**I negate the resolution: Resolved: The appropriation of outer space by private entities is unjust.**

**Framework**

#### **I negate and value justice. The value criterion is consistency with utilitarianism – treating everyone equally and maximizing well-being ensures that everyone reaps the benefits of governmental action**

**Goodin 1995** (Professor of Philosophy at the Research School of the Social Sciences at the Australian National University (Robert E., Cambridge University Press, “Utilitarianism As a Public Philosophy” pg 63)

My larger argument turns on the proposition that there is something special about the situation of public officials that makes utilitarianism more plausible for them (or, more precisely, makes them adopt a form of utilitarianism that we would find more acceptable) than private individuals. Before proceeding with that larger argument, I must therefore say what it is that is so special about public officials and their situations that makes 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, at 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 – if they want to use it at all – to choose general rules of conduct. Knowing aggregates and averages, they can proceed to calculate the utility payoffs from adopting each alternative possible general rule. But they cannot be sure what the payoff will be to any given individual or on any particular occasion. Their knowledge of generalities, aggregates and averages is just not sufficiently fine-grained for that.

# **Contention 1: Internet**

**Private companies are key to providing global and accessible internet access**

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Nirmalathas, T. A. (2015, June 23). *CAN satellites bring affordable internet to the whole world?* World Economic Forum. Retrieved January 7, 2022, from <https://www.weforum.org/agenda/2015/06/can-satellites-bring-affordable-internet-to-the-whole-world/>

The race is on to get billions of people connected to the internet via a global network of satellites. Europe’s Airbus announced this week that it is to design and [build up to 900 satellites](http://www.reuters.com/article/2015/06/16/us-space-satellite-airbus-group-idUSKBN0OW00I20150616) for the privately owned OneWeb Ltd, which includes Richard Branson as a board member.

A [statement from OneWeb](http://www.oneweb.world/#news) said the plan was to begin launches in 2018 to bring “affordable internet access for everyone” by providing approximately 10 terabits per second of low-latency, high-speed broadband. That estimate of 10 terabits per second may be misleading, though. The broadband access rates experienced by customers are more likely to be in the range of 2 to 50 megabits per second (Mb/s). It is an ambitious move and [follows reports](http://www.washingtonpost.com/business/economy/spacex-founder-files-with-government-to-provide-internet-service-from-space/2015/06/09/db8d8d02-0eb7-11e5-a0dc-2b6f404ff5cf_story.html) that the entrepreneur Elon Musk’s company SpaceX is seeking US government approval of a network of 4,000 satellites to provide similar internet access. Accessing the internet via satellite is nothing new. Our own NBN Co plans to [launch a satellite](http://www.zdnet.com/article/first-nbn-satellite-to-be-launched-in-september/) this September to help bring people in regional areas to its high-speed network. But what makes OneWeb and SpaceX’s ventures interesting is their plan to connect people anywhere on the planet, similar to [Google’s plan](https://theconversation.com/googles-plan-for-internet-access-from-the-sky-27720) revealed last year.

Facebook’s [internet.org](http://internet.org/) is another project that aims to make it easier for more people anywhere to connect to the internet. A truly world wide web Only about [40% of the world’s population](http://www.internetlivestats.com/internet-users/) currently has access to the internet and annual growth has been slowing from from 10.5% in 2013 to 8% in 2013 and 7.9% last year. Any further growth requires cost-effective access such as a global satellite network. With the mass production of micro-satellites, building such a pervasive broadband internet powered by a constellation of satellites opens up many possibilities. It makes business sense for large internet companies such as Facebook and Google to increase access in the developing world. Having benefited from the huge uptake of internet connectivity among developed countries, these companies see an as-yet-untapped market opportunity among those who do not currently have internet access. If other large technology companies hungry for users want to increase affordable internet access, then governments should take advantage of these opportunities. Connecting the unconnected to the internet has many positive advantages for the community. The internet supports development by transforming a younger generation’s ability to acquire knowledge and skills and contribute productively to national growth. It can also help an ageing population to remain active and access cost-effective health care.

Connectivity is transforming transport, manufacturing, logistics and environment management. All forms of government can achieve greater efficiency and cost-effectiveness through their citizens being online and connected. Access to digital connectivity is essential in the networked society and it is imperative that there is equitable and universal access throughout the world. Access needs to be affordable The [Alliance for Affordable Internet](http://a4ai.org/) has long highlighted the need to increase access by making the internet affordable to a greater percentage of the global population. Its latest [Affordability Report](http://a4ai.org/affordability-report/report/#affordability_a_global_picture) says only 5% of the population of the world’s 49 most underdeveloped countries are online. But for the two billion people living on less than US$2 per day, basic broadband access can exceed 40% of their monthly income. The low income of many regions does not create the necessary demand to drive investment in affordable internet access options. This leaves these communities in a vicious cycle, which is widening the gap between the connected and non-connected. A global satellite network may be one solution to providing such access.

**Internet access is critical in the fight against poverty - the aff gets rid of this possibility.**

Todd, E. (2015, September 28). *Why connecting everyone to the internet could help end extreme poverty*. ONE. Retrieved January 7, 2022, from <https://www.one.org/international/blog/why-connecting-everyone-to-the-internet-could-help-end-extreme-poverty/>

So when people don’t have enough food, education, healthcare, isn’t access to the internet a luxury that comes later? The answer is an emphatic ‘no.’

Because when people have a connection to the internet, information is available to guide decisions that can keep them safe, and make them better off. The internet can educate and help communicate. Farmers can plan for the weather, and watch the prices of goods in the market. Families can receive money from relatives overseas. Microcredit transactions can give people a digital and financial identity, and bring them into the local economy. Women can gain power in their lives. Connectivity can mean that people living in poverty are empowered to make their own decisions, to have access to nutritious food, a home, and to be free to express their opinions. This is especially important for girls and women – [poverty is sexist](https://one.org/sexist) and so, as it turns out, is access to the internet in the poorest countries. Women in the developing world are less likely than men to own a mobile phone. Right now, we are too far off: In developing countries, only 2.1 billion people (35% of a total of 6 billion) are using the internet leaving the other 3.9 billion (65%) of people in developing countries offline. The results of connectivity could be huge. Internet connectivity could generate $2.2 trillion of economic growth and more than 140 million new jobs. If everyone had access to the internet, the opportunities opened up to them could lift 160 million people out of extreme poverty, the improvements in health care could help save the lives of 2.5 million people, and 2.5 million HIV/AIDS patients could increase their life expectancy thanks to better monitoring and adherence to treatment.

If we galvanise, organise, and energise, we can save these lives and boost economies.

**Key to global sustainability – internet access solves poverty, rights abuses, education, and health disparities.**

Micek, 17 – [Peter Micek is General Counsel at Access Now, a global digital rights organization, and Adjunct Professor at the Columbia University School of International and Public Affairs. “We can’t reach the U.N. goals for sustainable development without the internet”, (<https://www.accessnow.org/cant-reach-u-n-goals-sustainable-development-without-internet/>)]//MM

It’s become common wisdom that the United Nations’ ambitious “Global Goals for Sustainable Development” aren’t just for the U.N., or even governments, to implement. Launched in September 2015, the 17 goals and 169 targets are “a series of ambitious targets to end extreme poverty and tackle climate change for everyone by 2030” (hence the alternative moniker, the “2030 Agenda for Sustainable Development”). Replacing the more arcane “Millennium Development Goals,” these Sustainable Development Goals (SDGs) are everyone’s goals, crowd-sourced to completion and promoted by companies and civil society alike. (Cue the hip, auto-playing video on the website.) Smartly, the goals, especially Goal 17, emphasize that access to technology underpins every one of these commitments to the eradication of extreme poverty. However, not all connectivity is the same, nor yields the same benefits to societies in terms of economic, social, or cultural development. As we told the International Telecommunication Union (ITU), only stable, secure, and open access to broadband internet will ensure success for the U.N. SDGs. That’s something civil society and our partners will continue to make clear, and we’ll need to work in legislatures to get the point across, not simply at aid and development banks. To reach the SDGs, we need civil and political advocacy Traditionally, information and communications technology (ICTs) have not been a major recipient of aid funding. That’s one reason this crucial technology is “under-represented” in the SDGs and appears in only four of the 169 targets. It’s assumed that telecommunications will take care of itself, having been largely deregulated and privatized in the 1980s and 1990s. Yet more than half the world’s population is not using the internet, a statistic showing the failure of local, national, and global governance, with economic, political, and moral implications. Rights like free expression, political participation, and access to information are clearly boosted by internet access, but also impact economic development. Researchers publishing in Science found “a strong and persistent political bias in the allocation of Internet coverage across ethnic groups worldwide.” It’s not simply affordability or geography that determine whether you have the tools you need to get ahead in our digital age. The scientists question the “frequent assumption that the uneven global distribution of digital technology can be mitigated by economic forces and incentives,” like competition and smart regulation — or deregulation — of telcos. “This suggestion needs to carefully consider the role of local political actors in shaping this process.” Along with political power comes control over your personal data, privacy, and means of expression. The digital economy cannot lift people out of poverty if they lack dependable access, or the capacity and literacy to leverage the tools of the internet for their economic progress. For these reasons, Access Now created the Human Rights Principles for Connectivity and Development, showing why we must integrate respect for digital rights into infrastructure projects, rather than leave governments, telcos, and development banks to their own devices, however well-meaning they may be. As written, the Global Goals implicitly depend on digital rights. But we don’t need to depend on our own research to show why censoring or shutting down the internet, or putting people under surveillance, prevents economic and social development. The Global Goals themselves contain many “easter eggs” or hooks for that work. In response to a question from an Access Now community member, we have examined how reaching Global Goals and their targets depends on law and policy that respects digital rights. Here’s a look at what we found: Health – SDG3: “By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes.” In many countries, if not most, the internet serves as one of the only places for broad access to medical information and support without social stigma. Outright bans on certain categories of data, like sexuality and reproductive health information, are common. Doctors and hospitals increasingly rely on the internet for their daily work, as well. Filtering results they see will not likely advance the benefits of science or medicine. At least one study has shown that shutting down the internet directly impedes access to emergency medicine. Education – SDG4.7: “By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development.” Censorship makes it more difficult for people to enjoy robust education and gain open access to knowledge. People aren’t able to fully grow their intellect, develop opinions, and achieve new skills if they’re not able to access the wealth of resources online. Innovation in education, including distance learning, YouTube explainer videos, and massive open online courses (MOOCs), depend on access to the open internet. Wikipedia is currently blocked in Turkey, barring access to one of the world’s most popular educational resources. Civic engagement and anti-corruption – SDG16.10: “Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements.” In the digital age, governments must open the public’s access to all sorts of data and policies to ensure good governance and accountability.” Well, that says it quite clearly. Governments “must open” access to “all sorts” of data, as a matter of accountability and basic, best practice governance. For our part, we expect more governments to release information about what user data they’re requesting from companies — something corporate Transparency Reports show — and what content they want restricted, including to “counter violent extremism.” Universal access to the internet by 2020 – SDG9.3 “Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020.” This is as close as the SDGs come to recognizing that the internet is essential to achieving its goals. Goal 9, “Industry, Innovation, and Infrastructure,” calls on Least Developed Countries to bring everyone online by 2020. We read this to mean extending access to the global, open internet, not simply censored, surveilled, limited, or app-based connectivity. It’s very ambitious, and it’s also up for review this summer at the U.N. High Level Political Forum on the SDGs. Finally, SDG17 recognizes that technology is essential to reaching all other SDGs, with this excellent target: “Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology.” This is great language as it works positively and negatively. The use of ICTs is not enhanced by information controls, filtering, or internet shutdowns — nor by the indifference of authorities to protecting the free flow of information online. By promoting, not just tolerating or protecting, freedom of expression, we can build capacity for societies to reach their goals widely. We see censorship of the free and open internet as a bar to achieving the U.N.’s “2030 Agenda,” even if the goals themselves are fairly sanitized and avoid any language on freedom of expression, privacy, and related human rights. Specifically, the increasing rate of internet shutdowns — our KeepItOn Coalition counted 56 in 2016, more than double the number we recorded in 2015 — damages educational, economic, and health outcomes in countries that often are just beginning to benefit from widespread connectivity. With this in mind, we’ll show up at U.N. in New York in July for the High Level Political Forum on the SDGs to see how scores of nations are reaching Goal 9 on Infrastructure, and report back to you the results.

Private companies are important to set up global satellies to bring internet to unconnected areas. This increases education, lifts people out of poverty, and saves lives due to better medical information.

# **Contention 2: Mining**

#### **Private companies are necessary for collecting resources from space**

**Helmore 2020** (Edward Helmore, “Nasa is looking for private companies to help mine the moon,” September 11, 2020, The Guardian, <https://www.theguardian.com/science/2020/sep/11/nasa-moon-mining-private-companies>) //neth

Nasa has announced it is looking for private companies to go to the moon and collect dust and rocks from the surface and bring them back to Earth. The American space agency would then buy the moon samples in amounts between 50 to 500 grams for between $15,000 to $25,000. The Nasa administrator, Jim Bridenstine, announced on Thursday that the moon material collection would become part of a technology development program that would help astronauts “live off the land” for crewed missions in the future to the moon or elsewhere. Bridenstine wrote that the agency “is buying lunar soil from a commercial provider. It’s time to establish the regulatory certainty to extract and trade space resources.” The collection is part of Nasa’s Artemis lunar exploration program established last year to land US astronauts, including the first woman and the next man, on the moon by 2024. The agency has indicated that missions further afield, to Mars for instance, will require the use of locally mined resources. “We will use what we learn on and around the moon to take the next giant leap – sending astronauts to Mars,” Bridenstine wrote. In a blogpost, Bridenstine said the effort would comply with the Outer Space Treaty of 1967, which says that no country may lay sovereign claim to the moon or other celestial bodies in much the same way that the Antarctic continent is off-limits for territorial conquest. In May, Nasa unveiled a legal framework that would govern the behavior of countries and companies in space and on the moon. The legal framework, known as the Artemis Accords, include the creation of “safety zones” around sites where mining and exploration would take place on the lunar surface. Nasa’s top administrator also told a forum held by the Secure World Foundation that the policies that will govern mining from celestial bodies would be much the same as those that currently exist for the world’s oceans. “We do believe we can extract and utilize the resources of the moon, just as we can extract and utilize tuna from the ocean,” he said, without referring to overfishing and pollution that is rapidly destroying fish stocks in many regions. Unlike fisheries, however, participating celestial mining companies would be required to provide imagery of the material and the location from which it was recovered. Nasa already has a separate program to contract companies to fly science experiments and cargo to the moon ahead of a human landing. Those include Astrobotic, SpaceX, Blue Origin, Sierra Nevada Corp and Lockheed Martin. Bridenstine said he anticipated some of those might also be interested in lunar mining. Casey Dreier, chief advocate & senior space policy adviser at the Planetary Society, wrote on Twitter that the importance of Nasa’s announcement is “not so much the financial incentive (which is tiny) but in establishing the legal precedent that private companies can collect and sell celestial materials (with the explicit blessing of NASA/U.S. gov)”.

#### **Resource extraction from asteroids is being driven by private entities & it’s necessary for building tools to combat climate change**

**Taylor 2019** (Chris Taylor, “The Asteroid Boom,” 2019, Mashable, <https://mashable.com/feature/asteroid-mining-space-economy>) //neth

Meanwhile, quietly, Earth’s scientists are laying the groundwork of research the space economy needs. Japan’s Hayabusa 2 spacecraft has been in orbit around asteroid Ryugu for the last year and a half, learning everything it can. (Ryugu, worth $30 billion according to Asterank, is the website's #1 most cost-effective target.) The craft dropped tiny hopping robot rovers and a small bomb on its target; pictures of the small crater that resulted were released afterwards. Officially, the mission is to help us figure out how the solar system formed. Unofficially, it will help us understand whether all those useful metals clump together at the heart of an asteroid, as some theorize. If so, it’s game on for asteroid prospectors. If not, we can still get at the metals with other techniques, such as optical mining (which basically involves sticking an asteroid in a bag and drilling with sunlight; sounds nuts to us, but NASA has proved it in the lab). It’ll just take more time. Effectively, we’ve just made our first mark at the base of the first space mineshaft. And there’s more to come in 2020 when Hayabusa 2 returns to Earth bearing samples. If its buckets of sand contain a modicum of gold dust, tiny chunks of platinum or pebbles of compressed carbon — aka diamonds — then the Duchy of Luxembourg won’t be the only deep-pocketed investor to sit up and take notice. The possibility of private missions to asteroids, with or without a human crew, is almost here. The next step in the process that takes us from here to where you are? Tell us an inspiring story about it, one that makes people believe, and start to imagine themselves mining in space. How would you explain the world-changing nature of the internet to 1945? How would you persuade them that there was gold to be mined in Vannevar Bush’s idea? You’d let the new economy and its benefits play out in the form of a novel. As Hayabusa dropped a bomb on Ryugu, Daniel Suarez was making the exact same asteroid the target of his fiction. Suarez is a tech consultant and developer turned New York Times bestselling author. His novels thus far have been techno-thrillers: his debut, Daemon, a novel of Silicon Valley’s worst nightmare, AI run rampant, made more than a million dollars. So it was a telling shift in cultural mood that Suarez’s latest thriller is also a very in-depth description of — and thinly-disguised advocacy for — asteroid mining. In Delta-v, published in April, a billionaire in the 2030s named Nathan Joyce recruits a team of adventurers who know nothing about space — a world-renowned cave-diver, a world-renowned mountaineer — for the first crewed asteroid mission. Elon Musk fans might expect this to be Joyce’s tale, but he soon fades into the background. The asteroid-nauts are the true heroes of Delta-v. Not only are they offered a massive payday — $6 million each for four years’ work — they also have agency in key decisions in the distant enterprise. Suarez deliberately based them on present-day heroes. The mission is essential, Joyce declares, to save Earth from its major problems. First of all, the fictional billionaire wheels in a fictional Nobel economist to demonstrate the actual truth that the entire global economy is sitting on a mountain of debt. It has to keep growing or it will implode, so we might as well take the majority of the industrial growth off-world where it can’t do any more harm to the biosphere. Secondly, there’s the climate change fix. Suarez sees asteroid mining as the only way we’re going to build[s] solar power satellites. Which, as you probably know, is a form of uninterrupted solar power collection that is theoretically more effective, inch for inch, than any solar panels on Earth at high noon, but operating 24/7. (In space, basically, it’s always double high noon). The power collected is beamed back to large receptors on Earth with large, low-power microwaves, which researchers think will be harmless enough to let humans and animals pass through the beam. A space solar power array like the one China is said to be working on could reliably supply 2,000 gigawatts — or over 1,000 times more power than the largest solar farm currently in existence. “We're looking at a 20-year window to completely replace human civilization's power infrastructure,” Suarez told me, citing the report of the Intergovernmental Panel on Climate Change on the coming catastrophe. Solar satellite technology “has existed since the 1970s. What we were missing is millions of tons of construction materials in orbit. Asteroid mining can place it there.”

#### **It’s more environmentally friendly than mining the same materials on earth**

**MIT Technology Review 2018** (“Asteroid mining might actually be better for the environment,” Massachusetts Institute of Technology – Technology Review, October 19, 2018, <https://www.technologyreview.com/2018/10/19/139664/asteroid-mining-might-actually-be-better-for-the-environment/>) //neth

Today, that changes thanks to the work of Andreas Hein and colleagues at the University of Paris-Saclay in France. These guys have calculated the greenhouse-gas emissions from asteroid-mining operations and compared them with the emissions from similar Earth-based activities. Their results provide some eyebrow-raising insights into the benefits that asteroid mining might provide. The calculations are relatively straightforward. Rocket launches release significant amounts of greenhouse gases into the atmosphere. The fuel on board the first stage of a rocket burns in Earth’s atmosphere to form carbon dioxide. For kerosene-burning rockets, one kilogram of fuel creates three kilograms of CO2. (The second and third stages operate outside the Earth’s atmosphere and so can be ignored.) Reentries are just as damaging. That’s because a significant mass of a re-entering vehicle ablates in the upper atmosphere, producing NOx such as nitrous oxide (N2O), a greenhouse gas that is about 300 times more potent than CO2. By one estimate, the space shuttle released about 20% of its mass in the form of N2O every time it returned to Earth. Hein and co use these numbers to calculate that a kilogram of platinum mined from an asteroid would release some 150 kilograms of CO2 into Earth’s atmosphere. However, economies of scale from large asteroid-mining operations could lower [emissions] this to about 60 kilograms of CO2 per kilogram of platinum. That needs to be compared with the emission from Earth-based mining. Here, platinum mining generates significant greenhouse gases, mostly from the energy it takes to remove this stuff from the ground. Indeed, the numbers are huge. The mining industry estimates that producing one kilogram of platinum on Earth releases around 40,000 kilograms of carbon dioxide. “The global warming effect of Earth-based mining is several orders of magnitude larger,” say Hein and co. The figures for water are also encouraging. In this case, the authors calculate the greenhouse-gas emissions from an asteroid-mining operation that returns water to anywhere within the moon’s orbit, a so-called cis-lunar orbit. They compare this to the emissions from sending the same volume of water from Earth into orbit. The big difference is that a water-carrying vehicle from Earth can haul only a small percentage of its mass as water. But an asteroid-mining spacecraft can transport a significant multiple of its mass as water to cis-lunar orbit. “Substantial savings in greenhouse gas emissions can be achieved,” say Hein and co.