# Stock AC

[brackets for clarification]

### 1AC – Advantage

#### Space race happening now – private sector is blindly accelerating space travel – they ignore risks for profit.

Thompson 20 [(Clive, author of Coders: The Making of a New Tribe and the Remaking of the World, a columnist for Wired magazine, and a contributing writer to The New York Times Magazine) “Monetizing the Final Frontier The strange new push for space privatization,” December 3, 2020 <https://newrepublic.com/article/160303/monetizing-final-frontier>]

For longtime enthusiasts of NASA’s human spacefaring, it was a singularly auspicious moment. Ever since NASA’s space shuttles were mothballed in 2011, the agency had no American-owned way of getting people into space. It had been paying the Russian government to fly U.S. astronauts up and back, on Russia’s Soyuz spacecraft. But this flight was different. It was the first time humans had flown in a rocket and a capsule made by a private-sector company: SpaceX, the creation of the billionaire Elon Musk. The launch was also a SpaceX branding bonanza. The astronauts rode up to the rocket in a Tesla, Musk’s fabled luxury electric car; when they’d reached orbit, they broadcast a live video in which they thanked SpaceX for making the flight happen, and showed off the sleek capsule—a genuine marvel of engineering, with huge touch screen control panels that looked rather like the ones inside a Tesla itself. Over the next few years, NASA will pay Musk and SpaceX $2.6 billion to ferry astronauts to and from the space station six times. For the feds, this price tag is remarkably cheaper than the space shuttle, which cost over $1 billion per flight. In his speech after the launch, Trump lauded the cost savings that SpaceX had realized on the government’s behalf. SpaceX, he announced, “embodies the American ethos of big thinking and risk-taking.... Congratulations, Elon.” For Musk, though, the launch was more than just a technical success, and is bigger even than the $2.6 billion contract. It cements him as a leading player in what might seem the unlikeliest stage of the final frontier’s exploration—the privatization of space. Private-sector activity in space travel is accelerating dramatically—rocketing, one might say. For decades, ever since people first headed for orbit in the 1960s, spaceflight had been mostly the preserve of governments. States were the only actors with the money and technical acumen to blast things into the vacuum and get them safely down again. The private sector didn’t have NASA’s know-how, nor—more important—a business plan that could rationalize the massive outlay of capital required to operate in space. In the last few years, that calculus has changed dramatically. A generation of “New Space” entrepreneurs has begun launching rockets and satellites. Some seek to flood the planet with fast, cheap mobile-phone signals; others want to manufacture new products in zero gravity, harnessing the novel physics of such conditions to engineer substances that can’t be made in Earth’s gravity. Further afield, they’re aiming to harvest water on the moon and even mine asteroids. Backing this burst of entrepreneurial fervor are many billionaires who made their money in the early Wild West of the internet, including Amazon’s Jeff Bezos, with dreams of building space colonies, and Musk, the former PayPal titan who hopes to personally make it to Mars.Barack Obama’s administration made the first major overtures to the space privatizers, signing legislation that paved the way for today’s space boom. But the real land rush has occurred under Trump, via a flurry of executive orders designed to give private firms greater access to “low-Earth orbit.” Trump officials have even touted the idea of privatizing the $100 billion space station itself—the last signature NASA-sponsored human spacecraft project still aloft. When Trump’s transition team in 2017 pondered the handoff of low-Earth orbit to the private sector, it concluded: “This may be the biggest and most public privatization effort America has ever conducted.” Or as Texas GOP Senator Ted Cruz—at the time the chairman of the Space, Science, and Competitiveness Subcommittee—put it in 2018: “I predict the first trillionaire will be made in space.” The burst of activity and high-tech acumen thrills many space fans. But it is making many others quite nervous. Opening up space to a frenzy of private actors could, they agree, produce measurable benefits back on planet Earth—making crucial scientific research, environmental monitoring, and everyday communication cheaper. But the critics are quick to note as well that the history of privatization is spotty at best, with plenty of civically brutal knock-on effects: concentrations of monopolistic power, enfeebled democratic control, and widespread environmental degradation. We’ve seen all those problems appear on Earth as all manner of traditional social goods, from education and housing to pension plans and mass transit, have been targeted for private-sector control. Next up, it seems, is the great beyond.

#### 1] Private entities uniquely spikes space debris, which proliferates pollution and collisions.

Maury 20 [Alain Maury, Alain J. Maury is a French astronomer, San Pedro de Atacama Celestial Explorations, Space Obs, “Is wild capitalism the best humanity has to offer to the Solar System ? (updated May 30th 2020)” May 30th 2020, [https://www.spaceobs.com/en/Alain-Maury-s-Blog/Is-wild-capitalism-the-best-humanity-has-to-offer-to-the-Solar-System-updated-May-30th-2020]/](https://www.spaceobs.com/en/Alain-Maury-s-Blog/Is-wild-capitalism-the-best-humanity-has-to-offer-to-the-Solar-System-updated-May-30th-2020%5d/) lm

Right now the priority should be to decrease the number of objects in space, not to increase it. Starlinks and whatever will come after that is going to multiply the number of objects in low earth orbit by a factor of 5. Who are the idiots who authorized such pollution of our skies ?

This is of course related to a current trend allowing private businesses to make their money without having to respond[ing] of the [to] pollution they cause. And even if it was not made by a private society but by a government, it still should not be allowed. Imagine if the Brazilian government decided to destroy all of its rain forest in Amazon. Legally, that state has a right to do whatever it wants with its territory, but it should not because it would affect the world's atmosphere and therefore increase global warming which has global and not Brazilian only repercussions... Here with Starlinks we have exactly the same situation, in order to earn an estimated several billions of US dollars per year, a private company decides to pollute the sky and nobody is there to stop them. Elon Musk is another dumbass, and a harmful one.

Access to space should be granted only to government institutions. Launching tens of thousands of satellites more is crazy. They won't be 100% reliable. If only 99% reliable, it means that with 10000 satellites, 100 will be out of control. And they might collide. Kessler imagined it, Elon Musk is going to do it. And again, a private company will have suppressed access to space to the rest of the world.

#### Space debris cause accidental collisions which get misinterpreted and escalate to nuclear war.

Beauchamp 14 [Zack Beauchamp. Senior correspondent at Vox who covers foreign policy. “How space trash could start a nuclear war”. 4-21-2014. Vox. <https://www.vox.com/2014/4/21/5625246/space-war-china-north-korea-iran>]

Panic in the skies! "The threats to U.S. space assets are significant and growing," according to a new report from the Council on Foreign Relations, which warns that there's a real chance of breaching conflict's final frontier.

This isn't idle fearmongering. The report makes a not-crazy case that efforts by China and other powers to limit America's total military dominance of space could accidentally destroy an American satellite, inadvertently convincing the US that war was coming and prompting retaliation on Earth. Its author, Micah Zenko, has [made a name](http://www.theamericanconservative.com/articles/the-anti-warrior/) for himself in report-after-report downplaying the threat to the United States from China, terrorists, and, really, [most things](http://blogs.cfr.org/zenko/2012/02/23/clear-and-present-safety-the-united-states-is-more-secure-than-washington-thinks/). So that fact that Zenko is this [concerned about space](http://www.cfr.org/space/dangerous-space-incidents/p32790?sp_mid=45655631&sp_rid=emFjay5iZWF1Y2hhbXBAZ21haWwuY29tS0) should tell you something.

The basic dynamic is simple: the US controls space and its opponents don't. Of all the money spent on space by all countries combined, America [spends](http://www.cfr.org/space/dangerous-space-incidents/p32790?sp_mid=45655631&sp_rid=emFjay5iZWF1Y2hhbXBAZ21haWwuY29tS0) 75 percent. It also owns 43 percent of all satellites. It uses that huge satellite network for, among other things, all sorts of military spying and coordination purposes. At one point, the Bush Administration [mused openly](http://www.armscontrol.org/act/2004_11/Krepon) about putting actual weapons pointed at Earth in space.

Countries who might hypothetically fight a war with the United States hate that space dominance, which gives the US a real strategic edge. Some have [developed](http://www.stimson.org/images/uploads/Anti-satellite_Weapons.pdf) anti-satellite (ASAT) weapons, usually missiles that shoot into space. Zenko thinks ASAT weapons are really dangerous, particularly those owned by China, North Korea, and Iran. The threat comes from both deliberate use and the risk of a misunderstanding that could spiral out of control.

The "greatest threat to international space security," in Zenko's view, is a Chinese accident. China is [seriously investing](http://america.aljazeera.com/articles/2014/4/16/china-s-presidentxiurgesgreatermilitaryuseofspace.html) in ASAT weaponry, which it has tested by blowing up old satellites in low earth orbit, one of the places place where satellites live. These explosions create debris, which can travel tens of thousands of miles per hour and shred up other satellites and spacecraft.

If debris from a Chinese test destroys a US military satellite, the US could mistake it as a preemptive strike against its space capabilities — some of which are [designed](http://www.pbs.org/wgbh/nova/military/nuclear-false-alarms.html) to detect nuclear missile launches. If the US thinks China is trying to take out its ability to detect a nuclear launch, things could get very bad, very quickly.

Accidents aren't the only concern. Zenko also worries about intentional space attacks, either during peacetime or a crisis. Here, Iran and North Korea are probably bigger threats, though their ASAT capabilities are far from proven.

North Korea has a pattern of crazy military moves designed to extort concessions from South Korea and the West; it could extend that behavior to space. Iran, according to Zenko, "already views space as a legitimate arena in which to contest US military power." He worries that Iran might fire missiles into space "during a major crisis, especially if it believes war is imminent — an assessment that could have self-fulfilling consequences."

But even if none of these scenarios for war are likely, preparing and testing for space war is intrinsically dangerous. Space debris don't discriminate between military and non-military satellites; the more ASAT testing there is, the more hazardous space travel becomes for everyone. As satellites become increasingly important to the economy and scientific research, even preparation for space war becomes deadly.

**Even limited nuclear war would result in extinction.**

Starr 15 [Steven Starr “Nuclear War: An Unrecognized Mass Extinction Event Waiting To Happen.” Ratical. March 2015. <https://ratical.org/radiation/NuclearExtinction/StevenStarr022815.html>]

A war fought with 21st century strategic nuclear weapons would be more than just a great catastrophe in human history. If we allow it to happen, such a war would be a mass extinction event that [ends human history](https://ratical.org/radiation/NuclearExtinction/StarrNuclearWinterOct09.pdf). There is a profound difference between extinction and “an unprecedented disaster,” or even “the end of civilization,” because even after such an immense catastrophe, human life would go on. But extinction, by definition, is an event of utter finality, and a nuclear war that could cause human extinction should really be considered as the ultimate criminal act. It certainly would be the crime to end all crimes. The world’s leading climatologists now tell us that nuclear war threatens our continued existence as a species. Their studies predict that a large nuclear war, especially one fought with strategic nuclear weapons, would create a post-war environment in which for many years it would be too cold and dark to even grow food. Their findings make it clear that not only humans, but most large animals and many other forms of complex life would likely vanish forever in a nuclear darkness of our own making. The environmental consequences of nuclear war would attack the ecological support systems of life at every level. Radioactive fallout produced not only by nuclear bombs, but also by the destruction of nuclear power plants and their spent fuel pools, would poison the biosphere. Millions of tons of smoke would act to [destroy Earth’s protective ozone layer](https://www2.ucar.edu/atmosnews/just-published/3995/nuclear-war-and-ultraviolet-radiation) and block most sunlight from reaching Earth’s surface, creating Ice Age weather conditions that would last for decades. Yet the political and military leaders who control nuclear weapons strictly avoid any direct public discussion of the consequences of nuclear war. They do so by arguing that nuclear weapons are not intended to be used, but only to deter. Remarkably, the leaders of the Nuclear Weapon States have chosen to ignore the authoritative, long-standing scientific research done by the climatologists, research that predicts virtually any nuclear war, fought with even a fraction of the operational and deployed nuclear arsenals, will leave the Earth essentially uninhabitable.

#### And space debris damages satellites that are key to fighting climate change.

Alonso 18 [(Elisa Jiménez Alonso, communications consultant with Acclimatise, climate resilience organization) “Earth Observation of Increasing Importance for Climate Change Adaptation,” Acclimatise, May 2, 2018, <https://www.acclimatise.uk.com/2018/05/02/earth-observation-of-increasing-importance-for-climate-change-adaptation/>]

Earth observation (EO) satellites are playing an increasingly important role in assessing climate change. By providing a constant and consistent stream of data about the state of the climate, EO is not just improving scientific outcomes but can also inform climate policy.

Managing climate-related risks effectively requires accurate, robust, sustained, and wide-ranging climate information. Reliable observational climate data can help scientists test the accuracy of their models and improve the science of attributing certain events to climate change. Information based on projections from models and historic data can help decision makers plan and implement adaptation actions.

Providing information in data-sparse regions

Ground-based weather and climate monitoring systems only cover about 30% of the Earth’s surface. In many parts of the world such data is incomplete and patchy due to poorly maintained weather stations and a general lack of such facilities.

EO satellites and rapidly improving satellite technology, especially data from open access programmes, offer a valuable source information for such data-sparse regions. This is especially important since countries and regions with a lack of climate data are often particularly vulnerable to climate change impacts.

International efforts for systematic observation

The importance of satellite-based observations is also recognised by the international community. Following the recommendations of the World Meteorological Organization’s (WMO) Global Climate Observing System (GCOS) programme, the UNFCCC strongly encourages countries that support space agencies with EO programmes to get involved in GCOS and support the programme’s implementation. The Paris Agreement highlights the need for and importance of effective and progressive responses to the threat of climate change based on the best available scientific knowledge. This implies that climate knowledge needs to be strengthened, which includes continuously improving systematic observations of the Earth’s climate.

To meet the need of such systematic climate observations, GCOS developed the concept of the Essential Climate Variable, or ECV. According to WMO, an ECV “is a physical, chemical or biological variable or a group of linked variables that critically contributes to the characterization of Earth’ s climate.” In 2010, 50 ECVs which would help the work of the UNFCCC and IPCC were defined by GCOS. The ECVs, which can be seen below, were identified due to their relevance for characterising the climate system and its changes, the technical feasibility of observing or deriving them on a global scale, and their cost effectiveness.

The 50 Essential Climate Variables as defined by GCOS.

One effort supporting the systemic observation of the climate is the European Space Agency’s (ESA) Climate Change Initiative (CCI). The programme taps into its own and its member countries’ EO archives that have been established in the last three decades in order to provide a timely and adequate contribution to the ECV databases required by the UNFCCC.

Robust evidence supporting climate risk management

Earth observation satellites can observe the entire Earth on a daily basis (polar orbiting satellites) or continuously monitor the disk of Earth below them (geostationary satellites) maintaining a constant watch of the entire globe. Sensors can target any point on Earth even the most remote and inhospitable areas which helps monitor deforestation in vast tropical forests and the melting of the ice caps.

Without insights offered by EO satellites there would not be enough evidence for decision makers to base their climate policies on, increasing the risk of maladaptation. Robust EO data is an invaluable resource for collecting climate information that can inform climate risk management and make it more effective.

#### 2] Squo solves warming — new tech geoengineers the climate

Fred Pearce 19 is a climate author, 05-29, "Geoengineer the Planet? More Scientists Now Say It Must Be an Option," Yale E360, <https://e360.yale.edu/features/geoengineer-the-planet-more-scientists-now-say-it-must-be-an-option>, smarx SJP

*United States scientists are on the case*, too. *The National Academies* last October *launched a study into* sunlight reflection technologies, including their feasibility, impacts and risks, and governance requirements. *Marcia McNutt, president of the National Academy of Sciences, said*: “We are running out of time to mitigate catastrophic climate change. Some of these interventions… may need to be considered in future.” The study’s prospective authors held their first meeting in Washington, D.C., at the end of April. Speakers included David Keith, *a Harvard University physicist* who has *developed* his own patented technology for using chemistry to remove CO2 directly from the atmosphere*, and Kelly Wanser* of the Marine Cloud Brightening Project, which is *studying* the efficacy of seeding clouds with sea salt and other materials to reflect more sunlight back into space. The project is preparing for future field trials. China too has an active government-funded research program. It insists it has no current plans for deployment, but is looking, among other things, at how solar shading might slow the rapid melting of Himalayan glaciers. Geoengineering the climate to halt global warming has been discussed almost as long as the threat of warming itself. American researchers back in the 1960s suggested floating billions of white objects such as golf balls on the oceans to reflect sunlight. In 1977, Cesare Marchetti of the Austria-based International Institute for Applied Systems Analysis discussed ways of catching all of Europe’s CO2 emissions and injecting them into sinking Atlantic Ocean currents.

#### Private entities are dependent on the fossil fuel industry for launches and dramatically increase emissions –

**Levine 15** [Nick Levine is an MPhil candidate in history of science at the University of Cambridge, Jacobin, “Democratize the Universe” 3/21/2015, [https://jacobinmag.com/2015/03/space-industry-extraction-levine]/](https://jacobinmag.com/2015/03/space-industry-extraction-levine%5d/) lm

The privatization of the Milky Way has begun.

Last summer, the bipartisan [ASTEROIDS Act](https://www.congress.gov/bill/113th-congress/house-bill/5063) was introduced in Congress. The legislation’s aim is to grant US corporations property rights over any natural resources — like the platinum-group metals used in electronics — that they extract from asteroids.

Whether and how we should go to space are not profound philosophical questions, at least not primarily. What’s at stake is not just the “stature of man,” as Hannah Arendt [put it](http://www.thenewatlantis.com/publications/the-conquest-of-space-and-the-stature-of-man), but a political-economic struggle over the future of the celestial commons, which could result in a dramatic intensification of inequality — or a small step for humankind toward a more egalitarian state of affairs on our current planet.

We might also question whether mining asteroids would be detrimental to our current planet’s environment in the medium term. If we don’t find a renewable way to blast off into outer space, the exploitation of these resources could lead to an intensification of, not a move away from, the fossil-fuel economy.

If the environmental impact of space mining turns out to be large, it would be analogous to fracking — a technological development that gives us access to new resources, but with devastating ecological side effects — and ought to be opposed on similar grounds. On the other hand, some speculate that mining the Moon’s Helium-3 reserves, for example, could provide an abundant [source of clean energy](https://io9.gizmodo.com/5908499/could-helium-3-really-solve-earths-energy-problems). The terrestrial environmental impact of space activity remains an open question that must be explored before we stake our hopes on the economic development of outer space.

Philosophers have suggested that we might have ethical duties to preserve the “natural” states of celestial bodies. Others fear that our activities might unknowingly wipe out alien microbial life. We should remain sensitive to the aesthetic and cultural value of outer space, as well as the potential for extinction and the exhaustion of resources misleadingly proclaimed to be limitless.

Of course, there’s nothing inevitable about the benefits of productivity gains being distributed widely, as we’ve seen in the United States over the past forty years. This is a problem not limited to space, and the myth of the “final frontier” must not distract us from the already existing problems of wealth and income distribution on Earth.

#### And best scientific models prove climate change causes extinction.

Strona 18 Giovanni, Flinders University, Bradshaw, Corey J. A., Scientific Reports, Science Daily, “Climate Change risks ‘extinction domino effect,’” https://www.sciencedaily.com/releases/2018/11/181129122506.htm

New research reveals the extinction of plant or animal species from extreme environmental change increases the risk of an [leads to] 'extinction domino effect' that could annihilate all life on Earth. This would be the worst-case scenario of what scientists call 'co-extinctions', where an organism dies out because it depends on another doomed species, with the findings published today in the journal Scientific Reports. Think of a plant's flower pollinated by only one species of bee -- if the bee becomes extinct, so too will the plant eventually. "Even the most resilient species will inevitably fall victim to the synergies among extinction drivers as extreme stresses drive ecosystems to collapse." says lead author Dr Giovanni Strona of the European Commission's Joint Research Centre based in Ispra in northern Italy. Researchers from Italy and Australia simulated 2,000 'virtual earths' linking animal and plant species. Using sophisticated modelling, they subjected the virtual earths to catastrophic environmental changes that ultimately annihilated all life. Examples of the kinds of catastrophes they simulated included runaway global warming, scenarios of 'nuclear winter' following the detonation of multiple atomic bombs, and a large asteroid impact. "What we were trying to test is whether the variable tolerances to extreme global heating or cooling by different species are enough to explain overall extinction rates," "But because all species are connected in the web of life, our paper demonstrates that even the most tolerant species ultimately succumb to extinction when the less-tolerant species on which they depend disappear." "Failing to take into account these co-extinctions therefore underestimates the rate and magnitude of the loss of entire species from events like climate change by up to 10 times," says co-author Professor Bradshaw of Flinders University in South Australia Professor Bradshaw and Dr Strona say that their virtual scenarios warn humanity not to underestimate the impact of co-extinctions. "Not taking into account this domino effect gives an unrealistic and exceedingly optimistic perspective about the impact of future climate change," warns Professor Bradshaw. It can be hard to imagine how the demise of a small animal or plant matters so much, but the authors argue that tracking species up to total annihilation demonstrates how the loss of one can amplify the effects of environmental change on the remainder. "Another really important discovery was that in the case of global warming in particular, the combination of intolerance to heat combined with co-extinctions mean that 5-6 degrees of average warming globally is enough to wipe out most life on the planet," says Dr Strona. Professor Bradshaw further warns that their work shows how climate warming creates extinction cascades in the worst possible way, when compared to random extinctions or even from the stresses arising from nuclear winter.

#### 3] Commercial space activity spikes disease – alien micro-organism hitchhike on rocket ships, and microgravity creates variants and activates earth diseases.

NW 21 [News Nation World, Nation World News Desk, Science, “https://nationworldnews.com/experts-warn-that-alien-pathogens-can-hitchhike-to-earth-and-we-are-completely-unprepared/,” 19/11/2021,]/ lm

The race to commercial space travel has started well and truly, with over 85 companies and organizations looking for a future in interplanetary travel. However, some researchers fear that we might get ahead of ourselves. They warn that before travel beyond Earth becomes common, the world needs to take some basic biosecurity measures. Otherwise, we might start receiving unwanted alien visitors. If a foreign organism manages to return to our planet in one of our spaceships, it could damage the balance of the Earth. The likelihood that this will actually happen is unlikely, especially since we have not yet found life outside the Earth. But given how bad things can be, some people think that we should prepare ourselves for this reality. A more likely scenario would be a human tourist carrying an earthly organism into space, and this is also a significant risk. Research has shown that in space, some microbes can undergo rapid genetic mutations. Having raised a thousand generations colibacillus For example, in microgravity, researchers have found that harmful bacteria become even more competitive by acquiring antibiotic resistance. If this resistant strain then returns to Earth, it could seriously threaten human life. “Risks that have a low likelihood of occurring, but can lead to extreme consequences, are at the heart of biosafety management,” says invasion biologist Phil Cassie of the University of Adelaide in Australia. “Because when something goes wrong, everything goes wrong.” The International Committee on Space Research (COSPAR) has formed the Planetary Defense Group, but none of its members have experience in invasion science. Invasion biologists in Australia consider this to be a serious oversight. They say we need more sophisticated protocols to prevent biological contamination from extraterrestrial environments to Earth and vice versa. “Given the vast research base in the science and management of invasive species,” biologists write, “we argue that closer collaboration between invasion biologists and astrobiologists would improve existing international planetary biosafety protocols — for both Earth and extraterrestrial bodies. that can contain life. “ Because right now it seems like our biosafety protocols are failing us. For example, when an Israeli spacecraft crashed into the moon in 2019, it threw dehydrated tardigrades onto the surface that may still be alive. Even more disturbing is the fact that strains of bacteria with signs of extreme resistance have also been isolated in NASA’s “clean rooms” where spacecraft are assembled by staff. If these dangerous microbes hitchhike into space, there is a chance that they will become even more dangerous in microgravity. First, preventing this is much easier than trying to deal with mutating organisms when they reach, say, Mars. Even so, however, some experts believe that keeping Earth’s microbes here on Earth can be nearly impossible. Wherever people went, we inevitably took organisms with us. Scientists warn that space is simply “the next frontier of biosafety risk.”

#### Antimicrobial resistance triggers extinction.

Srivatsa 17 [Kadiyali; specialist in pediatric intensive and critical care medicine in the UK. Invented the bacterial identification tool ‘MAYA’; 1-12-2017; "Superbug Pandemics and How to Prevent Them", American Interest; https://www.the-american-interest.com/2017/01/12/superbug-pandemics-and-how-to-prevent-them/, Accessed: 8-31-2021]

It is by now no secret that the human species is locked in a race of its own making with “superbugs.” Indeed, if popular science fiction is a measure of awareness, the theme has pervaded English-language literature from Michael Crichton’s 1969 Andromeda Strain all the way to Emily St. John Mandel’s 2014 Station Eleven and beyond. By a combination of massive inadvertence and what can only be called stupidity, we must now invent new and effective antibiotics faster than deadly bacteria evolve—and regrettably, they are rapidly doing so with our help. I do not exclude the possibility that bad actors might deliberately engineer deadly superbugs.1 But even if that does not happen, humanity faces an existential threat largely of its own making in the absence of malign intentions. As threats go, this one is entirely predictable. The concept of a “black swan,” Nassim Nicholas Taleb’s term for low-probability but high-impact events, has become widely known in recent years. Taleb did not invent the concept; he only gave it a catchy name to help mainly business executives who know little of statistics or probability. Many have embraced the “black swan” label the way children embrace holiday gifts, which are often bobbles of little value, except to them. But the threat of inadvertent pandemics is not a “black swan” because its probability is not low. If one likes catchy labels, it better fits the term “gray rhino,” which, explains Michele Wucker, is a high-probability, high-impact event that people manage to ignore anyway for a raft of social-psychological reasons.2 A pandemic is a quintessential gray rhino, for it is no longer a matter of if but of when it will challenge us—and of how prepared we are to deal with it when it happens. We have certainly been warned. The curse we have created was understood as a possibility from the very outset, when seventy years ago Sir Alexander Fleming, the discoverer of penicillin, predicted antibiotic resistance. When interviewed for a 2015 article, “The Most Predictable Disaster in the History of the Human Race,” Bill Gates pointed out that one of the costliest disasters of the 20th century, worse even than World War I, was the Spanish Flu pandemic of 1918-19. As the author of the article, Ezra Klein, put it: “No one can say we weren’t warned. And warned. And warned. A pandemic disease is the most predictable catastrophe in the history of the human race, if only because it has happened to the human race so many, many times before.”3 Even with effective new medicines, if we can devise them, we must contain outbreaks of bacterial disease fast, lest they get out of control. In other words, we have a social-organizational challenge before us as well as a strictly medical one. That means getting sufficient amounts of medicine into the right hands and in the right places, but it also means educating people and enabling them to communicate with each other to prevent any outbreak from spreading widely. Responsible governments and cooperative organizations have options in that regard, but even individuals can contribute something. To that end, as a medical doctor I have created a computer app that promises to be useful in that regard—of which more in a moment. But first let us review the situation, for while it has become well known to many people, there is a general resistance to acknowledging the severity and imminence of the danger. What Are the Problems? Bacteria are among the oldest living things on the planet. They are masters of survival and can be found everywhere. Billions of them live on and in every one of us, many of them helping our bodies to run smoothly and stay healthy. Most bacteria that are not helpful to us are at least harmless, but some are not. They invade our cells, spread quickly, and cause havoc that we refer to generically as disease. Millions of people used to die every year as a result of bacterial infections, until we developed antibiotics. These wonder drugs revolutionized medicine, but one can have too much of a good thing. Doctors have used antibiotics recklessly, prescribing them for just about everything, and in the process helped to create strains of bacteria that are resistant to the medicines we have. We even give antibiotics to cattle that are not sick and use them to fatten chickens. Companies large and small still mindlessly market antimicrobial products for hands and home, claiming that they kill bacteria and viruses. They do more harm than good because the low concentrations of antimicrobials that these products contain tend to kill friendly bacteria (not viruses at all), and so clear the way for the mass multiplication of surviving unfriendly bacteria. Perhaps even worse, hospitals have deployed antimicrobial products on an industrial scale for a long time now, the result being a sharp rise in iatrogenic bacterial illnesses. Overuse of antibiotics and commercial products containing them has helped superbugs to evolve. We now increasingly face microorganisms that cannot be killed by antibiotics, antifungals, antivirals, or any other chemical weapon we throw at them. Pandemics are the major risk we run as a result, but it is not the only one. Overuse of antibiotics by doctors, homemakers, and hospital managers could mean that, in the not-too-distant future, something as simple as a minor cut could again become life-threatening if it becomes infected. Few non-medical professionals are aware that antibiotics are the foundation on which nearly all of modern medicine rests. Cancer therapy, organ transplants, surgeries minor and major, and even childbirth all rely on antibiotics to prevent infections. If infections become untreatable we stand to lose most of the medical advances we have made over the past fifty years.

#### Ignore generic burnout and intervening actors ev—space viruses are uniquely bad c/a NW 21

### 1AC – Plan

#### Thus, I affirm the whole rez, “Appropriation of outer space by private entities is unjust”

#### The aff doesn’t have to prove solvency—the rez is a question of what it would be like if there was zero private space appropriation, it’s not a question of Ilaw or policy if we prove that it would be bad to go to space under our framework you can vote aff A] no actor means no action B] its in passive not active voice so it’s a value claim—this also means counterplans don’t negate since they don’t answer they question of whether space appropriation is unjust, they just say there might be another option.

#### Regulations fail – outer space is too big to enforce law on companies.

Torres 19 [Phil Torres is the director of the Project for Human Flourishing and the author of Morality, Foresight, and Human Flourishing: An Introduction to Existential Risks, Nautilus, “Why We Should Think Twice About Colonizing Space,” February 18th 2019, [https://nautil.us/blog/-why-we-should-think-twice-about-colonizing-space]/](https://nautil.us/blog/-why-we-should-think-twice-about-colonizing-space%5d/) lm

The point is that if individuals—you and I—can overcome the constant threat of harm posed by our neighbors by establishing a governing system, then maybe future species could get together and create some sort of cosmic governing system that could similarly guarantee peace by replacing anarchy with hierarchy. Unfortunately, this looks unpromising within the “cosmopolitical” realm. One reason is that for states to maintain law and order among their citizens, their various appendages—e.g., law enforcement, courts—need to be properly coordinated. If you call the police about a robbery and they don’t show up for three weeks, then what’s the point of living in that society? You’d be just as well off on your own! The question is, then, whether the appendages of a cosmic governing system could be sufficiently well-coordinated to respond to conflicts and make top-down decisions about how to respond to particular situations. To put it differently: If conflict were to break out in some region of the universe, could the relevant governing authorities respond soon enough for it to matter, for it to make a difference?

Probably not, because of the immense vastness of space. For example, consider again Epsilon Eridani b, Gliese 674 b, and Gliese 581 d. These are, respectively, 10.5, 14.8, and 20.4 light-years from Earth. This means that a signal sent as of this writing, in 2018, wouldn’t reach Gliese 581 d until 2038. A spaceship traveling at one-quarter the cosmic speed limit wouldn’t arrive until 2098, and a message to simply affirm that it had arrived safely wouldn’t return to Earth until 2118. And Gliese 581 is relatively close as far as exoplanets go. Just consider that he Andromeda Galaxy is some 2.5 million light-years from Earth and the Triangulum Galaxy about 3 million light-years away. What’s more, there are some 54 galaxies in our Local Group, which is about 10 million light-years wide, within a universe that stretches some 93 billion light-years across. These facts make it look hopeless for a governing system to effectively coordinate law enforcement activities, judicial decisions, and so on, across cosmic distances. The universe is simply too big for a government to establish law and order in a top-down fashion.

### 1AC – Framing

#### The value is morality.

#### The value criterion is maximizing expected well being.

#### 1] Actor specificity

#### ---A] Aggregation – every policy benefits some and harms others, which also means side constraints freeze action.

#### ---B] No act-omission distinction – choosing to omit is an act itself – governments actively decide not to act so there is no omission

#### 2] Util is a lexical pre-requisite to any other framework: Threats to life preclude the ability for moral actors to effectively utilize and act upon other moral theories since they are in a constant state of crisis – that inhibits the ideal moral conditions which other theories presuppose.

#### 3] Extinction matters under any framework:

#### ---A] It precludes the possibility of any kind of moral value – we can’t confer value onto anything if we’re not alive.

#### ---B] Future generations means infinite magnitude – we have to look towards future lives too

### 1AC – Underview

#### 1] Presumption affirms –

#### A] We presume things to be true until proven false – i.e. if I told you my name was Leo, you’d believe me.

#### B] We wouldn’t be able to start a strand of reasoning otherwise – answering this proves since any arguments presumes that the rules of logic are true.

#### 2] Permissibility affirms –

#### A] Actions fall into three moral categories – obligatory, prohibited, or permissible. Even if I fail to prove that the action of the res is obligatory, if my opponent fails to prove it’s morally prohibited then it’s permissible.

#### B] Anything else freezes all actions since it would require giving justifications to do frivolous things like drink water.

#### 3] 1AR theory –

#### ---A] AFF gets it because otherwise the neg can engage in infinite abuse, making debate impossible. No 2n theory – kills resolvability because judge has to intervene in weighing interp and 2ar counterinterp.

#### ---B] drop the debater – the short 1AR irreparably skewed from abuse on substance and time investment on theory.