading, to the rigorous mechanisms and authority required for weapons release, human beings serve as a multi-factor safeguard while retaining the ultimate role to protect the integrity of nuclear deterrence against cyber threats. To a large degree, the potential vulnerabilities caused by wireless communications and physical intrusions into areas holding nuclear material are already mitigated via secure communications that are not linked to the outside and multiple layers of physical security systems. While there has been a great deal of publicity surrounding the Y-12 break-in of 2012, the truth is that the three people involved never got near any nuclear material or technology. Without state-level resourcing in the billions of dollars, the technical sophistication required to pursue a Stuxnet-like attack against nuclear weapons is most likely beyond the capability of even the most gifted group of hackers. For all intents, this excludes terrorist organizations and cyber criminals from the field of threats and restricts it to those nations that already possess nuclear weapons. Nuclear-weapon states, however, have the full-spectrum cyber threat capability referenced in the Defense Science Board report and would most likely be influenced by an understanding of the elements of classic nuclear deterrence strategy. In the case of first strike, no cyber weapon could be expected to perform at a rate higher than any conventional anti-nuclear capability (i.e., not 100 percent effective). Therefore, an adversary’s nuclear threat would be perceived to endure, thereby negating and dissuading the effort to use and employ a cyber weapon against an adversary’s nuclear force. Additionally, just as missile defense systems have been historically controversial due to perceived destabilizing effects, it is reasonable to conclude that these nuclear-weapon states would view the attempt to deploy a cyber capability against their nuclear stockpiles from a similar perspective. Finally, the very existence of nuclear weapons is often enough to alter the risk analysis of an adversary. With virtually no chance of remote or unauthorized detonation (which would be the desired results of a sabotage event), the most probable cyber threat to any nuclear stockpile is that of espionage. Attempted cyber intrusions at the U.S. National Nuclear Security Agency (NNSA) and its efforts to bolster cybersecurity initiatives provide clear evidence that this is already underway. However, theft of design information or even more robust intelligence on the location of stored nuclear weapons cannot eliminate the potential destruction that even a handful of nuclear weapons can bring to an adversary. Knowledge alone, particularly the imperfect knowledge that cyber espionage is likely to offer, is incapable of drastically altering an adversary’s risk calculus. In fact, quite the opposite is true. An adversary with greater understanding of the nuclear capabilities of a rival is forced to consider courses of action to prevent escalation, potentially increasing the credibility of a state’s nuclear deterrence. Despite the growing sophistication in cyber capabilities and the willingness to use them for espionage or in concert with kinetic attack, the strategic value of nuclear weapons has not been diminished. The insulated architecture combined with a robust and redundant command-and-control system makes the existence of any viable cyber threat of exploitation extremely low. With the list of capable adversaries limited by both funding and motivation, it is highly unlikely that any nation will possess, or even attempt to develop, a cyber weapon sufficient to undermine the credibility of nuclear weapons. In both psychological and physical terms, the threat of the megabyte will never possess the ability to overshadow the destructive force of the megaton. Although the employment of cyberspace for military effect has brought new challenges to the international community, the role of nuclear weapons and their associated deterrence against open and unconstrained global aggression are as relevant now as they were in the Cold War.

# 1AR

## CP

### 1AR --- Solve NB

#### Yes we solve solve the net benefit! --- The OST principles that the plan is based on and enshrines ARE PROTECTION OF FUTURE GENERATIONS!! --- We have a card too! --- If we win spillover from the aff then it solves

Rhimbassen and Rapp, 21 (Maria Lucas-Rhimbassen and Lucien Rapp, Research Fellow with Open Lunar & PhD Candidate in Space Law at the University of Toulouse and CNES. Member of the IISL and an associate member of the ABA Committee on Space Law., Professor Rapp is one of the French leading experts on international business law and international regulatory matters, with a focus on ICT, Feb 2021, accessed on 9-26-2021, Acta Astronautica, "Competitive space foresight: Incentivizing compliance through antitrust", <https://www.sciencedirect.com/science/article/abs/pii/S0094576521004550)//Babcii>

This backdrop illustrates antitrust issues according to which the future of the space ecosystem can unfold as an oligopolistic or monopolistic scenario, where **giant corporations fight** each other **through unfair competition practices** to seize market shares and enforce their own technical standards and rules of the road, **unless regulation prevents them to do so. This could result into a race to the bottom situation**, in a perceived zero-sum world, which is known as toxic competition, highly unsustainable.

While this paper posits that space antitrust must be depoliticized to avoid national partiality and ensure predictability, the need to intervene somehow remains owing to the fact that space antitrust is not an end in itself, but must serve a higher purpose, such as **the benefit of all humankind and other higher ethical principles as enshrined within international space law**. The meaning sought by such an agenda must, therefore, be ensured through a proper governance system, which can be composed of both a top-down hard law approach, in addition to concurring bottom-up soft law initiatives and self-regulatory incentives based on a series of compliance mechanisms to be determined, multilaterally. In that sense, space can be interpreted as a purposeful market to be channeled through “noble” competition, which is a new academic movement considering antitrust as a force leading to a race to the top, if granted the right instruments. **This is uncharted legal territory**, and the space arena is the appropriate testing field to start such a new framework from scratch. Indeed, enforcing a new “noble” **space antitrust, based on** the higher ethical **principles of international space law (e.g., peace, equality, freedom, duty to assist, benefit sharing, due regard, noninterference, equitable distribution, transparency, etc.) can** ensure the perennialism of space law, preclude monopolistic excess and abuse of a dominant position while maintaining a high level of security and safety in terms of STM standards and best practices since competition law in space, based on a “noble” space antitrust framework, is destined to **lead the sector in the collaborative and constructive dynamic of a “race to the top” [28].**

#### The ev they read specific to “space” proves this! --- It’s in context OF THE OST and says their norms need to be adopted for the “future of humanity” (JCCC Green)

Tan 2k [David Tan, LL.M., Harvard Law School; LL.B. (Hons), B.Com., University of Melbourne. Former Tutor in Law, Trinity College, University of Melbourne. Towards a New Regime for the Protection of Outer Space as the "Province of All Mankind". 2000. https://pdfs.semanticscholar.org/16cd/f9b063cae68c037ec9dab376c08496e43a32.pdf]

Edith Brown Weiss has advanced the theory of “intergenerational equity,” which provides for generational rights and obligations.158 Her thesis consists of a normative framework of intersecting theories of intergenerational and intragenerational equity that are derived from an underlying planetary trust, embodying the notion that generations act as stewards to sustain the welfare and well-being of all generations. This planetary trust obliges “each generation to preserve the diversity of the resource base and to pass the planet to future generations in no worse condition than it receives it.”159 The principle of the conservation of options requires each generation “to conserve the diversity of the natural and cultural resource base, so that it does not unduly restrict the options available to future generations in solving their problems and satisfying their own values, and should be entitled to diversity comparable to that enjoyed by previous generations.”\*60 The theory of intergenerational equity is an appealing one. Unfortunately, Weiss’s model generally rests upon an intertemporal human rights model for preserving the global environment. This presents many problems, ranging from the questionable existence of the right to a decent environment to the issue of remedies in respect of claims made by future generations against present generations.161

Whether the global awareness of the harm to our sense of intergenerational identity, as evidenced by the various U.N. General Assembly resolutions and numerous international conventions, will be sufficient to mobilize the implementation and enforcement of effective legal measures on behalf of future generations is doubtful. But more importantly, the notions of intergenerational identity and sustainable development will prove to be invaluable concepts in framing the discussion in Part VI.

Current literature has concentrated on the notion of sustainable development as involving the integration of economic and environmental considerations at all levels of decision-making.162 But the outer-space environment has been largely ignored, as if it were simply economic development on Earth that must be environmentally sound. There is no reason, however, why the precautionary principles that emerge from the concept of sustainable development in the Stockholm Declaration, the Rio Declaration, and the World Charter for Nature should not apply equally to the outer-space environment. Few states, if any, will take issue with the proposition that the exploration and use of outer space should be sustainable. It is in the common interest of all states, whether spacefaring or otherwise, to subscribe to a regime that allows for the development of space activities in a manner that leaves the space environment in a substantially unimpaired condition for future generations. One might even ultimately find that the uniqueness and vulnerability of the outer-space environment demand that the international community as a whole recognize sustainable development as a “global ethic”163 that transcends terrestrial boundaries, as a peremptory norm that prohibits “policies and practices that support current living standards by depleting the productive base, including natural resources, and that leaves future generations with poorer prospects and greater risks than our own.”164 We should not confine our actions to those we are now able to determine as directly or indirectly benefiting ourselves or our descendants. On the contrary, we should “cultivate our natural sense of obligation not to act wastefully or wantonly even when we cannot calculate how such acts would make any present or future persons worse off.”165 It seems impossible to find universally agreed-upon limits on the freedom of exploration and use of outer space. Rather than focus on indeterminate rules of custom-formation, we should concentrate on establishing fair and workable arrangements and institutions that can successfully accommodate the competing interests of all nations. With these guidelines in mind, we will now examine new methods of treaty-making that will enhance the willingness of states to participate in an environmental program that seeks to achieve an acceptable balance between pollution control and freedom of space exploration.

### 1AR --- T/F S/D

#### Its LONG

Chism 5 [Chism, National Archives education specialist, 2005, The constitutional amendment process.(teaching content). Kahlil Social Education 69.7 (Nov-Dec 2005): p373(9)]

Even though the steps can be described briefly, actual ratification can take much longer. Some amendments, such as the 27th (Congressional pay increases), took many years to complete the ratification process. It was proposed by James Madison in 1789, but not ratified until 203 years later. This amendment required that any change in the salary of members of Congress only take effect after the next general election (so lawmakers were not voting to increase their own salaries). Congress ratified other amendments in short order, such as the 18th (Prohibition), which took little more than a year. The length of time depends upon the gravity of the issue the amendment is intended to address, the intensity of public sentiment concerning the issue, and whether or not a time limit for ratification was written into the amendment during the proposal stage.

### 1AR --- Circumvention S/D

#### The Counterplan can’t solve any of the case – The Courts will stick to precedent

Stanley Fish, Floersheimer Distinguished Visiting Professor at the Benjamin N. Cardozo School of Law, “Why Bother With the Constitution?”, May 10th 2010, http://opinionator.blogs.nytimes.com/2010/05/10/why-bother-with-the-constitution/

It’s Supreme Court nomination time again, which means that it will soon be nomination hearing time, which means that Elena Kagan will soon be asked how she believes the Constitution should be interpreted. But just in time comes a new book — “The Living Constitution,” by David A. Strauss — that tells us not to bother about that question because, odd though it might seem, the Constitution **does not** play a central role in constitutional interpretation. In the majority of instances, Strauss argues, “the text of the Constitution will play, at most, a ceremonial role.” Even “**when a case involves the Constitution**, the text routinely gets no attention,” for “on a day-to-day basis, American constitutional law **is about precedents**, and when precedents leave off, it is about commonsense notions of fairness and good policy.” Although rhetorically we have a constitutional legal system — one constrained by a command given in the past and embodied in a sacred text — in fact, Strauss contends, we have a common-law legal system “built not on an authoritative, foundational . . . text,” but out of “precedents and traditions that accumulate over time” and serve as a constraint on “transient public opinion.” To some extent, Strauss is right. Day to day the courts view (and configure) the facts and issues of a case in the light of previously established “landmark” decisions; the words of the Constitution are often not invoked. At least descriptively, the history of constitutional interpretation would seem to proceed as Strauss says it does, by a process of “evolutionary accretion” and not by an act of fidelity to an original intention, that is, to an intelligent design.