I negate resolved – the appropriation of space by private entities is unjust

I value justice as the resolution asks us to determine whether private space appropriation is unjust

My value criterion is maximizing expected well being: Prefer

#### 1] Governments use my value criterion in the real word

Goodin states

[Robert Goodin, Fellow in Philosophy @ Australian National Defense University, THE UTILITARIAN RESPONSE]

My larger argument turns on the proposition that there is something special about the situation of public officials that makes utilitarianism more probable for them than private individuals. Before proceeding with the large argument, I must therefore say what it is that makes it so special about public officials and their situations that make it both more necessary and more desirable for them to adopt a more credible form of utilitarianism. Consider, first, the argument from necessity. Public officials are obliged to make their choices under uncertainty, and uncertainty of a very special sort at that. All choices – public and private alike – are made under some degree of uncertainty, of course. But in the nature of things, private individuals will usually have more complete information on the peculiarities of their own circumstances and on the ramifications that alternative possible choices might have for them. Public officials, in contrast, are relatively poorly informed as to the effects that their choices will have on individuals, one by one. What they typically do know are generalities: averages and aggregates. They know what will happen most often to most people as a result of their various possible choices, but that is all. That is enough to allow public policy-makers to use the utilitarian calculus – assuming they want to.

#### 2] Pain and pleasure are intrinsically valuable.

### C2: Space Colonies

#### Space colonies are coming now, but private companies are key --- government-led programs must prioritize space-for-earth ventures

Weinzierl and Sarang 21

[Matt Weinzierl and Mehak Sarang, 2-12-2021, "The Commercial Space Age Is Here," Harvard Business Review, https://hbr.org/2021/02/the-commercial-space-age-is-here]

There’s no shortage of hype surrounding the commercial space industry. But while tech leaders promise us moon bases and settlements on Mars, the space economy has thus far remained distinctly local — at least in a cosmic sense. Last year, however, we crossed an important threshold: For the first time in human history, humans accessed space via a vehicle built and owned not by any government, but by a private corporation with its sights set on affordable space settlement. It was the first significant step towards building an economy both in space and for space. The implications — for business, policy, and society at large — are hard to overstate. In 2019, [95%](https://brycetech.com/reports) of the estimated $366 billion in revenue earned in the space sector was from the space-for-earth economy: that is, goods or services produced in space for use on earth. The space-for-earth economy includes telecommunications and internet infrastructure, earth observation capabilities, national security satellites, and more. This economy is booming, and though [research shows](https://hbsp.harvard.edu/product/716037-PDF-ENG) that it faces the challenges of overcrowding and monopolization that tend to arise whenever companies compete for a scarce natural resource, [projections for its future](https://hbsp.harvard.edu/product/720027-PDF-ENG) are optimistic. Decreasing costs for launch and space hardware in general have enticed new entrants into this market, and companies in a variety of industries have already begun leveraging satellite technology and access to space to drive innovation and efficiency in their earthbound products and services. In contrast, the space-for-space economy — that is, goods and services produced in space for use in space, such as mining the Moon or asteroids for material with which to construct in-space habitats or supply refueling depots — has struggled to get off the ground. As far back as the 1970s, [research](https://ntrs.nasa.gov/citations/19780004167) commissioned by NASA predicted the rise of a space-based economy that would supply the demands of hundreds, thousands, even millions of humans living in space, dwarfing the space-for-earth economy (and, eventually, the entire terrestrial economy as well). The realization of such a vision would change how all of us do business, live our lives, and govern our societies — but to date, we’ve never even had more than [13 people](https://www.space.com/6503-population-space-historic-high-13.html) in space at one time, leaving that dream as little more than science fiction. Today, however, there is reason to think that we may finally be reaching the first stages of a true space-for-space economy. SpaceX’s [recent achievements](https://www.nasa.gov/press-release/nasa-s-spacex-crew-1-astronauts-headed-to-international-space-station/) (in cooperation with NASA), as well as upcoming efforts by [Boeing](https://www.nasa.gov/feature/boeing-s-starliner-makes-progress-ahead-of-flight-test-with-astronauts), [Blue Origin](https://www.blueorigin.com/news/nasa-selects-blue-origin-national-team-to-return-humans-to-the-moon), and [Virgin Galactic](https://spacenews.com/virgin-galactic-prepares-to-transition-to-operations) to put people in space sustainably and at scale, mark the opening of a new chapter of spaceflight led by private firms. These firms have both the intention and capability to bring private citizens to space as passengers, tourists, and — eventually — settlers, opening the door for businesses to start meeting the demand those people create over the next several decades with an array of space-for-space goods and services. Welcome to the (Commercial) Space Age In our [recent research](https://www.hbs.edu/faculty/Publication%20Files/jep.32.2.173_Space,%20the%20Final%20Economic%20Frontier_413bf24d-42e6-4cea-8cc5-a0d2f6fc6a70.pdf), we examined how the model of centralized, government-directed human space activity born in the 1960s has, over the last two decades, made way for a new model, in which public initiatives in space increasingly share the stage with private priorities. Centralized, government-led space programs will inevitably focus on space-for-earth activities that are in the public interest, such as national security, basic science, and national pride. This is only natural, as expenditures for these programs must be justified by demonstrating benefits for citizens — and the citizens these governments represent are (nearly) all on earth. In contrast to governments, the private sector is eager to put people in space to pursue their own personal interests, not the state’s — and then supply the demand they create. This is the vision driving SpaceX, which in its first twenty years has entirely upended the rocket launch industry, securing 60% of the global commercial launch market and building ever-larger spacecraft designed to ferry passengers not just to the International Space Station (ISS), but also to its own promised [settlement on Mars](https://www.spacex.com/media/making_life_multiplanetary_transcript_2017.pdf). Today, the space-for-space market is limited to supplying the people who are already in space: that is, the handful of astronauts employed by NASA and other government programs. While SpaceX has grand visions of supporting large numbers of private space travelers, their current space-for-space activities have all been in response to demand from government customers (i.e., NASA). But as decreasing launch costs enable companies like SpaceX to leverage economies of scale and put more people into space, growing private sector demand (that is, tourists and settlers, rather than government employees) could turn these proof-of-concept initiatives into a sustainable, large-scale industry. This model — of selling to NASA with the hopes of eventually creating and expanding into a larger private market — is exemplified by SpaceX, but the company is by no means the only player taking this approach. For instance, while SpaceX is focused on space-for-space transportation, another key component of this burgeoning industry will be manufacturing. [Made In Space, Inc.](https://madeinspace.us/capabilities-and-technology/archinaut/) has been at the forefront of manufacturing “in space, for space” since 2014, when it 3D-printed a wrench onboard the ISS. Today, the company is exploring other products, such as high-quality fiber-optic cable, that terrestrial customers may be willing to pay to have manufactured in zero-gravity. But the company also recently received a [$74 million contract](https://www.nasa.gov/press-release/nasa-funds-demo-of-3d-printed-spacecraft-parts-made-assembled-in-orbit) to 3D-print large metal beams in space for use on NASA spacecraft, and future private sector spacecraft will certainly have similar manufacturing needs which Made In Space hopes to be well-positioned to fulfill. Just as SpaceX has begun by supplying NASA but hopes to eventually serve a much larger, private-sector market, Made In Space’s current work with NASA could be the first step along a path towards supporting a variety of private-sector manufacturing applications for which the costs of manufacturing on earth and transporting into space would be prohibitive. Another major area of space-for-space investment is in building and operating space infrastructure such as habitats, laboratories, and factories. Axiom Space, a current leader in this field, recently [announced](https://www.theverge.com/2021/1/26/22250327/space-tourists-axiom-private-crew-iss-price) that it would be flying the “first fully private commercial mission to space” in 2022 onboard SpaceX’s Crew Dragon Capsule. Axiom was also [awarded](https://spacenews.com/nasa-selects-axiom-space-to-build-commercial-space-station-module/) a contract for exclusive access to a module of the ISS, facilitating its plans to develop modules for commercial activity on the station (and eventually, beyond it). This infrastructure is likely to spur investment in a wide array of complementary services to supply the demand of the people living and working within it. For example, in February 2020, Maxar Technologies was awarded a [$142 million contract](https://www.builtincolorado.com/2020/02/03/maxar-technologies-142m-nasa-contract) from NASA to develop a robotic construction tool that would be assembled in space for use on low-Earth orbit spacecraft. Private sector spacecraft or settlements will no doubt have need for a variety of similar construction and repair tools. And of course, the private sector isn’t just about industrial products. Creature comforts also promise to be an area of rapid growth, as companies endeavor to support the human side of life in the harsh environment of space. In 2015, for example, [Argotec and Lavazza](https://www.lavazza.com/en/about-us/media-centre/isspresso-successfully-completes-the-mission-coffee-in-space.html) collaborated to build an espresso machine that could function in the zero-gravity environment of the ISS, delivering a bit of everyday luxury to the crew. To be sure, people have dreamt of using the vacuum and weightlessness of space to source or make things that cannot be made on earth for half a century, and time and again the business case has failed to pan out. Skepticism is natural. Those failures, however, have been in space-for-earth applications. For example, two startups of the 2010s, [Planetary Resources, Inc.](https://store.hbr.org/product/planetary-resources-inc-property-rights-and-the-regulation-of-the-space-economy/717053) and [Deep Space Industries](https://spacenews.com/deep-space-industries-acquired-by-bradford-space/), recognized the potential of space mining early on. For both companies, however, the lack of a space-for-space economy meant that their near-term survival depended on selling mined material — precious metals or rare elements — to earthbound customers. When it became clear that demand was insufficient to justify the high costs, funding dried up, and both companies pivoted to other ventures. These were failures of space-for-earth business models — but the demand for in-space mining of raw building material, metals, and water will be enormous once humans are living in space (and are therefore far cheaper to supply). In other words, when people are living and working in space, we are likely to look back on these early asteroid mining companies less as failures and more as simply [ahead of their time](https://interestingengineering.com/asteroid-mining-to-shape-the-future-of-our-wealth). Seizing the Space-for-Space Opportunity The opportunity presented by the space-for-space economy is huge — but it could easily be missed. To seize this moment, policymakers must provide regulatory and institutional frameworks that will enable the risk-taking and innovation necessary for a decentralized, private-sector-driven space economy. There are three specific policy areas we believe will be especially important: 1. Enabling private individuals to take on greater risk than would be tolerable for government-employed astronauts. First, as part of a general shift to that more decentralized, market-oriented space sector, policymakers should consider allowing private space tourists and settlers to voluntarily take on more risk than states would tolerate for government-employed astronauts. In the long run, ensuring high safety levels will be essential to convince larger numbers of people to travel or live in space, but in the early years of exploration, too great an aversion to risk will stop progress before it starts. An instructive analogy can be found in how NASA works with its [contractors](https://arstechnica.com/science/2017/07/elon-musk-knows-whats-ailing-nasa-costly-contracting/): In the mid-2000s, NASA shifted from using cost-plus contracts (in which NASA shouldered all the economic risk of investing in space) to fixed-price contracts (in which risk was distributed between NASA and their contractors). Because of private companies’ greater tolerance for risk, this shift catalyzed a burst of activity in the sector — sometimes referred to as “[New Space](http://satellitemarkets.com/news-analysis/opportunities-emerging-new-space).” A similar shift in how we approach voluntary risk-taking by private-sector astronauts may be necessary in order to launch the space-for-space economy. 2. Judiciously implementing government regulation and support. Second, as with most markets, developing a stable space economy will depend on judicious government regulation and support. NASA and the U.S. Commerce and State Departments’ [recent recommitment](https://spacepolicyonline.com/news/space-council-gets-human-spaceflight-strategy-report/) to “create a regulatory environment in [low-Earth orbit] that enables American commercial activities to thrive” is a good sign that the government is on a path of continued collaboration with industry, but there’s still a long way to go. Governments should start by clarifying how property rights over limited resources such as water on Mars, ice on the Moon, or orbital slots (i.e., “parking spots” in space) will be governed. Recent steps — including NASA’s [offer](http://www.parabolicarc.com/2020/09/10/nasa-wants-to-buy-lunar-soil-samples-from-private-companies/) to purchase lunar soil and rocks, last April’s [Executive Order](https://www.whitehouse.gov/presidential-actions/executive-order-encouraging-international-support-recovery-use-space-resources/) on the governance of space resources, and the 2015 [Commercial Space Launch Competitiveness Act](https://www.congress.gov/bill/114th-congress/house-bill/2262/text) — indicate that the U.S. government is interested in establishing some form of regulatory framework to support the economic development of space. In 2017, Luxembourg became the first European country to [establish a legal framework](https://www.mining.com/luxembourg-becomes-first-european-country-pass-space-mining-law/) securing private rights over resources mined in space, and similar steps have been taken at the domestic level in [Japan](https://www.japantimes.co.jp/news/2020/11/06/national/science-health/japan-bill-space-samples/#:~:text=The%20bill%20calls%20for%20allowing,companies%20to%20enter%20the%20field.) and the [United Arab Emirates](https://spacewatch.global/2020/02/uae-space-law-details-announced-to-facilitate-space-sector-development/). Moreover, nine countries (though Russia and China are notably missing) have signed the [Artemis Accords](https://www.nasa.gov/specials/artemis-accords/index.html), which lay out a vision for the sustainable, international development of the Moon, Mars, and asteroids. These are important first steps, but they have yet to be clearly translated into comprehensive treaties that govern the fair use and allocation of scarce space resources among all major spacefaring nations. In addition, governments should continue to fill the financial gaps in the still-maturing space-for-space economic ecosystem by funding basic scientific research in support of sending humans to space, and by providing contracts to space startups. Similarly, while excessive regulation will stifle the industry, some government incentives, such as policies to reduce space debris, can help reduce the costs of operating in space for everyone in ways that would be difficult to coordinate independently. 3. Moving beyond geopolitical rivalries. Finally, the development of the space-for-space economy must not be undermined by earthly geopolitical rivalries, such as that between the United States and China. These conflicts will unavoidably extend into space at least to some extent, and military demand has long been an important source of funding for aerospace companies. But if not kept in check, such rivalries will not only distract attention and resources from borderless commercial pursuits but also create barriers and risks that hamper private investment. On earth, private economic activity has long tied together people whose states are at odds. The growing space-for-space economy offers exceptional potential to be such a force for unity — but it’s the job of the world’s governments [not to get in the way](https://www.theatlantic.com/technology/archive/2020/07/space-warfare-unregulated/614059/). A collaborative, international approach to establishing — and enforcing — the rule of law in space will be essential to encouraging a healthy space-for-space economy. Visions of a space-for-space economy have been around since the dawn of the Space Age in the 1960s. Thus far, those hopes have gone largely unmet — but this moment is different. For the first time in history, the private sector’s capital, risk tolerance, and profit motive are being channeled into putting people in space. If we seize this opportunity, we will look back on 2020 as the year when we started the truly transformational project of building an economy and a society in space, for space.

#### Space colonies are key to prevent extinction

Oberg 99

[James Oberg, space writer and a former space flight engineer based in Houston, 1999, Space Power Theory, http://www.jamesoberg.com/books/spt/new-CHAPTERSw\_figs.pdf]

We have the great gift of yet another period when our nation is not threatened; and our world is free from opposing coalitions with great global capabilities. We can use this period to take our nation and our fellow men into the greatest adventure that our species has ever embarked upon. The United States can lead, protect, and help the rest of [hu]mankind to move into space. It is particularly fitting that a country comprised of people from all over the globe assumes that role. This is a manifest destiny worthy of dreamers and poets, warriors and conquerors. In his last book, Pale Blue Dot, Carl Sagan presents an emotional argument that our species must venture into the vast realm of space to establish a spacefaring civilization. While acknowledging the very high costs that are involved in manned spaceflight, Sagan states that our very survival as a species depends on colonizing outer space. Astronomers have already identified dozens of asteroids that might someday smash into Earth. Undoubtedly, many more remain undetected. In Sagan’s opinion, the only way to avert inevitable catastrophe is for mankind to establish a permanent human presence in space. He compares humans to the planets that roam the night sky, as he says that humans will too wander through space. We will wander space because we possess a compulsion to explore, and space provides a truly infinite prospect of new directions to explore. Sagan’s vision is part science and part emotion. He hoped that the exploration of space would unify humankind. We propose that mankind follow the United States and our allies into this new sea, set with jeweled stars. If we lead, we can be both strong and caring. If we step back, it may be to the detriment of more than our country.

#### Colonies solve overcrowding

Bloomfield 06

[National Space Society, Book Review: The High Frontier: Human Colonies in Space, Masse Bloomfield, 2006, http://www.nss.org/resources/books/non\_fiction/review\_008\_highfrontier.html]

O'Neill's solution in 1976 was “We now have the technological ability to set up large communities in space — communities in which manufacturing, farming, and all other human activities could be carried out.” In a caption under the famous drawing of an O'Neill cylinder it says, “Human colonies in space — not a luxury, but a necessity. Earth is overcrowded, running out of raw materials, in desperate need of a growing energy supply, and being ecologically destroyed. The problems are worse with each passing day, and there are no solutions to be found on Earth itself. Mankind's destiny — its very survival — is in space.… But a commitment is needed, a decision to go for it and the determination to see it through.”

#### Colonizing space is key to stimulate growth, protect the environment, and prevent resource wars.

Collins & Autino 08

[Patrick Collins, Adrienne Autino. 7/7/08. Space Future Journal, What the Growth of a Space Tourism Industry Could Contribute to Employment, Economic Growth, Environmental Protection, Education, Culture and World Peace. http://www.spacefuturejournal.com/archive/what\_the\_growth\_of\_a\_space\_tourism\_industry\_could\_contribute\_to\_employment\_economic\_growth\_environmental\_protection\_education\_culture\_and\_world\_peace.shtml]

Vehicles capable of supplying low-priced sub-orbital passenger space travel services could have been produced as early as 1950 if German rocket technology had not been used solely for military purposes by the USA and USSR. If that had happened, orbital passenger flight services could have started during the 1960s. In this case passenger space travel could have grown into a major industry by today. In growing to large scale, space travel would also have reduced the cost of space travel far below that of the expendable rockets still in use today, of which the first orbital vehicle, the R-7 / Soyuz, is still the cheapest and most reliable 50 years later. Several decades of growth of space travel and related space activities could have had a major beneficial influence on the modern world. The paper discusses the scope for new employment, stimulating economic growth, reducing environmental damage, encouraging education particularly in the sciences, stimulating cultural growth, and preserving peace by eliminating any need for "resource wars".

### Case

### Pollution

#### Privatization is key to sustainable rocket launches – reliance on public entities is bad because they are too limited, expensive, and undo critical strides being made right now

**Kapoor & Todi 21**[Khushi Kapoor and Keshav Todi On March 20, 2021, 3-20-2021, "The Privatisation of Space Exploration – Finance and Investment Cell, SRCC," Finance and Investment Cell Shri Ram College of Commerce is a student-driven initiative to facilitate knowledge sharing on matters of finance, geopolitics and economy, at Shri Ram College of Commerce and at the university level. The cell aims to provide a stimulus to develop financial instincts among young minds through regular workshops, events and continued collaboration with the industry, to bridge the gap between pedagogy and practice. A small step, that will hopefully yield some great dividends. [https://ficsrcc.com/the-privatisation-of-space-exploration/]//DebateDrills](https://ficsrcc.com/the-privatisation-of-space-exploration/%5D//DebateDrills) ww

**Privatisation** of space exploration has had many benefits for the space industry in the 21st century. Private companies have a greater degree of autonomy in making decisions, which **enables** them to take up **new projects** while taxpayer-funded institutions are accountable to **the Government** and hence, have to often **limit themselves**. Moreover, there is quick decision making in **private companies** while the same process in a public enterprise would have to pass through a number of stages. This advantage has allowed companies like SpaceX, Blue Origin, etc. to cut their costs substantially and perform operations like **launch**ing a rocket to ISS **at** merely **$57 million per seat** as compared to **$80 million per seat** if aboard a Russian shuttle**, and $450 million** each mission before NASA ended its space shuttle program. Moreover, **making reusable landing rocket launchers, improvements in assembly lines and other** such **operations** further ensure lower costs. Due to the well- known success of the top few **p**rivate **s**pace **c**ompanies, many new small companies such as Firefly systems and Vector launch have been able to raise substantial private capital as well. The growth in the space industry also provides employment to millions all over the world, and the rise in the number of private space companies promotes competition amongst them and encourages constant improvements and advancements. Lastly, the publicity of their operations, like live streaming launches, has sparked widespread interest in space exploration among the general public.

### Debris

#### Private entities are crucial to innovation in space technology and reducing debris – empirics prove.

**INN '20,** Innovation News Network, "Innovation in space: the private sector’s role in the 2020 space race", 6-11-2020, accessed 7-11-2021, <https://www.innovationnewsnetwork.com/innovation-in->space-the-private-sectors-role-in-the-2020-space-race/5490/ DHS//JL

SpaceX has paved the way for a new wave of commercial space technologies. However, **private actors have been influencing the space industry for many years.** In May 2003, Scaled Composites first launched SpaceShipOne, an experimental and reusable space plane that uses a hybrid rocket to achieve speeds of up to speeds of up to 900 m/s. SpaceShipOne completed the first crewed private spaceflight in 2004, which was then retired that year. In 2013, The Spaceship Company announced the first powered flight of SpaceShipTwo, another suborbital spaceplane designed for space tourism. Unfortunately, in October 2014, the first SpaceShipTwo VSS Enterprise crashed in the Mojave Desert. Further investigation suggested that the craft’s descent device deployed too early, killing the pilot, Michael Alsbury. Virgin Galactic plans to operate a fleet of five improved SpaceShipTwo spaceplanes in a private passenger-carrying service and has been taking bookings for some time, with a suborbital flight carrying an updated ticket price of $250,000. **SpaceX is responsible for some of the most innovative space technologies** produced in the last decade.SpaceX has created the most powerful rocket ever developed, Falcon Heavy, which can lift more than twice the payload of the next closest operational vehicle, the Delta IV Heavy. Although the nature is of the commercial space sector is competitive, many private companies share common goals.How can commercialisation reduce overcrowding in space? Almost 60 years of space activities and more than 5,450 launches have resulted in approximately 23,000 objects remaining in orbit. Around 24% of the catalogued objects are satellites. This catastrophic waste of technology can have a negative effect of future launches and it has been theorised that sending objects into Earth’s orbit could become impossible due the risk of collision. This debris must be removed from orbit if the space industry is to continue to grow. Many **private companies have taken on the burden of removing debris from Earth’s orbit.** Aviosonic Space Tech has pioneered the first Debris Collision Alert System (DeCAS) for the monitoring of space vehicles and satellites as they re-enter Earth’s atmosphere. Avisonic’s patented space debris management system, DeCAS, addresses the vital issue of protecting people and institutions across the globe through a precise, efficient, and cost-effective system which will make the world a safer place. Although the removal of space debris is an important step in sustainable space travel, many businesses are developing nanosatellites to reduce the volume of technology in orbit. Another benefit of developing nanosatellites is that they can do almost everything a conventional satellite does at a fraction of the cost, making this technology more popular in the commercial sector.

#### 1. Space junk in our atmosphere isn’t part of outer space, Merriam webster defines outer space as “space immediately outside the earth’s atmosphere”<https://www.merriam-webster.com/dictionary/outer%20space>

#### 2.

### Inequality

#### Private appropriation doesn’t disadvantage developing nations and the alt is worse.

**Reinstein, 99** -- JD, Associate, Kirkland & Ellis  [Ezra J., Owning Outer Space, 20 Nw. J. Int'l L. & Bus. 59, 1999, <https://scholarlycommons.law.northwestern.edu/njilb/vol20/iss1/7>, accessed 7-10-21]

B. Problem: What about the concerns of **developing nations**?

Developing nations have reason to oppose incorporating rights of ownership into the property regimes governing international zones. First, developing nations do not want to be permanently disadvantaged just because they lag in space-capability right now. This is an extremely potent critique, and will be discussed momentarily. The second rationale is more historical. It is a deep-seated distrust of colonial imperialist doctrine such as that which the world faced in previous centuries. It is a readily understandable distrust: most, if not all developing nations were harmed by European nations who treated the non-European lands as theirs for the taking. The difference here, however, is that there are no (known) occupants native to outer space.92 The colonialist "right of grab" policy was morally objectionable because it ignored the property rights (and other rights) of those already occupying the "discovered" lands.93 In the absence of prior existing property rights, however, there seems to be nothing inherently immoral about a right of grab. Except, perhaps, that it may severely disadvantage the lower-tech nations in future. Developing nations fear that by the time they gain the wealth and technology necessary to become players in the space game, the most readily available resources will have already been claimed as private property and be under sovereign control of other nations. The developing nations argue that they will again be left in the economic lurch. This argument against a right-of-grab-based system gains salience when one considers that the reason the developing nations are not yet space-capable may well be attributable to past wrongs the developed nations inflicted on them. The perpetuation of past wrongs thus makes the right of grab doubly objectionable in the eyes of developing nations. There are two short answers to this concern. First, the universe, for practical purposes, is **not finite**. Whenever developing nations become space-capable, there will be **plenty of available unused space real estate**. Second, corporations based in space-incapable nations could, of course, **contract** out to a space launch company from a **space-capable nation**. Developing nations can **take advantage of space development** without **themselves** being **space-capable**. Perhaps less straightforward is the notion that ownership rights, by **incentivizing the development of outer space**, would **fund intense R&D of launch technology**. Launches would become more **reliable** and **cheaper**. In this way, ownership rights might **hasten the day** that developing nations are able to afford hiring a launch company, or even to have **their own space programs** (see infra section VII (b)). Nevertheless, developing nations will likely continue to oppose rights of ownership in space. This is a political problem, and requires a political solution. For further discussion on this point, see section VII, infra. We can learn how not to solve the problem from the legal and diplomatic wrangling that has been going on regarding mining of Earth's deep seabed. Exploitation of the deep seabed, like exploitation of space, is a **very risky and expensive proposition**. And the deep seabed, like space, is considered an international zone. In December, 1982, 120 nations signed the LOS.94 The LOS establishes an "Authority" and an "Enterprise." 95 Mining companies must receive approval from the Authority. Approval, in the form of a license, is only granted if the applicant company satisfies a set of rigorous conditions. The applicant must present two sites of equal value, one of which will be reserved by the Authority for development by the Enterprise.96 The applicant must fully disclose information regarding mining equipment, methods, and technology.97 The applicant must pay an initial sum of $500,000, an annual fee of $1 million until production begins, and (once mining has begun) either $1 million or a percentage of the market value of recovered materials, whichever is greater.9 Finally, and in addition to any domestic taxes incurred, the Authority levies 35 to 70 percent of the net profits.99 The United States, along with several other industrialized nations including the Federal Republic of Germany, France, Great Britain, Japan, and the Soviet Union, refused to ratify the LOS because of the deep seabed mining provisions.'0° There was a strong perception that the treaty's harsh regulations were an attempt to ruin commercial mining projects that would be in potential competition with the dry-land mines of developing nations. As Marne A. Dubs, spokesperson on seabed mining for the American Mining Congress, saw it, if the LOS was enforced "there will be no U.S. ocean mining industry."'O' Instead, the United States passed a domestic law, the Deep Seabed Hard Mineral Resources Act, which recognized the rights of U.S. mining ventures to the **full profits of their labors**. 02 If space law follows the LOS's lead and asks developed nations to make similarly-excessive sacrifices for the benefit of developing nations, the same political impasse with the **resultant disparate** and **incoherent legal regimes** will no doubt reoccur.

AND

#### Aff doesn’t solve – there’s still inequality in the status quo, it’s not functionally different if bezos has 100 billion or 1 trillion, at least we provide the possibility of making everyone’s lives better.

### Space War

#### Turn – a space race between private companies is preferable to a space race between countries – it increases innovation without the threat of an actual war since private companies do not have armies.

**Hyun-bin N.D.** [Kim, “Private companies spearhead global space race”, Korea Times. https://www.koreatimes.co.kr/www/tech/2021/08/768\_314662.html] //DebateDrills LC

The **competition in the global space industry is heating up**, with billionaire moguls making dramatic moves to spearhead the advancement of commercial space travel.  
  
The **commercialization of the space industry by the private sector is gaining momentum quickly**, **resulting in renewed interest in the public sector as well**, contrary to major space projects in the past which were led and run by governments only.  
  
The recent voyages into space of Amazon CEO Jeff Bezos' Blue Origin LLC, Sir Richard Branson's Virgin Galactic Holdings Inc. and Tesla CEO Elon Musk's Space Exploration Technologies Corp. (SpaceX) have attracted much public attention to the billionaires' hopes to commercialize space travel.  
  
**The industry has the potential for exponential growth in diverse sectors, including faster world travel via space, orbiting hotels, the establishment of bases on the moon and the colonization of other planets in the future**.

#### Turn – space wars are more likely when governments are the only ones with vested interest in space, because they’re the ones with military interests.

**Bender 18** [Bryan, “Space war is coming – and the US is not ready”, Futurism. 6 April 2018 https://www.politico.com/story/2018/04/06/outer-space-war-defense-russia-china-463067] //DebateDrills LC

W**ar is coming to outer space, and the Pentagon warns it is not yet ready**, following years of underinvesting while the military focused on a host of threats on Earth.

Russia and China are years ahead of the United States in developing the means to destroy or disable satellites that the U.S. military depends on for everything from gathering intelligence to guiding precision bombs, missiles and drones.

Now **the Pentagon is** trying to catch up — **pouring billions more dollars into hardening its defenses against anti-satellite weapons, training troops to operate in the event their space lifeline is cut, and honing ways to retaliate against a new form of combat that experts warn could affect millions of people**, cause untold collateral damage and spread to battlefields on Earth.

“We are now approaching a point where ‘Star Wars’ is not just a movie,” said Steve Isakowitz, CEO of The Aerospace Corp., a government-funded think tank that serves as the military’s leading adviser on space. He said **the U.S. can no longer afford to take its dominance for granted.**