### Framework

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

#### I value justice, due to its use in the resolution. The standard is maximizing expected wellbeing.

#### Only the consequences of any action should be analyzed because first, only they are measurable and verifiable, and second, only consequences have an intrinsic impact on others such as harm or death.

When evaluating consequences, we should prioritize high magnitude impacts since they cause more suffering and violence.  
Whittlestone 17 – (Jess Whittlestone, PhD in Behavioural Science and has worked as a policy consultant for government, specialising in security and foreign policy. She also has experience as a freelance journalist for a number of online magazines, including Quartz, Vox, and Aeon. Before her PhD, she studied Maths and Philosophy at Oxford, and played a key role in developing 80,000 Hours' coaching process and research. Currently, Jess is a Postdoctoral Research Associate at the Leverhulme Centre for the Future of Intelligence at Cambridge, “The Long-Term Future”, Effective Altruism, 11-16-17, Available Online at <https://www.effectivealtruism.org/articles/cause-profile-long-run-future/>, accessed 12-4-18, HKR-AM)

The number of people alive today pales in comparison to the number who could exist in the future. It may therefore be extremely important to ensure that human civilization flourishes far into the future, enjoying fulfilling lives free of suffering. There are a number of ways we might work to ensure a positive future for humanity. We could work to better understand and prevent extinction risks - catastrophic events that have the potential to destroy all life on this planet.[1] We may want to focus on the broader category of existential risks- events that could dramatically and irreversibly curtail humanity’s potential.[2] Or we might focus on increasing the chance that the lives of our descendants are positive in other ways: for example, improving democracy or the ability of institutions to make good decisions. Attempts to shape the long-term future seem highly neglected relative to the problems we face today. There are fewer incentives to address longer-term problems, and they can also be harder for us to take seriously. It is, of course, hard to be certain about the impact of our actions on the very long-term future. However, it does seem that there are things we can do - and given the vast scale we are talking about, these actions could therefore have an enormous impact in expectation. This profile sets out why you might want to focus your altruistic efforts on the long-term future - and why you might not. You may be particularly inclined to focus on this if you think we face serious existential threats in the next century, and if you’re comfortable accepting a reasonable amount of uncertainty about the impact you are having, especially in the short-term. The case for the long-term future as a target of altruism The case for focusing on the long-term future can be summarised as follows: The long-term future has enormous potential for good or evil: our descendants could live for billions or trillions of years, and have very high-quality lives; It seems likely there are things we can do today that will affect the long-term future in non-negligible ways; Possible ways of shaping the long-term future are currently highly neglected by individuals and society; Given points 1 to 3 above, actions aimed at shaping the long-term future seem to have extremely high expected value, higher than any actions aiming for more near-term benefits. Below we discuss each part of this argument in more detail. The long-term future has enormous potential Civilisation could continue for a billion years, until the Earth becomes uninhabitable.[3] It’s hard to say how likely this is, but it certainly seems plausible - and putting less than, say, a 1% chance on this possibility seems overconfident.[4] You may disagree that 1% is a reasonable lower bound here, but changing the figure by an order of magnitude or two would still yield an extremely impressive result. And even if civilisation only survives for another million years, that still amounts to another ~50,000 generations of people, i.e. trillions of future lives.[5] If our descendants survive for long enough, then they are likely to advance in ways we cannot currently imagine - even someone living a few hundred years ago could not possibly have imagined the technological advances we’ve made today. It is possible they might even develop technology enabling them to reach and colonise planets outside our solar system, and survive well beyond a billion years.[6] Let’s say that if we survive until the end of the Earth’s lifespan, there is a 1% chance of space colonisation. This would make the overall probability of survival beyond Earth 1 in 10,000 (1% chance of surviving to a billion years, multiplied by a 1% chance of surviving further given that). This sounds incredibly low, but suppose that space colonisation could allow our descendants to survive up to 100 trillion years[7]. This suggests we could have up to 1/10,000 x 100 trillion years = 10 billion expected years of civilisation ahead of us. If we expect life in the future to be, on average, about as good as the present, then this would make the whole of the future about 100 million times more important than everything that has happened in the last 100 years. In fact, it seems like there could be more people in the future with better lives than those living today: economic, social, and technological progress could enable us to cure diseases, lift people out of poverty, and better solve other problems. It also seems possible that people in the future will be more altruistic than people alive today[8] - which also makes it more likely that they will be motivated to create a happy and valuable world. However, it’s precisely because of this enormous potential that it’s so important to ensure that things go as well as possible. The loss of potential would be enormous if we end up on a negative trajectory. It could result in a great deal of suffering or the end of life.[9] And just as the potential to solve many of the world’s problems is growing, threats seem to be growing too. In particular, advanced technologies and increasing interconnectedness pose great risks.[10] There are things we can do today that could affect the long-term future There are a number of things we could work on today that seem likely to influence the long-term future: Reducing extinction risks: We could reduce the risk of catastrophic climate change by putting in place laws and regulations to cut carbon emissions. We could reduce the risks from new technologies by investing in research to ensure their safety. Alternatively, we could work to improve global cooperation so that we are better able to deal with unforeseen risks that might arise. Changing the values of a civilisation: Values tend to be stable in societies,[11] so attempts to shift values, whilst difficult, could have long-lasting effects. Some forms of value change, like increasing altruism, seem robustly good, and may be a way of realizing the very best possible futures. However, spreading poorly considered values could be harmful. Reducing suffering risks: Historically, technological advances have enabled great welfare improvements (e.g. through modern agriculture and medicine), but also some of the greatest sources of present-day suffering (e.g. factory farming). To prevent the worst risks from new technologies, we could improve global cooperation and work on specific problems like preventing worst-case outcomes from artificial intelligence. “Speeding up” development: Boosting technological innovation or scientific progress could have a lasting “speed up” effect on the entire future, making all future benefits happen slightly earlier than they otherwise would have. Curing a disease just a few years earlier could save millions of lives, for example. (That said, it’s not clear whether speeding up development is good or bad for existential risk - developing new technologies faster might help us to mitigate certain threats, but pose new risks of their own.) Ripple effects of our ordinary actions: Improvements in health not only benefit individuals directly but allow them to be more economically successful, meaning that society and other individuals have to invest less in supporting them. In aggregate, this could easily have substantial knock-on effects on the productivity of society, which could affect the future. Other ways we might create positive trajectory changes: These include improving education, science, and political systems. Paul Christiano also points out that even if opportunities to shape the long-term future with any degree of certainty do not exist today, they may well exist in the future. Investing in our own current capacity could have an indirect but large impact by improving our ability to take such opportunities when they do arise. Similarly, we can do research today to learn more about how we might be able to impact the long-term future. The long-term future is neglected, especially relative to its importance Attempts to shape the long-term future are neglected by individuals, organisations and governments. One reason is that there is little incentive to focus on far-off, uncertain issues compared to more certain, immediate ones. As 80,000 Hours put it, “Future generations matter, but they can’t vote, they can’t buy things, they can’t stand up for their interests.” Problems faced by future generations are also more uncertain and more abstract, making it harder for us to care about them. There is a well-established phenomenon called temporal discounting, which means that we tend to give less weight to outcomes that are far in the future. This may explain our tendency to neglect long-term risks and problems. For example, it’s a large part of why we seem to have such difficulty tackling climate change. Generally, there are diminishing returns to additional work in an area. This means that the neglectedness of the long-term future makes it more likely to be high impact. Efforts to shape the long-term future could be extremely high in expected value Even if the chance of our actions influencing the long-term trajectory of humanity is relatively low, there are extremely large potential benefits, which mean that these actions could still have a very high expected value. For example, decreasing the probability of human extinction by just one in a million could result in an additional 1,000 to 10,000 expected years of civilisation (using earlier assumptions).[12] Compare this to actions we could take to improve the lives of people alive today, without looking at longer-run effects. A dramatic victory such as curing the most common and deadly diseases, or ending all war, might only make the current time period (~100 years) about twice as good as otherwise.[13] Though this seems like an enormous success, given the calculations above, decreasing the probability of human extinction would be 10 or 100 times better in expectation. We might want to adjust this naive estimate downwards slightly, however, given uncertainty about some of the assumptions that go into it - we could be wrong about the probability of humanity surviving far into the future, or about the value of the future (if we think that future flourishing might have diminishing value, for example.) However, even if we think these estimates should be adjusted downwards substantially, we might very conservatively imagine that reducing the likelihood of existential risk by one in a million only equates to 100 expected years of civilization. This still suggests that the value of working to reduce existential risk is comparable to the value of the biggest victories we could imagine in the current time period - and so well worth taking seriously.

### C1: Innovation

#### Contention 1 is innovation.

#### Strong commercial space catalyzes tech innovation – research and development for private appropriation is key

Joshua Hampson 2017, Security Studies Fellow at the Niskanen Center, 1-25-2017, “The Future of Space Commercialization”, Niskanen Center, https://republicans-science.house.gov/sites/republicans.science.house.gov/files/documents/TheFutureofSpaceCommercializationFinal.pdf

Innovation is generally hard to predict; some new technologies seem to come out of nowhere and others only take off when paired with a new application. It is difficult to predict the future, but it is reasonable to expect that a growing space economy would open opportunities for technological and organizational innovation. In terms of technology, the difficult environment of outer space helps incentivize progress along the margins. Because each object launched into orbit costs a significant amount of money—at the moment between $27,000 and $43,000 per pound, though that will likely drop in the future —each 19 reduction in payload size saves money or means more can be launched. At the same time, the ability to fit more capability into a smaller satellite opens outer space to actors that previously were priced out of the market. This is one of the reasons why small, affordable satellites are increasingly pursued by companies or organizations that cannot afford to launch larger traditional satellites. These small 20 satellites also provide non-traditional launchers, such as engineering students or prototypers, the opportunity to learn about satellite production and test new technologies before working on a full-sized satellite. That expansion of developers, experimenters, and testers cannot but help increase innovation opportunities. Technological developments from outer space have been applied to terrestrial life since the earliest days of space exploration. The National Aeronautics and Space Administration (NASA) maintains a website that lists technologies that have spun off from such research projects. Lightweight 21 nanotubes, useful in protecting astronauts during space exploration, are now being tested for applications in emergency response gear and electrical insulation. The need for certainty about the resiliency of materials used in space led to the development of an analytics tool useful across a range of industries. Temper foam, the material used in memory-foam pillows, was developed for NASA for seat covers. As more companies pursue their own space goals, more innovations will likely come from the commercial sector. Outer space is not just a catalyst for technological development. Satellite constellations and their unique line-of-sight vantage point can provide new perspectives to old industries. Deploying satellites into low-Earth orbit, as Facebook wants to do, can connect large, previously-unreached swathes of 22 humanity to the Internet. Remote sensing technology could change how whole industries operate, such as crop monitoring, herd management, crisis response, and land evaluation, among others. 23 While satellites cannot provide all essential information for some of these industries, they can fill in some useful gaps and work as part of a wider system of tools. Space infrastructure, in helping to change how people connect and perceive Earth, could help spark innovations on the ground as well. These innovations, changes to global networks, and new opportunities could lead to wider economic growth.

#### Private space endeavors are fueling innovation

Alexandro Pando 17, data-informed multinational serial entrepreneur and innovator who assists and creates companies worldwide., 10-30-2017, "Space Industry Booms Thanks To Investors," Forbes, https://www.forbes.com/sites/forbestechcouncil/2017/10/30/space-industry-booms-thanks-to-investors/#525058d355d3

The space travel industry is currently witnessing the dawn of a new age -- one where huge budgets and a heightened investor interest are fueling a surge of innovation and the development of more efficient technologies. This picture is similar to what was obtainable in the 20th century, save for one critical change: Instead of the government, private investors with what some might describe as largely ambitious plans are the brains behind this 21st-century push to test the limits of space travel. Billionaire Space Race Following SpaceX’s 2010 launch/retrieval and 2012 docking on the International Space Station, the prior undercover industry of commercial space travel immediately garnered massive media coverage and worldwide followership. SpaceX’s daunting achievements ignited a modern-day space race championed by private investor-backed companies all with a similar goal of establishing man’s presence in space. The success of these space travel early birds -- notably SpaceX, Jeff Bezos' Blue Origin and Richard Branson’s Virgin Galactic -- sent a ripple through the industry, spurring a new wave of space investors determined to join the train in the race to conquer the stars. From just 125 private space agencies in 2011, the industry has expanded to almost 1,000, and it is projected that by 2026 this figure will rise to 10,000. This influx of new private investors and space companies has heightened the bar for innovation in the sector. Challenges thought to be previously insurmountable have been scaled, and newer more efficient tech is being developed. Blue Origin, for instance, went on to successfully launch and re-land a rocket on earth. And since that first launch, the spacecraft has gone on to complete four similar runs using the same New Shepard booster rocket that was used in the first test flight: an un-replicated feat that portends drastic budget cuts in future space travels. For other space companies like Virgin Galactic, the emphasis has been creating a more conducive environment for intending space tourists. Unlike SpaceX and Blue Origin, which have an interest in hauling space cargo, Virgin Galactic is primarily invested in shuttling individuals between earth and space at an estimated cost-per-head of $250,000. Space Revolution Before private sector intervention in space travel, it cost the U.S. government approximately $70 million to ferry U.S. astronauts to the ISS via Russian Soyuz rockets. Thanks to the sustained efforts of the new space companies, this figure is bound to drop in the near feature. SpaceX, in particular, plans to shuttle 100 individuals to Mars for a paltry $100,000 per ticket and proposes city-to-city travel by rocket. Moreover, SpaceX has a creative marketing strategy that keeps increasing interest in the space industry. The influx of more private investors into the sector means that there is fertile ground for competition to thrive. This quest to be the first -- the same thing that catalyzed the space race between the Soviet Union and the U.S. -- continues to push private space companies toward the limit of innovation. By propelling innovation and tech efficiency, the private sector has come to establish itself as a key driver to the actualization of the space dream. Challenges Modern space vehicles, no doubt, are cheaper to operate than their predecessors. But even at that, the cost implications of space travel are still enormous. SpaceX's anticipated Falcon Heavy moon landing is expected to burn through $90 million, and even though this pales in comparison to NASA’s SLS moon landing budget of over $2 billion, it still highlights just how much money is needed to power humanity’s dream of colonizing Mars. Aside from the issue of finance, there’s that of debuting innovation that matches our goals and the growing concerns about the safety of space vehicles, the latter garnering more attention in recent times. Virgin Galactic’s fatal accident in 2014 was a clear reminder of the safety risks associated with space. If commercial space travel is to become a thing in the nearest future, prospective customers need to have an assurance of safety. Looking Forward Among other things, the transition from a government-backed, highly regulated industry to a private sector-driven environment where competition thrives has created a highly profitable market for investors. Given the current volume of investments and the present milestones achieved, it goes without saying that what we are witnessing today are just baby steps in comparison to what the future holds regarding space travel. For an endeavor that individuals like Stephen Hawking have appropriately tagged as life insurance for the preservation of the human race, space travel is worth all the hype.

#### Tech innovation is crucial and solves impending threats, which outweigh the affirmative’s impacts

Dylan **Matthews 18**. Co-founder of Vox, citing Nick Beckstead @ Rutgers University. 10-26-2018. "How to help people millions of years from now." Vox. https://www.vox.com/future-perfect/2018/10/26/18023366/far-future-effective-altruism-existential-risk-doing-good

If you care about improving human lives, you should overwhelmingly care about those quadrillions of lives rather than the comparatively small number of people alive today. The 7.6 billion people now living, after all, amount to less than 0.003 percent of the population that will live in the future. It’s reasonable to suggest that those quadrillions of future people have, accordingly, hundreds of thousands of times more moral weight than those of us living here today do. That’s the basic argument behind Nick Beckstead’s 2013 Rutgers philosophy dissertation, “On the overwhelming importance of shaping the far future.” It’s a glorious mindfuck of a thesis, not least because Beckstead shows very convincingly that this is a conclusion any plausible moral view would reach. It’s not just something that weird utilitarians have to deal with. And Beckstead, to his considerable credit, walks the walk on this. He works at the Open Philanthropy Project on grants relating to the far future and runs a charitable fund for donors who want to prioritize the far future. And arguments from him and others have turned “long-termism” into a very vibrant, important strand of the effective altruism community. But what does prioritizing the far future even mean? The most literal thing it could mean is preventing human extinction, to ensure that the species persists as long as possible. For the long-term-focused effective altruists I know, that typically means identifying concrete threats to humanity’s continued existence — like unfriendly artificial intelligence, or a pandemic, or global warming/out of control geoengineering — and engaging in activities to prevent that specific eventuality. But in a set of slides he made in 2013, Beckstead makes a compelling case that while that’s certainly part of what caring about the far future entails, approaches that address specific threats to humanity (which he calls “targeted” approaches to the far future) have to complement “broad” approaches, where instead of trying to predict what’s going to kill us all, you just generally try to keep civilization running as best it can, so that it is, as a whole, well-equipped to deal with potential extinction events in the future, not just in 2030 or 2040 but in 3500 or 95000 or even 37 million. In other words, caring about the far future doesn’t mean just paying attention to low-probability risks of total annihilation; it also means acting on pressing needs now. For example: We’re going to be better prepared to prevent extinction from AI or a supervirus or global warming if society as a whole makes a lot of scientific progress. And a significant bottleneck there is that the vast majority of humanity doesn’t get high-enough-quality education to engage in scientific research, if they want to, which reduces the odds that we have enough trained scientists to come up with the breakthroughs we need as a civilization to survive and thrive. So maybe one of the best things we can do for the far future is to improve school systems — here and now — to harness the group economist Raj Chetty calls “lost Einsteins” (potential innovators who are thwarted by poverty and inequality in rich countries) and, more importantly, the hundreds of millions of kids in developing countries dealing with even worse education systems than those in depressed communities in the rich world. What if living ethically for the far future means living ethically now? Beckstead mentions some other broad, or very broad, ideas (these are all his descriptions): Help make computers faster so that people everywhere can work more efficiently Change intellectual property law so that technological innovation can happen more quickly Advocate for open borders so that people from poorly governed countries can move to better-governed countries and be more productive Meta-research: improve incentives and norms in academic work to better advance human knowledge Improve education Advocate for political party X to make future people have values more like political party X ”If you look at these areas (economic growth and technological progress, access to information, individual capability, social coordination, motives) a lot of everyday good works contribute,” Beckstead writes. “An implication of this is that a lot of everyday good works are good from a broad perspective, even though hardly anyone thinks explicitly in terms of far future standards.” Look at those examples again: It’s just a list of what normal altruistically motivated people, not effective altruism folks, generally do. Charities in the US love talking about the lost opportunities for innovation that poverty creates. Lots of smart people who want to make a difference become scientists, or try to work as teachers or on improving education policy, and lord knows there are plenty of people who become political party operatives out of a conviction that the moral consequences of the party’s platform are good. All of which is to say: Maybe effective altruists aren’t that special, or at least maybe we don’t have access to that many specific and weird conclusions about how best to help the world. If the far future is what matters, and generally trying to make the world work better is among the best ways to help the far future, then effective altruism just becomes plain ol’ do-goodery.\*

### C2: Russia

#### Contention 2 is Russian Aggression.

#### Russia’s international ambitions are low now due to space sector failures.

AFP 19 (Agence France-Presse - international news agency headquartered in Paris, “Moscow, we have a problem: theft plagues Russia’s space sector,” 5-28-2019, https://www.scmp.com/news/world/russia-central-asia/article/3012088/moscow-we-have-problem-theft-plagues-russias-space)

With millions of dollars missing and officials in prison or fleeing the country, Russia’s space sector is at the heart of a staggering embezzlement scheme that has dampened ambitions of recovering its Soviet-era greatness. For years, Moscow has tried to fix the industry that was a source of immense pride in the USSR. While it has bounced back from its post-Soviet collapse and once again become a major world player, the Russian space sector has recently suffered a series of humiliating failures. And now, massive corruption scandals at state space agency Roscosmos have eclipsed its plans to launch new rockets and lunar stations. “Billions (of roubles) are being stolen there, billions,” Alexander Bastrykin, the powerful head of Russia’s Investigative Committee – Russia’s equivalent of the FBI – said in mid-May. Investigations into corruption at Roscosmos have been ongoing “for around five years and there is no end in sight,” he added. In the latest controversy, a senior space official appears to have fled Russia during an audit of the research centre he headed. Yury Yaskin, the director of the Research Institute of Space Instrumentation, left Russia for a European country in April where he announced his resignation, the Kommersant paper reported. He feared the discovery of malpractice during an inspection of the institute, according to the newspaper’s sources. Roscosmos confirmed that Yaskin had resigned but did not clarify why. His Moscow institute is involved in developing the Russian satellite navigation system GLONASS designed to compete with the American GPS system. Corruption has particularly affected Russia’s two most important space projects of the decade: GLONASS and the construction of the country’s showpiece cosmodrome Vostochny, built to relieve Moscow’s dependence on Baikonur in ex-Soviet Kazakhstan. Almost all major companies in the sector, including rocket builders Khrunichev and Progress, have been hit by financial scandals that have sometimes led to prison sentences for large-scale fraud. Russia’s Audit Chamber, a parliamentary body of financial control, estimated that 760 billion roubles (around US$11.7 million) was misappropriated from Roscosmos in 2017, or nearly 40 per cent of the total misappropriated from the entire economy that year. Roscosmos said that “eradicating corruption” is one of its “primary goals”, adding that it regularly cooperates with investigations by the authorities. In mid-April, President Vladimir Putin stressed the need to “progressively resolve the obvious problems that slow down the development of the rocket-space sector.” “The time and financial frameworks to realise space projects are often unjustified,” the Russian leader Rebooting the space sector is a matter of prestige for the Kremlin. It symbolises its renewed pride and ability to be a major global power, especially in the context of increased tensions with the United States.

#### Space cooperation with the U.S. boosts Russia’s diplomatic leverage and international prestige

Juul 19 (Peter - senior policy analyst at the Center for American Progress, “Trump’s Space Force Gets the Final Frontier All Wrong,” 3/20/19, <https://foreignpolicy.com/2019/03/20/trumps-space-force-gets-the-final-frontier-all-wrong/>)

But funding isn’t everything, and in the new geopolitical context, democracy must be seen to work effectively. When it comes to space exploration, that means ratcheting back U.S. space cooperation with Russia as well as forgoing any equally intimate cooperation with China and its secretive space agency. The fact that the head of Russia’s space agency remains under U.S. sanctions for his role in Moscow’s military intervention in Ukraine illustrates the hazards involved in working with autocracies in space. Deep cooperation with autocratic powers in space gives autocracies a major point of diplomatic leverage over the United States, and more generally allows them to poach unearned international prestige by working on goals set and largely carried out by the United States. In today’s world, there’s no reason for the United States to give Russia or China this sort of standing by association.

#### Increased international prestige lays the foundation for Russian territorial expansion and foreign policy aggression

Gurganus 19 (Julia - nonresident scholar with the Russia and Eurasia Program at the Carnegie Endowment for International Peace & Eugene Rumer - senior fellow and the director of Carnegie’s Russia and Eurasia Program, “Russia’s Global Ambitions in Perspective,” 2/20/19, https://carnegieendowment.org/2019/02/20/russia-s-global-ambitions-in-perspective-pub-78067)

. Elsewhere, long-term conflicts, such as those in Afghanistan, Iraq, and Libya, or the unfinished business of post-conflict reconstruction, such as in the Balkans, have presented Russia with opportunities to insert itself and create new facts on the ground. In the United States and Europe, growing political divisions, the proliferation of information providers, and popular frustration with governing elites in the wake of the 2008 global financial crisis have exposed targets for Russian interference. Russian agents did not cause these long-term conflicts or cleavages inside Western societies, but they have used them to advance their goals, which vary depending on the circumstances. In many instances, the Kremlin has relied on a diverse toolkit that creates the appearance of operating one step removed from the Russian government (through a range of actors including state-owned corporations such as Rosatom and Rosneft, private security companies such as the Wagner Group, organized crime syndicates, hackers, and information operation organizations such as the Internet Research Agency). Western perceptions of post-Soviet Russia have been heavily affected by the country’s economic and political implosion and foreign policy retreat during the 1990s. Against that backdrop, the ambition and dynamism of Russian foreign policy since Putin’s 2012 return to the presidency appears to be a relatively new phenomenon. It isn’t. Moscow’s post-2012 foreign policy fits comfortably in the long-standing historical and intellectual tradition of Soviet and even pre-Soviet Russian foreign policy. THE TROIKA OF RUSSIAN FOREIGN POLICY Contemporary Russian foreign policy displays the unmistakable presence of three centuries-old drivers of Moscow’s posture on the world stage. Chief among these drivers is Russia’s quest for strategic depth and secure buffers against external threats, which, considering the country’s geography and absence of natural protective barriers between it and neighboring powers, has guided its geographic expansion. Along with physical insecurity and expansion, the second key driver of Russian foreign policy has been its ambition for recognition as a great power, which the Kremlin has long seen as necessary for legitimizing its geographic conquests and geopolitical ambitions. The third driver, related to the first two, is Russia’s complicated relationship with the West, which combines rivalry with the need for cooperation. These recurrent themes are important. They highlight the degree to which Russian foreign policy in the Putin era is a continuation of many pursuits that are, by turns, decades- and centuries-old and were embraced by previous Russian governments regardless of their political persuasion. The historical record also performs an important legitimizing function for the citizens of the Russian state, which is less than three decades old, cementing the state’s claim to be the heir to a long, illustrious tradition dating back centuries. References to this tradition thus legitimize the Putin government’s ambitious overseas pursuits and present them as a matter of historical continuity and as an integral part of what Russia is. GEOGRAPHY AND STRATEGIC DEPTH It is hard to overestimate the role of geography as a driver behind Russia’s foreign policy. The Russian state and its security policy have been shaped by the absence of natural geographic barriers—oceans, rivers, or mountains.2 Geography has shaped Russian identity and its rulers’ understanding of security throughout the entire existence of the Russian state. Throughout the centuries, contemporary Russia, the Soviet Union, imperial Russia, and the principality of Muscovy have all faced the challenge of securing a vast stretch of territory from neighbors perceived to be hostile to the west, south, and east. To secure its territory, the Russian state acquired more territory, which, in turn, had to be secured from ever-present external threats of one kind or another. In the words of historian Stephen Kotkin, “Whatever the original causes behind early Russian expansionism—much of which was unplanned—many in the country’s political class came to believe over time that only further expansion could secure the earlier acquisitions. Russian security has thus traditionally been partly predicated on moving outward, in the name of preempting external attack.”3 The loss of territory, as was the case after the two great dislocations Russia experienced in the twentieth century—first after the 1917 revolution and the 1918 Brest-Litovsk Treaty, and later after the 1991 breakup of the Soviet Union—resulted in a profound sense of Russian insecurity and a renewed quest to regain strategic depth. Regaining that depth was the key task of the Soviet government as soon as the country began to recover from the trauma of the revolution and the civil war, and again after Moscow regained a measure of strength after the collapse of the 1990s. GREAT POWER AMBITIONS The quest for recognition as a great power has been both the result of Russia’s geographic expansion and its driver. Geographic expanse was and is, in the eyes of Russian leaders, central to their claim to recognition as a great power. Such recognition, in turn, has been needed to lend a veneer of legitimacy to territorial conquests. Perhaps precisely because they have had to struggle repeatedly for such recognition, Russia’s rulers have been particularly sensitive to any suggestion that Russia does not belong in the ranks of major powers. In the mid-nineteenth century, Russian historian and writer Nikolay Danilevsky complained about Russia’s unfair treatment by Europe, which had turned a blind eye to Prussian and Austrian aggression against Denmark following the annexation of two Danish provinces yet criticized Russia’s efforts to protect the rights of its coreligionists in “barbaric” Turkey.4 Danilevsky’s complaint was, in effect, a precursor of Putin’s lament about the West’s double standards in dealing with Russia’s annexation of Crimea and the severing of Kosovo from Serbia.5 For the leaders of the independent Russia that emerged from the Soviet collapse, the Soviet and Russian imperial legacy appeared to serve as both an inspiration and a justification for their claim to great power status. They found ample philosophical rationales for their claim. In the words of noted Russian political philosopher Nikolai Berdyaev, empire and great power status constitute the essence of Russian identity even when the country is experiencing challenges and setbacks, in large part because of its spiritual and material wealth.6 As early as 1993, the official Foreign Policy Concept of the Russian Federation included, among other foreign policy priorities, the objectives of “furthering integration of the Commonwealth of Independent States” and ensuring Russia’s active role on the world stage as a “great power.”7 With Primakov’s rise to the helm of the Russian foreign policy establishment in 1996, great power ambitions again became the Kremlin’s driving force. In his first news conference as foreign minister, Primakov said, “Despite the present difficulties, Russia was and is a great power and its foreign policy should correspond with that.”8 Putin embraced this vision when he became president in 2000, and it has served as a cornerstone of his leadership ever since. Of particular importance to the Putin government has been the military record of the Russian state and its numerous conquests. Putin issued a presidential order in 2012 reconstituting the Russian Military-Historical Society.9 Long-serving Russian Culture Minister Vladimir Medinsky has been an active patron of the society as well. The expansion of the Russian state by force of arms—including numerous victories over Poland, Sweden, the Ottoman Empire, and Central Asia—make up an integral part of the foundational narrative of the contemporary Russian state. This narrative is reinforced by a sprawling state propaganda apparatus, official government activities, and educational curricula. Several historical events are featured prominently in this narrative. Russia’s defeat of Napoleon has been treated as a uniquely important event because of its significance to the European order in the nineteenth century, as well as for being an accomplishment that cemented Russia’s status as a great power. The victory over Nazi Germany in World War II is treated as the crowning achievement of the Soviet state, which saved not just the Soviet Union and Europe but the whole world from fascism. This triumph presently makes up the most important part of Russia’s national narrative. As a whole, this legacy provides both the justification and the motivation for Russia to pursue its ambitions not just around its vast periphery but well beyond its shores. UNEASY RELATIONS WITH THE WEST Moscow’s uneasy relationship with the West for centuries has been one of the most prominent features of its foreign policy. On the one hand—from Peter the Great’s founding of the new Russian capital on the Baltic shores to Catherine the Great’s engagement with leading European Enlightenment thinkers of the day, Czar Alexander I’s securing Russia’s place in the circle of major European powers to Joseph Stalin’s consolidation of the Soviet Union’s hold on Eastern Europe—Russia long has been an integral part of Europe and its political and security fabric. On the other hand, throughout Russian history since the time of Peter the Great, Russian elites, political thinkers, and cultural figures have questioned Russia’s European choice and relationship with Europe. In a more recent and very telling sign of that ambivalence, Foreign Minister Lavrov wrote in 2016 that, over the centuries, Russia has seen itself as part of Europe and the West, as better than the West, as different and unique from the West, and as representing a crucial link between the East and the West.10 The biggest obstacle that has kept Russia from having a closer and more stable relationship with Europe, according to Lavrov, has been Europe’s inability or unwillingness to simply let Russia be Russia, and its insistence on having Moscow conform to European norms—something that no Russian leader or the people of Russia would ever accept. Moscow’s claim to great power status has derived from its victories in the West, against Napoleon and Hitler. But Russia’s biggest setbacks too have been delivered by the West—in the Crimean War and in the Cold War—and these setbacks remain the biggest drivers of Moscow’s security and defense policy.11 As was the case during the Cold War, Russian policy toward the West has long had an important ideological dimension. During the Soviet era, the ideological competition was between Soviet communism and democratic capitalism. After a relatively brief period when Russia attempted to join the West, Moscow has embraced an overtly anti-Western ideology. Communism has been replaced by a mix of nationalist, authoritarian, and state-capitalist ideas as an alternative to the West’s notion of liberal democratic capitalism. The concept of Russia as a besieged fortress facing hostile Western designs and influences is a key tool the regime uses to mobilize the political support of Russian elites and ordinary citizens alike. OLD HABITS DON’T DIE In addition to a legacy of complicated geopolitics, great power ambitions, and a difficult relationship with the West, the new Russian state has inherited from its Soviet predecessor a time-tested foreign policy toolkit. While some elements of this toolkit fell into disuse early in the post-Soviet period when Russia was struggling with a series of domestic crises, these tools have been taken up again by the country’s foreign policy and national security establishment as Moscow has returned to the world stage as an increasingly assertive actor. George Kennan wrote in “The Sources of Soviet Conduct”: . . . the Kremlin is under no ideological compulsion to accomplish its purposes in a hurry . . . and it can afford to be patient. These precepts are fortified by the lessons of Russian history: of centuries of obscure battles between nomadic forces over the stretches of a vast unfortified plain. Here caution, circumspection, flexibility and deception are the valuable qualities . . . Its [the Soviet Union’s] political action is a fluid stream which moves constantly, wherever it is permitted to move, toward a given goal. . . . The main thing is that there should always be pressure, unceasing constant pressure, toward the desired goal. There is no trace of any feeling in Soviet psychology that that goal must be reached at any given time.12 Russian foreign policy in the Putin era fits Kennan’s description from more than half a century ago. The Kremlin’s approach has involved the relatively low-cost, limited use of military force in combination with other nonmilitary instruments of national power. Information operations, propaganda and disinformation, cyber operations, trade embargoes, and a vast array of other tools have been integrated into what has become commonly known as hybrid warfare. The current policy discussions in Western capitals often create the impression that Moscow has come up with a fundamentally new toolkit. In reality, an extensive reliance on such tools has long been a feature of Russian domestic politics and foreign policy.

#### Russian territorial expansion causes conflict with the US and NATO

O’Hanlon 19 (Michael – PhD from Princeton in Public and International Affairs and currently a senior fellow at the Brookings Institute, “The Senkaku Paradox: Risking Great Power War Over Small Stakes,” p. 34-37, 4/30/19, Dartmouth Libraries)

As such, the United States and NATO partners would undoubtedly feel intense pressure, at the first sign of visible preparations for attack by Russia, to disable Russia’s surveillance and command and control capabilities and to preempt any missiles or aircraft or submarines before they could get within range of the target. That could, of course, entail direct attacks against airfields, ports, and other facilities on Russian soil, not just those that happened to be directly involved in the Baltic state occupation. In other words, NATO might strike first, rather than leave itself vulnerable to ambush. In light of the alliance’s consensus decision-making procedures, that possibility seems unlikely—but it must also be remembered that this scenario is premised on a situation in which Russian forces occupy at least a small swath of NATO territory, so certain thresholds would already have been crossed by enemy action. Regardless, the stage would be set for an extremely dangerous dynamic. If any initial conventional engagements went against its interests, Russia might also consider limited nuclear employment options. Indeed, some of its strategists currently entertain an “escalate to de-escalate” concept that would attempt to intimidate NATO allies into reversing their plans. Russia might detonate a nuclear weapon high in the atmosphere to create a powerful nuclear-induced electromagnetic pulse (EMP) that could prove lethal to air defense radars, military communications systems, and much civilian infrastructure over a region many hundreds of kilometers in radius. A Russian EMP burst using a high-altitude nuclear weapon would be an extremely provocative and risky move, to be sure.57 But some Russian leaders could argue that it was not strictly speaking a nuclear attack, since no humans would be killed by the direct explosive effects of such a weapon—and thus might delude themselves into thinking it was a relatively low-risk option. In fact, the risks could be very high. Some types of EMP attacks (or even cyberattacks) by Russia could disable large chunks of the U.S. or European electricity grids for many months.58 A severe attack of this type might even lead to a U.S. nuclear response, in light of the new nuclear doctrine of the Trump administration.59 Beyond the EMP option, Russia could use nuclear weapons directly against ships that carried military equipment, missile defense radars, or other capabilities. Indeed, it threatened to target nuclear missiles at any Danish ships joining the U.S.-led missile defense effort in 2015. Again, the provocation would be enormous—but the direct human stakes might be fairly limited, since only dozens of sailors, or at most a couple hundred, might be on a given naval vessel.60 Moscow might, perhaps delusionally, think the risks were acceptable. Of course, there would be enormous significance and risk to crossing the nuclear threshold in any way. But if weapons were used against isolated military targets (as both sides contemplated in various ways during the Cold War), Moscow again might convince itself, rightly or wrongly, that escalation risks could be tolerated and managed. That might be particularly true for attacks limited to the kinds of target sets that posed disproportionate vulnerability and dependence for NATO. These could include cargo ships at sea, rail marshaling yards where train tracks change gauge (necessitating unloading and reloading) at the Poland-Lithuania border, or particularly weak bridges without nearby alternative routes.61 If Russia could limit NATO fatalities to hundreds of sailors and not itself present any target sets that were characterized by a similar combination of relatively high military importance and relatively great separation from vulnerable civilian populations, NATO might not have a good recourse. Moscow might hope as much, at least—and so elect to roll the dice. Such a decision would be reckless and foolish, but perhaps not beyond the pale of how human beings have behaved historically in wars they felt they were otherwise likely to lose. The Outcome of the Scenario: Toward a Net Assessment With all these factors in motion, how would this kind of conflict likely play out? A NATO military response to the postulated Russian aggression seems very likely. Perhaps evidence of its preparations to move forces into position to defend its ally and liberate its territory from Russian occupation would be enough to catalyze a diplomatic resolution of the crisis. If not, however, the stage would be set for the possible eruption of World War III. Russia might try to impede a deployment through cyber-, space, and other such attacks, which would likely only slow the deployment, not stop it. Thus escalation could easily result.62 Once shots were fired, NATO would be unlikely to back down. Not every nation would necessarily send significant military forces, to be sure, but some key countries would probably remain resolute. Much more likely than acceptance of defeat would be a redoubled commitment to complete the mission—and, if Russian nuclear weapons had been used by that point, even in a limited attack, to respond in kind. Put differently, if Russia did choose to try to physically prevent the deployment of large forces into eastern NATO territory in likely preparation for a counterattack, there would be two possibilities. If that attempt failed, a showdown in the east on land would still loom. If it succeeded, NATO would then face a momentous decision: accept defeat, or reinforce dramatically with conventional forces (perhaps after a period of repairing damage and building more equipment and weaponry, depending on how many losses it had already suffered), or escalate to the nuclear level. In situations of this sort, the parties to the conflict might find themselves living scenarios like those that nuclear theorists pondered throughout the Cold War. They could be engaged in behavior that Thomas Schelling might have described as “the threat that leaves something to chance” or that Herman Kahn might have placed on the lower rungs of a nuclear escalation ladder that reached potentially to all-out war.63 American planners saw these kinds of escalatory ladders and options as ideas that might serve U.S. interests; thus it would not be too surprising to see Russian planners invoke them now.64 And whatever the dangers during the deployment phase, they would snowball during any actual maneuver warfare in eastern Europe. For example, it is entirely imaginable that an operation designed to liberate a Baltic state from a Russian occupation would trespass onto Russian territory to cut off supply lines and possible reinforcements.65 Moscow may or may not simply take NATO’s word that it has no designs on the country’s government. In other words, it might even fear that NATO’s counteroffensive could aspire to regime change in Russia. It may or may not have a clear picture of the kind of attack it is experiencing, as command and control systems would be compromised in the course of conventional battle, quite possibly including those systems commonly used for nuclear weapons.66 I conclude that, for a hypothetical conflict occurring sometime in the near future, enough uncertainties exist to make the outcome of the war somewhat unpredictable. One cannot simply assert that NATO’s numerous advantages guarantee a victory. The Baltics’ exposed geographic location, NATO’s limited means of deploying reinforcements to the region reliably, Russia’s options in domains ranging from cyberspace to outer space, and the possible use of nuclear weapons even in just a limited, tactical role make it uncertain that NATO could confidently expect victory despite collectively outspending Russia by more than ten to one in the military arena. For example, it is not clear that the United States could safely send most of its major ocean transport vessels to ports of debarkation and unload supplies there in the face of a conventional military threat. And if it lost a substantial fraction of its top-line supplies and ships to Russian attacks in its first attempt, the United States might need time to prepare for a second effort, which might then have to begin further west in Europe where disembarking and marshaling of forces could be carried out more safely, before those forces gradually made their way eastward. NATO would probably win such a conventional war, but it could take many months or even years. And even then, the deep uncertainties associated with possible nuclear escalation make it unclear whether victory could even be meaningful. Few would say that a few thousand square kilometers of Baltic territory logically warrant nuclear risks. But human beings are not always logical. Nuclear brinkmanship over a limited-war scenario in eastern Europe would not be unthinkable, based on what we know of history and human nature. And if nuclear weapons were ever used, even in small numbers at first, all bets are off as to where and how the conflict would end.

### AT: Bias

#### First, I would like to point out that our innovation contention turns all of their arguments. The affirmative assumes that appropriation is only done for capitalist interests and not for the benefit of society, but that is simply not true. Appropriation is mainly done for access to new resources, not simply dominance and power.

#### This makes commercial space appropriation incredibly necesssary, as it solves lack of access to resources.

Pelton 17—(Director Emeritus of the Space and Advanced Communications Research Institute at George Washington University, PHD in IR from Georgetown).. Pelton, Joseph N. 2017. The New Gold Rush: The Riches of Space Beckon! Springer. Accessed 8/30/19.

Are We Humans Doomed to Extinction? What will we do when Earth’s resources are used up by humanity? The world is now hugely over populated, with billions and billions crammed into our overcrowded cities. By 2050, we may be 9 billion strong, and by 2100 well over 11 billion people on Planet Earth. Some at the United Nations say we might even be an amazing 12 billion crawling around this small globe. And over 80 % of us will be living in congested cities. These cities will be ever more vulnerable to terrorist attack, natural disaster, and other plights that come with overcrowding and a dearth of jobs that will be fueled by rapid automation and the rise of artifi cial intelligence across the global economy. We are already rapidly running out of water and minerals. Climate change is threatening our very existence. Political leaders and even the Pope have cautioned us against inaction. Perhaps the naysayers are right. All humanity is at tremendous risk. Is there no hope for the future? This book is about hope. We think that there is literally heavenly hope for humanity. But we are not talking here about divine intervention. We are envisioning a new space economy that recognizes that there is more water in the skies that all our oceans. Th ere is a new wealth of natural resources and clean energy in the reaches of outer space—more than most of us could ever dream possible. There are those that say why waste money on outer space when we have severe problems here at home? Going into space is not a waste of money. It is our future. It is our hope for new jobs and resources. The great challenge of our times is to reverse public thinking to see space not as a resource drain but as the doorway to opportunity. The new space frontier can literally open up a “gold rush in the skies.” In brief, we think there is new hope for humanity. We see a new a pathway to the future via new ventures in space. For too long, space programs have been seen as a money pit. In the process, we have overlooked the great abundance available to us in the skies above. It is important to recognize there is already the beginning of a new gold rush in space—a pathway to astral abundance. “New Space” is a term increasingly used to describe radical new commercial space initiatives—many of which have come from Silicon Valley and often with backing from the group of entrepreneurs known popularly as the “space billionaires.” New space is revolutionizing the space industry with lower cost space transportation and space systems that represent significant cost savings and new technological breakthroughs. “New Commercial Space” and the “New Space Economy” represent more than a new way of looking at outer space. These new pathways to the stars could prove vital to human survival. If one does not believe in spending money to probe the mysteries of the universe then perhaps we can try what might be called “calibrated greed” on for size. One only needs to go to a cubesat workshop, or to Silicon Valley or one of many conferences like the “Disrupt Space” event in Bremen, Germany, held in April 2016 to recognize that entrepreneurial New Space initiatives are changing everything [ 1 ]. In fact, the very nature and dimensions of what outer space activities are today have changed forever. It is no longer your grandfather’s concept of outer space that was once dominated by the big national space agencies. The entrepreneurs are taking over. The hopeful statements in this book and the hard economic and technical data that backs them up are more than a minority opinion. It is a topic of growing interest at the World Economic Forum, where business and political heavyweights meet in Davos, Switzerland, to discuss how to stimulate new patterns of global economic growth. It is even the growing view of a group that call themselves “space ethicists.” Here is how Christopher J. Newman, at the University of Sunderland in the United Kingdom has put it: Space ethicists have offered the view that space exploration is not only desirable; it is a duty that we, as a species, must undertake in order to secure the survival of humanity over the longer term. Expanding both the resource base and, eventually, the habitats available for humanity means that any expenditure on space exploration, far from being viewed as frivolous, can legitimately be rationalized as an ethical investment choice. (Newman) On the other hand there are space ethicists and space exobiologists who argue that humans have created ecological ruin on the planet—and now space debris is starting to pollute space. Th ese countervailing thoughts by the “no growth” camp of space ethicists say we have no right to colonize other planets or to mine the Moon and asteroids—or at least no right to do so until we can prove we can sustain life here on Earth for the longer term. However, for most who are planning for the new space economy the opinion of space philosophers doesn’t really fl oat their boat. Legislators, bankers, and aspiring space entrepreneurs are far more interested in the views of the super-rich capitalists called the space billionaires. A number of these billionaires and space executives have already put some very serious money into enterprises intent on creating a new pathway to the stars. No less than five billionaires with established space ventures—Elon Musk, Paul Allen, Jeff Bezos, Sir Richard Branson, and Robert Bigelow—have invested millions if not billions of dollars into commercializing space. They are developing new technologies and establishing space enterprises that can bring the wealth of outer space down to Earth. This is not a pipe dream, but will increasingly be the economic reality of the 2020s. These wealthy space entrepreneurs see major new economic opportunities. To them space represents the last great frontier for enterprising pioneers. Th us they see an ever-expanding space frontier that offers opportunities in low-cost space transportation, satellite solar power satellites to produce clean energy 24h a day, space mining, space manufacturing and production, and eventually space habitats and colonies as a trajectory to a better human future. Some even more visionary thinkers envision the possibility of terraforming Mars, or creating new structures in space to protect our planet from cosmic hazards and even raising Earth’s orbit to escape the rising heat levels of the Sun in millennia to come. Some, of course, will say this is sci-fi hogwash. It can’t be done. We say that this is what people would have said in 1900 about airplanes, rocket ships, cell phones and nuclear devices. The skeptics laughed at Columbus and his plan to sail across the oceans to discover new worlds. When Thomas Jefferson bought the Louisiana Purchase from France or Seward bought Alaska, there were plenty of naysayers that said such investment in the unknown was an extravagant waste of money. A healthy skepticism is useful and can play a role in economic and business success. Before one dismisses the idea of an impending major new space economy and a new gold rush, it might useful to see what has already transpired in space development in just the past five decades. The world’s first geosynchronous communications satellite had a throughput capability of about 500 kb / s. In contrast, today’s state of the art Viasat 2 —a half century later— has an impressive throughput of some 140 Gb/s. Th is means that the relative throughput is nearly 300,000 greater, while its lifetime is some ten times longer (Figs. 1.1 and 1.2 ). Each new generation of communications satellite has had more power, better antenna systems, improved pointing and stabilization, and an extended lifetime. And the capabilities represented by remote sensing satellites , meteorological satellites , and navigation and timing satellites have also expanded their capabilities and performance in an impressive manner. When satellite applications first started, the market was measured in millions of dollars. Today commercial satellite services exceed a quarter of a billion dollars. Vital services such as the Internet, aircraft traffi c control and management, international banking, search and rescue and much, much more depend on application satellites. Th ose that would doubt the importance of satellites to the global economy might wish to view on You Tube the video “If Th ere Were a Day Without Satellites?” [ 2 ]. Let’s check in on what some of those very rich and smart guys think about the new space economy and its potential. (We are sorry to say that so far there are no female space billionaires, but surely this, too, will come someday soon.) Of course this twenty-fi rst century breakthrough that we call the New Space economy will not come just from new space commerce. It will also come from the amazing new technologies here on Earth. Vital new terrestrial technologies will accompany this cosmic journey into tomorrow. Information technology, robotics, artificial intelligence and commercial space travel systems have now set us on a course to allow us humans to harvest the amazing riches in the skies—new natural resources, new energy, and even totally new ways of looking at the purpose of human existence. If we pursue this course steadfastly, it can be the beginning of a New Space renaissance. But if we don’t seek to realize our ultimate destiny in space, Homo sapiens can end up in the dustbin of history—just like literally millions of already failed species. In each and every one of the five mass extinction events that have occurred over the last 1.5 billion years on Earth, some 50–80 % of all species have gone the way of the T. Rex, the woolly mammoth, and the Dodo bird along with extinct ferns, grasses and cacti. On the other hand, the best days of the human race could be just beginning. If we are smart about how we go about discovering and using these riches in the skies and applying the best of our new technologies, it could be the start of a new beginning for humanity. Konstantin Tsiokovsky, the Russian astronautics pioneer, who fi rst conceived of practical designs for spaceships, famously said: “A planet is the cradle of mankind, but one cannot live in a cradle forever.” Well before Tsiokovsky another genius, Leonardo da Vinci, said, quite poetically: “Once you have tasted flight, you will forever walk the earth with your eyes turned skyward, for there you have been, and there you will always long to return.” The founder of the X-Prize and of Planetary Resources, Inc., Dr. Peter Diamandis, has much more brashly said much the same thing in quite diff erent words when he said: “The meek shall inherit the Earth. The rest of us will go to Mars.” The New Space Billionaires Peter Diamandis is not alone in his thinking. From the list of “visionaries” quoted earlier, Elon Musk, the founder of SpaceX; Sir Richard Branson, the founder of Virgin Galactic; and Paul Allen, the co-founder of Microsoft and the man who financed SpaceShipOne, the world’s first successful spaceplane have all said the future will include a vibrant new space economy. Th ey, and others, have said that we can, we should and we soon shall go into space and realize the bounty that it can offer to us. Th e New Space enterprise is today indeed being led by those so-called space billionaires , who have an exciting vision of the future. They and others in the commercial space economy believe that the exploitation of outer space may open up a new golden age of astral abundance. They see outer space as a new frontier that can be a great source of new materials, energy and various forms of new wealth that might even save us from excesses of the past. Th is gold rush in the skies represents a new beginning. We are not talking about expensive new space ventures funded by NASA or other space agencies in Europe, Japan, China or India. No, these eff orts which we and others call New Space are today being forged by imaginative and resourceful commercial entrepreneurs. Th ese twenty-fi rst century visionaries have the fortitude and zeal to look to the abundance above. New breakthroughs in technology and New Space enterprises may be able to create an “astral life raft” for humanity. Just as Columbus and the Vikings had the imaginative drive that led them to discover the riches of a new world, we now have a cadre of space billionaires that are now leading us into this New Space era of tomorrow. These bold leaders, such as Paul Allen and Sir Richard Branson, plus other space entrepreneurs including Jeff Bezos of Amazon and Blue Origin, and Robert Bigelow, Chairman of Budget Suites and Bigelow Aerospace, not only dream of their future in the space industry but also have billions of dollars in assets. These are the bright stars of an entirely new industry that are leading us into the age of New Space commerce. These space billionaires, each in their own way, are proponents of a new age of astral abundance. Each of them is launching new commercial space industries. They are literally transforming our vision of tomorrow. These new types of entrepreneurial aerospace companies—the New Space enterprises—give new hope and new promise of transforming our world as we know it today. The New Space Frontier What happens in space in the next few decades, plus corresponding new information technologies and advanced robotics, will change our world forever. These changes will redefi ne wealth, change our views of work and employment and upend almost everything we think we know about economics, wealth, jobs, and politics. Th ese changes are about truly disruptive technologies of the most fundamental kinds. If you thought the Internet, smart phones, and spandex were disruptive technologies, just hang on. You have not seen anything yet. In short, if you want to understand a transition more fundamental than the changes brought to the twentieth century world by computers, communications and the Internet, then read this book. There are truly riches in the skies. Near-Earth asteroids largely composed of platinum and rare earth metals have an incredible value. Helium-3 isotopes accessible in outer space could provide clean and abundant energy. There is far more water in outer space than is in our oceans. In the pages that follow we will explain the potential for a cosmic shift in our global economy, our ecology, and our commercial and legal systems. These can take place by the end of this century. And if these changes do not take place we will be in trouble. Our conventional petro-chemical energy systems will fail us economically and eventually blanket us with a hydrocarbon haze of smog that will threaten our health and our very survival. Our rare precious metals that we need for modern electronic appliances will skyrocket in price, and the struggle between “haves” and “have nots” will grow increasingly ugly. A lack of affordable and readily available water, natural resources, food, health care and medical supplies, plus systematic threats to urban security and systemic warfare are the alternatives to astral abundance. The choices between astral abundance and a downward spiral in global standards of living are stark. Within the next few decades these problems will be increasingly real. By then the world may almost be begging for new, out of- the-box thinking. International peace and security will be an indispensable prerequisite for exploitation of astral abundance, as will good government for all. No one nation can be rich and secure when everyone else is poor and insecure. In short, global space security and strategic space defense, mediated by global space agreements, are part of this new pathway to the future.

#### These arguments don’t prove that appropriation of outer space is unjust – in order to prove it is always unjust, they must prove that it requires exploitation in every instance, otherwise, this just happens to be a circumstance and not a direct result of appropriation itself.

#### Capitalism is sustainable – solves the environment, and quality of life – prefer empirics

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However, things are more complicated than the arguments above would suggest, and the benefits of capitalism, especially for the world's poorest and most vulnerable people, are in fact myriad and significant. In addition, as we will see in this section, many experts argue that capitalism is not the fundamental cause of the previously described problems but rather an essential component of the best solutions to them and of the best methods for promoting our goals of health, well-being, and justice. To see where the defenders of capitalism are coming from, consider an analogy involving a response to a pandemic: if a country administered a rushed and untested vaccine to its population that ended up killing people, we would not say that vaccines were the problem. Instead, the problem would be the flawed and sloppy policies of vaccine implementation. Vaccines might easily remain absolutely essential to the correct response to such a pandemic and could also be essential to promoting health and flourishing, more generally. The argument is similar with capitalism according to the leading mainstream arguments in favor of it: Capitalism is an essential part of the best society we could have, just like vaccines are an essential part of the best response to a pandemic such as COVID-19. But of course both capitalism and vaccines can be implemented poorly, and can even do harm, especially when combined with other incorrect policy decisions. But that does not mean that we should turn against them—quite the opposite. Instead, we should embrace them as essential to the best and most just outcomes for society, and educate ourselves and others on their importance and on how they must be properly designed and implemented with other policies in order to best help us all. In fact, the argument in favor of capitalism is even more dramatic because it claims that much more is at stake than even what is at stake in response to a global pandemic—what is at stake with capitalism is nothing less than whether the world's poorest and most vulnerable billion people will remain in conditions of poverty and oppression, or if they will instead finally gain access to what is minimally necessary for basic health and wellbeing and become increasingly affluent and empowered. The argument in favor of capitalism proceeds as follows: Premise 1. Development and the past. Over the course of recorded human history, the majority of historical increases in health, wellbeing, and justice have occurred in the last two centuries, largely as a result of societies adopting or moving toward capitalism. Capitalism is a relevant cause of these improvements, in the sense that they could not have happened to such a degree if it were not for capitalism and would not have happened to the same degree under any alternative noncapitalist approach to structuring society. The argument in support of this premise relies on observed relationships across societies and centuries between indicators of degree of capitalism, wealth, investments in public goods, and outcomes for health, wellbeing, and justice, together with econometric analysis in support of the conclusion that the best explanation of these correlations and the underlying mechanism is that large increases in health, wellbeing, and justice are largely driven by increasing investments in public goods. The scale of increased wealth necessary to maximize these investments requires capitalism. Thus, as capitalist societies have become dramatically wealthier over the past hundred years (and wealthier than societies with alternative systems), this has allowed larger investments in public goods, which simply has not been possible in a sustained way in societies without the greater wealth that capitalism makes possible. Important investments in public goods include investments in basic medical knowledge, in health and nutrition programs, and in the institutional capacity and know-how to regulate society and capitalism itself. As a result, capitalism is a primary driver of positive outcomes in health and wellbeing (such as increased life expectancy, lowered child and maternal mortality, adequate calories per day, minimized infectious disease rates, a lower percentage and number of people in poverty, and more reported happiness);5 and in justice (such as reduced deaths from war and homicide; higher rankings in human rights indices; the reduced prevalence of racist, sexist, homophobic opinions in surveys; and higher literacy rates).6 These quantifiable positive consequences of global capitalism dramatically outweigh the negative consequences (such as deaths from pollution in the course of development), with the result that the net benefits from capitalism in terms of health, wellbeing, and justice have been greater than they would have been under any known noncapitalist approach to structuring society.7 Premise 2. Economics, ethics, and policy. Although capitalism has often been ill-regulated and therefore failed to maximize net benefits for health, wellbeing, and justice, it can become well-regulated so that it maximizes these societal goals, by including mechanisms identified by economists and other policy experts that do the following: optimally8 regulate negative effects such as pollution and monopoly power, and invest in public goods such as education, basic healthcare, and fundamental research including biomedical knowledge (more generally, policies that correct the failures of free markets that economists have long recognized will arise from “externalities” in the absence of regulation);9 ensure equity and distributive justice (for example, via wealth redistribution);10 ensure basic rights, justice, and the rule of law independent of the market (for example, by an independent judiciary, bill of rights, property rights, and redistribution and other legislation to correct historical injustices due to colonialism, racism, and correct current and historical distortions that have prevented markets from being fair);11 and ensure that there is no alternative way of structuring society that is more efficient or better promotes the equity, justice, and fairness goals outlined above (by allowing free exchange given the regulations mentioned).12 To summarize the implication of the first two premises, well-regulated capitalism is essential to best achieving our ethical goals—which is true even though capitalism has certainly not always been well regulated historically. Society can still do much better and remove the large deficits in terms of health, wellbeing, and justice that exist under the current inferior and imperfect versions of capitalism. Premise 3. Development and the future. If the global spread of capitalism is allowed to continue, desperate poverty can be essentially eliminated in our lifetimes. Furthermore, this can be accomplished faster and in a more just way via well-regulated global capitalism than by any alternatives. If we instead opt for less capitalism, less growth, and less globalization, then desperate poverty will continue to exist for a significant portion of the world's population into the further future, and the world will be a worse and less equitable place than it would have been with more capitalism. For example, in a world with less capitalism, there would be more overpopulation, food insecurity, air pollution, ill health, injustice, and other problems. In part, this is because of the factors identified by premise 1, which connect a turn away from capitalism with a turn away from continuing improvements in health, wellbeing, and justice, especially for the developing world. In addition, fertility declines are also a consequence of increased wealth, and the size of the population is a primary determinant of food demand and other environmental stressors.13 Finally, as discussed at length in the next section of the essay, capitalism can be naturally combined with optimal environmental regulations.14 Even bracketing anything like optimal regulation, it remains true that sufficiently wealthy nations reduce environmental degradation as they become wealthier, whereas developing nations that are nearing peak degradation will remain stuck at the worst levels of degradation if we stall growth, rather than allowing them to transition to less and less degradation in the future via capitalism and economic growth.15 In contrast, well-regulated capitalism is a key part of the best way of coping with these problems, as well as a key part of dealing with climate change, global food production, and other specific challenges, as argued at length in the next section. Here it is important to stress that we should favor well-regulated capitalism that includes correct investments in public goods over other capitalist systems such as the neoliberalism of the recent past that promoted inadequately regulated capitalism with inadequate concern for externalities, equity, and background distortions and injustices.16

### AT: Conflict

#### Conflict is unlikely, states will not go to war over space

#### Will resort to nuclear weapons or other posturing

### AT: Environment

#### Judge, there is no way for the affirmative to solve valuable space resources that we need now