### 1NC - Util

#### The standard is Maximizing expected well-being –

#### Conceded in cross this is true --- no new answers

Moral uncertainty means extinction first  
**Bostrom 12** [Nick Bostrom. Faculty of Philosophy & Oxford Martin School University of Oxford. “Existential Risk Prevention as Global Priority.” Global Policy (2012)]  
These reflections on **moral uncertainty suggest** an alternative, complementary way of looking at existential risk; they also suggest a new way of thinking about the ideal of sustainability. Let me elaborate.¶ **Our present understanding of axiology might** well **be confused. We may not** nowknow — at least not in concrete detail — what outcomes would count as a big win for humanity; we might not even yet **be able to imagine the best ends** of our journey. **If we are** indeedprofoundly **uncertain** about our ultimate aims,then we should recognize that **there is a great** option **value in preserving** — and ideally improving — **our ability to recognize value and** to **steer the future accordingly. Ensuring** that **there will be a future** version of **humanity** with great powers and a propensity to use them wisely **is** plausibly **the best way** available to us **to increase the probability that the future will contain** a lot of **value.** To do this, we must prevent any existential catastrophe.

### 1NC – CP

#### Counterplan Text: The appropriation of outer space by private entities is unjust, sans mining expeditions.

#### Private space companies are the leading drivers of mining resources off celestial bodies – that’s key to stop resource, water, and rare earth mineral shortages

Gilbert 21 (Alex Gilbert; 4/26/21;The Milken Institute Review; *“Mining in Space Is Coming”*; accessed 12/15/21; <https://www.milkenreview.org/articles/mining-in-space-is-coming>; alex gilbert, is a complex systems researcher and a PhD student in space resources at the Colorado School of Mines.) HB

As every fan of science fiction knows, the resources of the solar system appear virtually unlimited compared to those on Earth. There are whole other planets, dozens of moons, thousands of massive asteroids and millions of small ones that doubtless contain humungous quantities of materials that are scarce and very valuable (back on Earth). Visionaries including Jeff Bezos imagine heavy industry moving to space and Earth becoming a residential area. However, as entrepreneurs look to harness the riches beyond the atmosphere, access to space resources remains tangled in the realities of economics and governance. Start with the fact that space belongs to no country, complicating traditional methods of resource allocation, property rights and trade. With limited demand for materials in space itself and the need for huge amounts of energy to return materials to Earth, creating a viable industry will turn on major advances in technology, finance and business models. That said, there’s no grass growing under potential pioneers’ feet. Potential economic, scientific and even security benefits underlie an emerging geopolitical competition to pursue space mining. The United States is rapidly emerging as a front-runner, in part due to its ambitious Artemis Program to lead a multinational consortium back to the Moon. But it is also a leader in creating a legal infrastructure for mineral exploitation. The United States has adopted the world’s first space resources law, recognizing the property rights of private companies and individuals to materials gathered in space. However, the United States is hardly alone. Luxembourg and the United Arab Emirates (you read those right) are racing to codify space-resources laws of their own, hoping to attract investment to their entrepot nations with business-friendly legal frameworks. China reportedly views space-resource development as a national priority, part of a strategy to challenge U.S. economic and security primacy in space. Meanwhile, Russia, Japan, India and the European Space Agency all harbor space-mining ambitions of their own. Governing these emerging interests is an outdated treaty framework from the Cold War. Sooner rather than later, we’ll need new agreements to facilitate private investment and ensure international cooperation. What’s Out There Back up for a moment. For the record, space is already being heavily exploited, because space resources include non-material assets such as orbital locations and abundant sunlight that enable satellites to provide services to Earth. Indeed, satellite-based telecommunications and global positioning systems have become indispensable infrastructure underpinning the modern economy. Mining space for materials, of course, is another matter. In the past several decades, planetary science has confirmed what has long been suspected: celestial bodies are potential sources for dozens of natural materials that, in the right time and place, are incredibly valuable. Of these, water may be the most attractive in the near-term, because — with assistance from solar energy or nuclear fission — H2O can be split into hydrogen and oxygen to make rocket propellant, facilitating in-space refueling. So-called “rare earth” metals are also potential targets of asteroid miners intending to service Earth markets. Consisting of 17 elements, including lanthanum, neodymium, and yttrium, these critical materials (most of which are today mined in China at great environmental cost) are required for electronics. And they loom as bottlenecks in making the transition from fossil fuels to renewables backed up by battery storage. The Moon is a prime space mining target. Boosted by NASA’s mining solicitation, it is likely the first location for commercial mining. The Moon has several advantages. It is relatively close, requiring a journey of only several days by rocket and creating communication lags of only a couple seconds — a delay small enough to allow remote operation of robots from Earth. Its low gravity implies that relatively little energy expenditure will be needed to deliver mined resources to Earth orbit. The Moon may look parched — and by comparison to Earth, it is. But recent probes have confirmed substantial amounts of water ice lurking in permanently shadowed craters at the lunar poles. Further, it seems that solar winds have implanted significant deposits of helium-3 (a light stable isotope of helium) across the equatorial regions of the Moon. Helium-3 is a potential fuel source for secondand third-generation fusion reactors that one hopes will be in service later in the century. The isotope is packed with energy (admittedly hard to unleash in a controlled manner) that might augment sunlight as a source of clean, safe energy on Earth or to power fast spaceships in this century. Between its water and helium-3 deposits, the Moon could be the resource stepping-stone for further solar system exploration. Asteroids are another near-term mining target. There are all sorts of space rocks hurtling through the solar system, with varying amounts of water, rare earth metals and other materials on board. The asteroid belt between the orbits of Mars and Jupiter contains most of them, many of which are greater than a kilometer in diameter. Although the potential water and mineral wealth of the asteroid belt is vast, the long distance from Earth and requisite travel times and energy consumption rule them out as targets in the near term. Wannabe asteroid miners will thus be looking at smaller near-Earth asteroids. While they are much further away than the Moon, many of them could be reached using less energy — and some are even small enough to make it technically possible to tow them to Earth orbit for mining. Space mining may be essential to crewed exploration missions to Mars. Given the distance and relatively high gravity of Mars (twice that of the Moon), extraction and export of minerals to Earth seems highly unlikely. Rather, most resource extraction on Mars will focus on providing materials to supply exploration missions, refuel spacecraft and enable settlement. Technology Is the Difference The prospects for space mining are being driven by technological advances across the space industry. The rise of reusable rocket components and the now-widespread use of off-the-shelf parts are lowering both launch and operations costs. Once limited to government contract missions and the delivery of telecom satellites to orbit, private firms are now emerging as leaders in developing “NewSpace” activities — a catch-all term for endeavors including orbital tourism, orbital manufacturing and mini-satellites providing specialized services. The space sector, with a market capitalization of $400 billion, could grow to as much as $1 trillion by 2040 as private investment soars. But despite the high-profile commercial advances, governments still call the shots on the leading edge of space resource technologies. The United States extracted the first extraterrestrial materials in space from the Moon during the Apollo missions, followed by the Soviet Union’s recoveries from crewless Luna missions. President Biden recently borrowed one of the Apollo lunar rocks for display in the Oval Office, highlighting the awe that deep space can still summon. For the time being, scientific samples remain the goal of mining. Last October, NASA’s OSIRIS-REx mission — due to return to Earth in 2023 — collected a small amount of material from the asteroid Bennu. In December, Japan returned a sample of the asteroid Ryugu with the Hayabusa2 spacecraft. And several weeks later, China’s Chang’e 5 mission returned the first lunar samples since the 1970s. Sample collection is accelerating, with recent missions targeting Mars. Japan is planning to visit the two moons of Mars and extract a sample from one. NASA’s robotic Perseverance rover will collect and cache drilled samples on Mars that could later be returned to Earth. Perseverance also carries gear for the unique MOXIE experiment on Mars — an attempt to produce oxygen on the planet with technologies that could eventually extract oxygen for astronauts to breath and refuel spacecraft.

#### Increasing the supply of rare earth metals is crucial to the transition to green tech which is key to resolve climate chnage

Riley 21 (Charles Riley; 5/5/21; CNN; *“A shortage of these metals could make the climate crisis worse”*; accessed 12/15/21; <https://www.cnn.com/2021/05/05/business/climate-crisis-metals-shortage/index.html>; Charles Riley is Europe Editor at CNN Business. Before joining the London bureau, he worked as a reporter and editor in New Delhi, Hong Kong, New York and Washington D.C.) HB

The world won't be able to tackle the climate crisis unless there is a sharp increase in the supply of metals required to produce electric cars, solar panels, wind turbines and other clean energy technologies, according to the International Energy Agency. As countries switch to green energy, demand for copper, lithium, nickel, cobalt and rare earth elements is soaring. But they are all vulnerable to price volatility and shortages, the agency warned in a report published on Wednesday, because their supply chains are opaque, the quality of available deposits is declining and mining companies face stricter environmental and social standards. Limited access to known mineral deposits is another risk factor. Three countries together control more than 75% of the global output of lithium, cobalt and rare earth elements. The Democratic Republic of Congo was responsible for 70% of cobalt production in 2019, and China produced 60% of rare earth elements while refining 50% to 70% of lithium and cobalt, and nearly 90% of rare earth elements. Australia is the other power player. In the past, mining companies have responded to higher demand by increasing their investment in new projects. But it takes on average 16 years from the discovery of a deposit for a mine to start production, according to the IEA. Current supply and investment plans are geared to "gradual, insufficient action on climate change," it warned. "These risks to the reliability, affordability and sustainability of mineral supply are manageable, but they are real," the Paris-based agency said in the most comprehensive report on the issue to date. "How policy makers and companies respond will determine whether critical minerals are a vital enabler for clean energy transitions, or a bottleneck in the process." The minerals are essential to technologies that are expected to play a leading role in combating climate change. The average electric car requires six times more minerals than a conventional car, according to the IEA. Lithium, nickel, cobalt, manganese and graphite are crucial to batteries. Electricity networks need huge amounts of copper and aluminum, while rare earth elements are used in the magnets needed to make wind turbines work. Meeting the goals of the Paris climate agreement will require a "significant" increase in clean energy, according to the IEA, which estimates that the annual installation of wind turbines would need to grow threefold by 2040 and electric car sales would need to expand 25 times over the same period. Reaching net zero emissions by 2050 would require even more investment. "The data shows a looming mismatch between the world's strengthened climate ambitions and the availability of critical minerals that are essential to realizing those ambitions," Fatih Birol, executive director of the IEA, said in a statement. "The challenges are not insurmountable, but governments must give clear signals about how they plan to turn their climate pledges into action." The agency said that policymakers should provide more clarity on the energy transition, promote the development of new technology and recycling, enhance supply chain resilience and encourage higher environmental, social and governance (ESG) standards. The IEA, which advises the world's richest countries and was founded after the oil supply shocks in the 1970s, said that mineral supplies will be the energy security challenge of the 21st century. "Concerns about price volatility and security of supply do not disappear in an electrified, renewables-rich energy system," it said.

**Climate change causes extinction – ocean acidification, water and resource wars, econ collapse, and regional conflicts.**

Pachauri and Meyer 15 (Rajendra K. Pachauri Chairman of the IPCC, Leo Meyer Head, Technical Support Unit IPCC were the editors for this IPCC report, “Climate Change 2014 Synthesis Report” <http://epic.awi.de/37530/1/IPCC_AR5_SYR_Final.pdf> IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp)

SPM 2.3 Future risks and impacts caused by a changing climate Climate change will amplify existing risks and create new risks for natural and human systems. Risks are unevenly distributed and are generally greater for disadvantaged people and communities in countries at all levels of development. {2.3} Risk of climate-related impacts results from the interaction of climate-related hazards (including hazardous events and trends) with the vulnerability and exposure of human and natural systems, including their ability to adapt. Rising rates and magnitudes of warming and other changes in the climate system, accompanied by ocean acidification, increase the risk of severe, pervasive and in some cases irreversible detrimental impacts. Some risks are particularly relevant for individual regions (Figure SPM.8), while others are global. The overall risks of future climate change impacts can be reduced by limiting the rate and magnitude of climate change, including ocean acidification. The precise levels of climate change sufficient to trigger abrupt and irreversible change remain uncertain, but the risk associated with crossing such thresholds increases with rising temperature (medium confidence). For risk assessment, it is important to evaluate the widest possible range of impacts, including low-probability outcomes with large consequences. {1.5, 2.3, 2.4, 3.3, Box Introduction.1, Box 2.3, Box 2.4} A large fraction of species faces increased extinction risk due to climate change during and beyond the 21st century, especially as climate change interacts with other stressors (high confidence). Most plant species cannot naturally shift their geographical ranges sufficiently fast to keep up with current and high projected rates of climate change in most landscapes; most small mammals and freshwater molluscs will not be able to keep up at the rates projected under RCP4.5 and above in flat landscapes in this century (high confidence). Future risk is indicated to be high by the observation that natural global climate change at rates lower than current anthropogenic climate change caused significant ecosystem shifts and species extinctions during the past millions of years. Marine organisms will face progressively lower oxygen levels and high rates and magnitudes of ocean acidification (high confidence), with associated risks exacerbated by rising ocean temperature extremes (medium confidence). Coral reefs and polar ecosystems are highly vulnerable. Coastal systems and low-lying areas are at risk from sea level rise, which will continue for centuries even if the global mean temperature is stabilized (high confidence). {2.3, 2.4, Figure 2.5} Climate change is projected to undermine food security (Figure SPM.9). Due to projected climate change by the mid-21st century and beyond, global marine species redistribution and marine biodiversity reduction in sensitive regions will challenge the sustained provision of fisheries productivity and other ecosystem services (high confidence). For wheat, rice and maize in tropical and temperate regions, climate change without adaptation is projected to negatively impact production for local temperature increases of 2°C or more above late 20th century levels, although individual locations may benefit (medium confidence). Global temperature increases of ~4°C or more 13 above late 20th century levels, combined with increasing food demand, would pose large risks to food security globally(high confidence). Climate change is projected to reduce renewable surface water and groundwater resources in most dry subtropical regions (robust evidence, high agreement), intensifying competition for water among sectors (limited evidence, medium agreement). {2.3.1, 2.3.2} Until mid-century, projected climate change will impact human health mainly by exacerbating health problems that already exist (very high confidence). Throughout the 21st century, climate change is expected to lead to increases in ill-health in many regions and especially in developing countries with low income, as compared to a baseline without climate change (high confidence). By 2100 for RCP8.5, the combination of high temperature and humidity in some areas for parts of the year is expected to compromise common human activities, including growing food and working outdoors (high confidence). {2.3.2} In urban areas climate change is projected to increase risks for people, assets, economies and ecosystems, including risks from heat stress, storms and extreme precipitation, inland and coastal flooding, landslides, air pollution, drought, water scarcity, sea level rise and storm surges (very high confidence). These risks are amplified for those lacking essential infrastructure and services or living in exposed areas. {2.3.2} Rural areas are expected to experience major impacts on water availability and supply, food security, infrastructure and agricultural incomes, including shifts in the production areas of food and non-food crops around the world (high confidence). {2.3.2} Aggregate economic losses accelerate with increasing temperature (limited evidence, high agreement), but global economic impacts from climate change are currently difficult to estimate. From a poverty perspective, climate change impacts are projected to slow down economic growth, make poverty reduction more difficult, further erode food security and prolong existing and create new poverty traps, the latter particularly in urban areas and emerging hotspots of hunger (medium confidence). International dimensions such as trade and relations among states are also important for understanding the risks of climate change at regional scales. {2.3.2} Climate change is projected to increase displacement of people (medium evidence, high agreement). Populations that lack the resources for planned migration experience higher exposure to extreme weather events, particularly in developing countries with low income. Climate change can indirectlyincrease risks of violent conflicts by amplifying well-documented drivers of these conflicts such as poverty and economic shocks (medium confidence). {2.3.2} 2010 )

### 1NC --- DA

#### Beijing wants to challenge New Delhi now --- border disputes create flash points for conflicts --- absent Indian modernization china would get access to influence south Asia

Haqqani & Pande 21 [HUSAIN HAQQANI, director for South and Central Asia at the Hudson Institute in Washington D.C., APARNA PANDE, is director of the Initiative on the Future of India and South Asia at the Hudson Institute, 7-10-2021, “India has a long way to go in confronting China” The Hill, Accessed 1-6-2021, <https://thehill.com/opinion/international/562397-india-has-a-long-way-to-go-in-confronting-china> ww

India’s decision to move 50,000 additional troops to its border with China bolsters its ability to protect itself against Chinese aggression. It is a belated response to China’s actions last year, when the Chinese army surprised ill-prepared Indian soldiers and occupied several square miles of Indian territory in the Ladakh region to build roads and fortify military encampments. ∂ The hope of some Indian policymakers to resolve the matter diplomatically has not so far been fulfilled. Several rounds of military and diplomatic negotiations since April 2020, when the Chinese incursions started, have yielded little result.∂ Any willingness on India’s part to deal forcefully with China would be welcomed in the U.S., where successive administrations have sought to integrate India into America’s Indo-Pacific strategy. Several years of an India-U.S. entente cordiale has been premised on India standing up to China. ∂ After all, with a population of more than one billion, India is the only country with enough manpower to match that of China. ∂ China sees India as a potential rival and covets parts of Indian territory. China occupied 15,000 miles of Indian territory in the Aksai Chin section of Ladakh after war in 1962. China’s desire for influence in South Asia and the Indian Ocean Region challenges India in its backyard, setting off competition for the same sphere of influence.∂ But China’s phenomenal economic growth, coupled with India’s inability to keep pace, has hampered India’s ability to respond to China strategically. Even now the moving of troops to Ladakh is a tactical maneuver not backed by a clear strategic plan.∂ On four occasions since 2012, China has indulged in salami-slicing along the largely un-demarcated India-China border. India’s response each time has been limited to diplomatic negotiations with limited military pushback. ∂ There is a co-relation between relative economic strength and China’s willingness to flex its muscle. Between 1988, when India and China signed a series of agreements to restore relations, and 2012, the border between India and China remained by and large quiet.∂ During that period, the size of the two countries’ economies was not huge. In 1990, India’s GDP stood at $320 billion and China’s GDP at $413 billion. By 2012, China’s GDP had grown to $8.5 trillion, seven times larger than India’s $1.2 trillion economy.∂ The change in China’s policy after 2012, encouraging its troops to use force against India along the border, coincided with the rise in China’s military and economic power and its impact on the relative balance of power with India. ∂ Like many in the West, India during the 1990s had bought into the view that deeper economic and diplomatic engagement with communist China would help maintain peace between the two Asian giants. But the India-China border dispute could not remain on the back burner as China became more aggressive in the wake of growing economic and military power.∂ India can no longer rely solely on diplomacy to deal with China. It will soon have to build and deploy hard power to deter the Chinese. The recent deployment along the Ladakh border could mark the beginning of that process.∂ With the latest addition, 200,000 of India’s more than a million strong army now face China along the 2,167-mile border. By way of comparison, 600,000 Indian troops are positioned along the 2,065-mile, fully fenced and fully demarcated border with Pakistan. It is inconceivable that any attempt by Pakistan to take territory would go unretaliated by India. ∂ While India’s attempts over the last year have been to convince China, primarily through diplomatic engagements, to return the border to status quo ante, most military and strategic experts argue that China has no interest in resolving the border dispute with India. ∂ India has for far too long acquiesced to Chinese aggression without sufficient retaliatory military action. India may not seek to provoke China into an all-out war, but it needs to find a sweet spot between ignoring and provoking.∂ The United States and its allies, too, would like India to act like a major power in not taking Chinese provocations lightly.∂ Western democracies and Japan have viewed India as an ideal partner and future ally in Asia and the Indo-Pacific. India has consistently been a democracy, shares pluralist values with the United States, and its embrace of free market reforms since 1992 have created an opening for expanded economic ties.∂ India also shares America’s concerns about China’s rising power. In developing a pivot to Asia or an Indo-Pacific policy, successive U.S. administrations have assumed that a shared concern about China makes India a natural American ally. India-U.S. relations were referred to as the “defining partnership of the 21st century” under President Obama. The Trump administration’s 2017 National Security Strategy spoke of India as a “leading global power” and a strong “strategic and defense partner.”∂ The Biden administration’s March 2021 “Interim National Security guidance” has described the “deepening partnership” with India as being critical to America’s “vital national interests.” But the Indo-Pacific policies of both the Trump and Biden administrations have focused on maritime security, ignoring India’s challenge from China on the continental landmass.∂ China views India as an inward-looking democracy that has yet to focus on economic growth or military prowess. Only an expansion in India’s economy and military capability would convince China’s leaders to view it differently.∂ Moreover, the two decades of celebrating convergence of democratic values and voicing of strategic concerns by Washington and Delhi now needs to be followed up with specific steps to counter Chinese hard power with Indian muscle.

#### Space privatization is key to modernizing India’s military --- communications, weapons, and innovation --- top military officials agree

The Economic Times 21 [The Economic Times, 11-11-2021, “Indian private industry must step in to provide cutting-edge space technologies to armed forces: Bipin Rawat” The Economic Times, Accessed 1-5-2022, <https://economictimes.indiatimes.com/news/defence/indian-private-industry-must-step-in-to-provide-cutting-edge-space-technologies-to-armed-forces-bipin-rawat/articleshow/86931188.cms> ww

The Indian private industry must step in to provide cutting-edge space technologies and products to boost operational capabilities of the Indian armed forces, Chief of Defence Staff General Bipin Rawat said on Monday.∂ "Space and cyber domains have become critical to our ability to undertake operations across the spectrum, both in peace and conflict," he said.∂ While the Indian Space Research Organisation (ISRO) will continue to provide leadership and guidance, the expanding needs of the nation and the armed forces require that the private industry must step in and step forward, General Rawat said.∂ "The armed forces look forward to the Indian industry to provide products and innovations...and cutting-edge technologies towards war winning capabilities," he said.∂ The CDS was speaking at the launch ceremony of the Indian Space Association, a space sector industry body comprising companies such as Bharti Airtel, Larsen and Toubro, Agnikul, Dhruva Space and Kawa Space.∂ Opening of our space to the private industry in India is indeed a landmark and historic decision which was taken by the prime minister in June last year, he said.∂ The privatisation of the space industry will catapult the space into the future as the central driver of nation building, the CDS said.∂ "The concept that higher exploratory space domain, research and development activities, new technologies, human space flights, continues to be ISRO's mandate while many upstream and downstream space products as well as technological innovations be taken over by the private industry is an idea whose time has finally come," he said.∂ The initiative will surely help in making India a new global space hub in the years ahead, General Rawat said.∂ Like the armed forces the world over, the Indian armed forces are significant users of diverse space products including communication, position navigation and timing, and of course, intelligence, surveillance, and reconnaissance, he said.∂ "And apart from this, space situational awareness, and protection of our space based assets have become important domains," the CDS said.

#### Border conflicts cause miscalc --- goes nuclear

Dalton et al 20 [Toby Dalton, co-director and a senior fellow of the Nuclear Policy Program at the Carnegie Endowment. An expert on nonproliferation and nuclear energy, his work addresses regional security challenges and the evolution of the global nuclear order. Tong Zhao, senior fellow in Carnegie’s Nuclear Policy Program. Rukmani Gupta, New Delhi–based defense analyst whose work focuses on geopolitics, defense strategy, and military capabilities in Asia. 10-29-2020 “After the Border Clash, Will China-India Competition Go Nuclear?” Carnegie Endowment for International Peace, Accessed 1-6-2021, <https://carnegieendowment.org/2020/10/29/after-border-clash-will-china-india-competition-go-nuclear-pub-83072> ww

COULD A FUTURE CHINA-INDIA MILITARY CONFRONTATION INVOLVE NUCLEAR WEAPONS?∂ Zhao and Dalton: As their NFU policies demonstrate, both India and China have traditionally reserved nuclear weapons only for deterring a hostile nuclear attack. So even if their dispute over the border worsens, the risk of a Sino-Indian nuclear conflict is still very low, especially compared with other potential nuclear flashpoints around the world.∂ That said, the risk of nuclear use is growing for several reasons. India has noticed that China is increasingly willing to leverage its growing economic and military power to advance its national interests, especially over disputed territory. The nationalist government of Indian Prime Minister Narendra Modi presumably feels growing pressure from populists to push back, despite the potential short-term economic consequences.∂ Both countries are ruled by avowed strongmen who whip up nationalism as a source of popularity and legitimacy. The “fighting spirit” that Chinese President Xi Jinping has touted exposes senior Chinese officials and rank-and-file border guards alike to domestic criticism if they appear weak by making compromises with their Indian counterparts. Modi is similarly known for cultivating a macho image and has publicly alluded to nuclear weapons during previous military crises with Pakistan.∂ Chinese experts tend to dismiss the risk that a conventional border conflict with India could spark nuclear escalation because the tough, mountainous terrain makes large-scale troop maneuvers impossible. If there was a clash, they expect that the potential casualties and damage would be limited enough to avoid triggering nuclear threats.∂ Yet these risks may be growing. After both sides suffered casualties in the Galwan Valley clash in June 2020, both countries ramped up their military presence close to the border. Both sides now boast better transportation infrastructure and modern weaponry, so a severe, high-intensity conventional war can no longer be ruled out. Both countries also have dual-use (conventional or nuclear) weapon systems that could factor into a border conflict—weapons that could inadvertently fuel a deadly overreaction.∂ Gupta: The Indian military is battle-tested and is experienced in mountain combat. Infrastructure development under way in India’s border regions will improve transport and logistics links, allowing for a year-round military presence in contested areas. Even though the military confrontation at the border will continue, the risk of nuclear escalation likely hasn’t budged much. The India-China relationship encompasses more than just military affairs. Neither side wants conflict to spill beyond isolated military standoffs. Although Modi and Xi have used nationalist rhetoric in bolstering their legitimacy, the countries’ declared NFU positions remain unchanged, and they remain similarly committed to reserving nuclear weapons for deterrence.∂ After all, the border dispute has not escalated to large-scale conflict in over five decades— clearly, both sides are abundantly cautious about using offensive weapons. The purpose of such contained military confrontation is finite, bound by perceptions of limited territorial claims. Large-scale conventional war beyond the border regions remains highly unlikely.∂ The chances that one side may inadvertently target the other’s weapon systems—a possible path to nuclear escalation—remain very low too. Neither country has embraced tactical nuclear weapons. In the interest of limiting conflict and in keeping with their NFUs, it is extremely unlikely that either country would deploy strategic nuclear weapons to border regions, especially since their respective nuclear missiles have sufficient range to be stationed far from the border. None of the Chinese bases believed to host nuclear-capable missiles that can target India are near the Line of Actual Control where the border conflict is simmering. The prospect of accidental nuclear escalation remains quite remote.

#### Triggers nuclear winter and extinction --- worse than Indo-pak war

Jain 19 [Akshita Jain, Reporter for The Independent Formally Huff po india and the First post(they are citing Alan Robock, who is the co-author of a study on the impact of a potential India-Pakistan nuclear war), 10-11-2019, “An India-China Nuclear War Would Be More Devastating For Environment Than India-Pak: Expert” Huffington Post, Accessed 2-8-2022, <https://www.huffpost.com/archive/in/entry/india-china-pakistan-nuclear-war-expert-explains_in_5d9ada26e4b03b475f9bee92> ww

A war between the US and Russia could produce 150 Tg (millions of tonnes) of smoke, leading to “a nuclear winter”, said Alan Robock, the co-author of a recent study on the potential impact of the rapidly expanding nuclear arsenals in Pakistan and India, in an interview with HuffPost India.∂ The study, which was published in the journal Science Advances and received widespread coverage in Indian media, had said that over 100 million people were likely to die if a war took place between the two countries in 2025.∂ In the interview, conducted over email, Robock said that a potential war between India and China “could produce more smoke than the India-Pakistan case we studied”.∂ The report had noted that both India and Pakistan may have 400-500 nuclear weapons by 2025 and that nuclear-ignited fires could release 16-36 million tonnes of soot.∂ The smoke, the researchers said, would rise into the upper troposphere, be self-lofted into the stratosphere, and spread globally within weeks.∂ “Surface sunlight will decline by 20 to 35%, cooling the global surface by 2° to 5°C and reducing precipitation by 15 to 30%, with larger regional impacts,” the report said.∂ Robock, who works at Rutgers University in New Brunswick, said in the interview that the researchers first looked at the consequences of a potential nuclear war between India and Pakistan more than 10 years ago.∂ 1. You were quoted in another report as saying that continuing unrest between India and Pakistan, particularly over Kashmir, made it important to understand the consequences of a nuclear war. What exactly prompted you to undertake the study? How long did it take to complete?∂ We first addressed the consequences of a nuclear war between India and Pakistan more than 10 years ago. Please see the papers 12 and 13 here.∂ Now, India and Pakistan have more weapons, and the weapons are larger, and the potential targets are larger, and there are still disputes over Kashmir, so we decided to revisit this problem with an improved climate model (see paper 25 in the link provided above).∂ The actual computer runs only took a couple weeks, but designing the experiments and analysing them and writing the paper took 6 months or so.∂ 2. While the paper says that India and Pakistan are of special concern because of a history of military clashes and other reasons, would a nuclear war between any other two countries be as devastating?∂ It depends on the number of weapons, the size of the weapons, and the targets. A war between the US and Russia could produce 150 Tg (millions of tonnes) of smoke, and would produce a nuclear winter, with temperatures below freezing over land in the summer.∂ India and China could produce more smoke than the India-Pakistan case we studied. We wanted the world to understand the consequences for global climate and food production for various amounts of smoke injected into the upper atmosphere from city and industrial fires.∂ 3. Why did you choose the year 2025 for your study?∂ It is the near future. We want India and Pakistan to understand that their ongoing arms race has no purpose.∂ 4. Considering the tensions between India and Pakistan have escalated since the Pulwama attack in February, what would be the consequences if the nuclear war happens before 2025?∂ It depends on the number of weapons, the size of the weapons, and the targets. There could still be terrible consequences for global climate. We have already analyzed the agricultural response to 5 Tg of smoke. See papers 23, 24, and 26 at the website above.∂ 5. The study notes that India and Pakistan are rapidly increasing their arsenals. Neither countries has signed the Nuclear Nonproliferation Treaty (NPT). Is it not incumbent on United States, Russia, China, France and the United Kingdom (the permanent members of the UN Security Council) to prevent the possibility of a war between India and Pakistan?∂ Of course, that is an opinion. My expertise is in climate change. But I don’t see how those other nations can prevent a nuclear war between India and Pakistan except by setting an example by getting rid of their nuclear weapons. My opinion is that all nine nuclear nations should sign and ratify the 2017 UN Treaty on the Prohibition of Nuclear Weapons.∂ (The Treaty on the Prohibition of Nuclear Weapons was adopted at the United Nations on 7 July 2017 by over 120 countries. The nine countries which possess nuclear weapons did not take part in the negotiations. The treaty prohibits the signatory countries from developing, testing, producing, acquiring, possessing, using or threatening to use nuclear weapons. Read more about the treaty here.∂ India had, in 2017, said that the treaty in no way constitutes or contributes to the development of any customary international law. In July 2019, the MEA had reiterated that India would not be a party to the treaty and shall not be bound by any of the obligations that may arise from it.∂ Pakistan had also said that it was not bound by the treaty because it failed to take into account the interests of all stakeholders—Ed)

### 1NC --- DA

#### Hegemony is on the brink now --- Covid has created momentum for Beijing to cement US heg through increasing regional control in the Middle east

Hamovitz 21 [Lior Hamovitz, Hebrew University of Jerusalem Department of Political Science, Master of Arts, 1-7-2021, “Shifting Hegemony: China’s Challenge to U.S. Hegemony During COVID-19” E-International Relations Accessed on 12-25-2021(yes I was cutting cards on Christmas what of it), https://www.e-ir.info/2021/09/07/shifting-hegemony-chinas-challenge-to-u-s-hegemony-during-covid-19/ ww

Conclusion This article has taken on the task of highlighting the ways in which China has been able to challenge the US’s hegemony in the international system during the coronavirus pandemic. It further sought to underscore the growing importance the MENA region may have as the two countries find themselves battling to regain or strengthen their legitimacy around the world. The scholarship presented in this paper was used to convey the existing literature gap which has yet to address how China’s model of governance and leadership approach are progressively aiding it in undermining the predominance of the US in the current world order, and especially in the Middle East. Yan Xuetong’s work has been key to the theoretical framework and purpose of this paper, as its theory of moral realism focuses on the importance of leadership in allowing a state to rise within the international system and even eclipse another dominant power. Furthermore, his work was utilized to convey the unique and meaningful insight the CS can provide in understanding global power dynamics. Adopting Yan’s framework, based in the core importance of morality, authority, capability, enables us to consider a perspective that could explain unfolding hegemonic shifts. The trajectory Yan hoped China will embark on in writing in book certainly seems to be in motion, albeit discrepantly. Through the pillars of leadership and legitimacy, which were set out as the foundations of hegemony, this paper argued that China has demonstrated during the COVID-19 pandemic the very morality, capability and authority Yan deems are crucial for an aspiring rising state. It was argued that by collaborating with fellow states and international organizations, showcasing crisis-containment capabilities and competent leadership, as well as having policies consistent with promises and fostering trust, Beijing has deeply challenged the perception of Washington’s leadership worldwide. The American government’s failures in addressing the multifaceted demands of the coronavirus crisis have only served to exacerbate its diminishing image as a competent hegemon for the world order. Considering the leadership vacuum the US seems to have opened at the time of the COVID-19 globally, this paper attempted to analyze how the growing legitimacy China and its model of governance are gaining in the Middle East could translate into geopolitical contestation in the region. It was demonstrated that close attention needs to be paid to the MENA, as an area volatile in its own right and predisposed to anti-Western sentiments, where China is getting further entangled as part of its global ambitions. In a post-coronavirus era, with a declining US dominance in the international arena and a rising China, newly galvanized by the leadership and legitimacy credentials it has gained, the Middle East may become fertile grounds for great-power rivalry and a possible hegemonic shift.

#### Privatization of space has been in the interest of maintaining US heg --- Privatization of outer space maintains US leadership in the globe and solar system

Henry 18 [Edward C. Henry, California State University, Sacramento M.A., University of Massachusetts Boston, 8-31-2018, “The United States of Sol: Privatization as a Tool of American Hegemony in the Solar System” University of Massachusetts Boston(Scholar Works), Accessed 12-25-2021, <https://scholarworks.umb.edu/cgi/viewcontent.cgi?article=1511&context=masters_theses> ww

American outer space exploration has been progressively privatized since the end of the Cold War. The choice of privatization was a strategic geopolitical decision in the interest of maintaining American hegemonic leadership on Earth and in the solar system. American Congressional legislation and presidential speeches in the nearly three decades since the collapse of the Soviet Union and the “victory” of the American neoliberal form of capitalism, show support for the expansion of free-market principles into lower-Earth orbit and beyond. However, this is not a new trend. From the beginning of the American entry into the space race, the goal has been to achieve and maintain the dominant position in outer space. With that in mind, the question is, why did the United States choose to privatize its space exploration efforts to assert American hegemonic leadership?∂ The move towards American privatization of outer space aligns with the American quest for hegemonic leadership. This thesis draws on the historical development of the past 60 years and relies on presidential speeches and congressional legislation to reveal how the American government has justified and explained changing trends in US space policy. The thesis assesses the ability of two key international relations paradigms (realism and Marxism) to help explain the different factors behind this privatization trend and its implications for US power.∂ Prior to the 1991 privatization shift, American leadership, reflected in presidential speeches and Congressional legislation, utilized the language of common heritage to promote American space efforts. Presidents Eisenhower and Kennedy established a framework for scientific advancement in space for the betterment of humanity, but always through American leadership. The first space treaty was signed under President Johnson, who heralded the international treaty as the next step in mitigating global conflict and, at a minimum, preventing the spread of human conflict into orbit and the wider solar system.∂ Americans entered the space race in second place, trailing the Soviet Union in several space “firsts.”2 Early Soviet achievements included: the first satellite successfully launched into orbit (Sputnik 1, October 1957), the first human launched successfully into orbit (Yuri Gagarin, April 1961), and the first woman to orbit Earth (Valentina Tereshkova, June 1963). The Americans followed Sputnik a year later with the 1958 launch of the Explorer 1 satellite. Alan Shepard, the first American in outer space, followed Gagarin not a month later. The first American women in space, however, would not occur until Sally Ride successfully launched into orbit in 1983. Though the United States started behind, it ultimately won the space race with the successful 1969 Apollo Moon Landing - a crowning achievement for the National Aeronautics and Space Administration (NASA). The Moon served as the ultimate goal of the space race, carrying a significant symbolic weight: “for the United States, coming in first in the moon race would tend to confirm the general disposition to believe that once the United States makes up its mind to do something it follows through.”3 By the end of the Cold War, the United States was the clear leader in space technology and low-Earth orbit. If NASA was so successful in achieving American national security goals and enshrining US orbital leadership, why did the federal government push privatization so strongly?∂ Realist scholars of International Relations theory would argue American unilateral action to privatize outer space exploration is a natural act of the hegemon, freed from the constraints of balance of power politics under a bipolar world. Marxists would argue that privatization was deliberate act during the rise of the neoliberal practice of capitalism. By critiquing the rise of neoliberal capital to hegemonic status, Marxism highlights key pieces that are missed by the realist explanations of the privatization of outer space: the role of private property, the influence of commercial interests in American government, and the constructed definition of “freedom” and deregulation.∂ This chapter will establish the international legal context necessary to understand Space policy more generally and the regulations set out in international treaties to define and guide state led outer space exploration. It provides an important context for understanding US space policy as well as the following two chapters. What follows is a discussion of the five international outer space treaties that sought to apply what came to be known as the common heritage principles that were developed during the height of the Cold War. The common heritage principles were drafted with the idea of closing the inequalities among the various states and containing conflict (particularly in light of the global nuclear threat).

#### Top military officials agree

Macias and Sheetz 2-3 [Amanda Macias, Amanda Macias covers global trade and foreign policy for CNBC, studied Broadcast Journalism and Finance at the University of Missouri. She is a Knight-Bagehot Fellow in Economics and Business Journalism at Columbia University in New York, Michael Sheetz, space reporter graduated as a Founder’s Scholar from The King’s College with a bachelor of the arts in Politics, Philosophy and Economics, double-minoring in Journalism and Theology, 2-3-2021, “Space Force general says success of private companies like SpaceX helps U.S. secure the space domain”, CNBC, accessed 12-14-2021, <https://www.cnbc.com/2021/02/03/space-force-general-america-owns-space-with-help-from-elon-musks-spacex.html> ww

WASHINGTON – The nation’s top general leading the U.S. military mission in space said Wednesday that he is excited about Wall Street and billionaire investment in the space industry, which has sparked renewed interest in the field among Americans and strong recruitment at the Pentagon’s youngest branch.¶ “There is a ton of excitement across America on space in all sectors,” said Gen. John Raymond, the U.S. Space Force’s chief of operations, when asked by CNBC about the strides made by private space companies like Elon Musk’s SpaceX.¶ “I’ve talked about people knocking on our door wanting to come into the Space Force in numbers greater than what we have slots to fill. I’ve talked in the past about how universities are seeing more students apply for space STEM degrees, which I think is going to be great for our nation,” Raymond added.¶ “I’m excited about all of it, both what we’re doing here on national security and what’s going on in the commercial industry that we can leverage the advantage,” the four-star general said without specifically naming any companies.¶ “The U.S. has always, has long understood that we are stronger with a secure and stable space domain and all of those sectors play into that,” Raymond said.¶ The U.S. Space Force, the Pentagon’s youngest branch, has increasingly looked to partner with the private sector as companies and investors pour into the space industry. The Pentagon is closely watching the progress of rocket builders like Rocket Lab, Astra and Virgin Orbit in addition to SpaceX.¶ Raymond’s comments came on the heels of SpaceX announcing this week that it will fly its first all-civilian crew into orbit later this year, a mission known as Inspiration 4. ¶ The landmark flight, led by billionaire Jared Isaacman, is aimed at using high-profile space tourism to raise support for St. Jude Children’s Research Hospital. Three yet-to-be-announced passengers will accompany Isaacman on the multiday journey around the Earth, with two of the seats to be decided in public online competitions this month.¶ Raymond also called out NASA’s Crew-1 mission, which was the first operational launch of SpaceX’s Crew Dragon spacecraft.¶ “If you look at what’s going on in the civil sector with the launch of U.S. astronauts, and in this last launch a Japanese astronaut from U.S. soil on a commercial launch vehicle, there’s a ton of excitement there,” he said.¶ Raymond did not provide a reaction to SpaceX’s Starship rocket test flight on Tuesday, which resulted in an explosion as it attempted to land.¶ Starship prototype SN9 launched successfully to about 33,000 feet but, like the previous prototype flight in December, the rocket smashed into the ground while attempting to land.¶ Private investment in space companies last year set a fresh annual record, despite industry fears that the Covid-19 pandemic would end the past decade’s momentum, according to a report by Space Capital last month. Builders of rockets and satellites brought in $8.9 billion in 2020, with venture capital and angel investors continuing to pour funds into space businesses.

#### Primacy prevents great-power conflict — multipolar revisionism fragments the global order and causes nuclear war.

Brands & Edel, 19 — Hal Brands; PhD, Henry A. Kissinger Distinguished Professor of Global Affairs at the Johns Hopkins School of Advanced International Studies. Charles Edel; PhD, Senior Fellow and Visiting Scholar at the United States Studies Centre at the University of Sydney. (“The Lessons of Tragedy: Statecraft and World Order;” Ch. 6: Darkening Horizon; Published by *Yale University Press*; //GrRv)

Each of these geopolitical challenges is different, and each reflects the distinctive interests, ambitions, and history of the country undertaking it. Yet there is growing cooperation between the countries that are challenging the regional pillars of the U.S.-led order. Russia and China have collaborated on issues such as energy, sales and development of military technology, opposition to additional U.S. military deployments on the Korean peninsula, and naval exercises from the South China Sea to the Baltic. In Syria, Iran provided the shock troops that helped keep Russia’s ally, Bashar al-Assad, in power, as Moscow provided the air power and the diplomatic cover. “Our cooperation can isolate America,” supreme leader Ali Khamenei told Putin in 2017. More broadly, what links these challenges together is their opposition to the constellation of power, norms, and relationships that the U.S.-led order entails, and in their propensity to use violence, coercion, and intimidation as means of making that opposition effective. Taken collectively, these challenges constitute a geopolitical sea change from the post-Cold War era.

The revival of great-power competition entails higher international tensions than the world has known for decades, and the revival of arms races, security dilemmas, and other artifacts of a more dangerous past. It entails sharper conflicts over the international rules of the road on issues ranging from freedom of navigation to the illegitimacy of altering borders by force, and intensifying competitions over states that reside at the intersection of rival powers’ areas of interest. It requires confronting the prospect that rival powers could overturn the favorable regional balances that have underpinned the U.S.-led order for decades, and that they might construct rival spheres of influence from which America and the liberal ideas it has long promoted would be excluded. Finally, it necessitates recognizing that great-power rivalry could lead to great-power war, a prospect that seemed to have followed the Soviet empire onto the ash heap of history.

Both Beijing and Moscow are, after all, optimizing their forces and exercising aggressively in preparation for potential conflicts with the United States and its allies; Russian doctrine explicitly emphasizes the limited use of nuclear weapons to achieve escalation dominance in a war with Washington. In Syria, U.S. and Russian forces even came into deadly contact in early 2018. American airpower decimated a contingent of government-sponsored Russian mercenaries that was attacking a base at which U.S. troops were present, an incident demonstrating the increasing boldness of Russian operations and the corresponding potential for escalation. The world has not yet returned to the epic clashes for global dominance that characterized the twentieth century, but it has returned to the historical norm of great-power struggle, with all the associated dangers.

Those dangers may be even greater than most observers appreciate, because if today’s great-power competitions are still most intense at the regional level, who is to say where these competitions will end? By all appearances, Russia does not simply want to be a “regional power” (as Obama cuttingly described it) that dominates South Ossetia and Crimea.37 It aspires to the deep European and extra-regional impact that previous incarnations of the Russian state enjoyed. Why else would Putin boast about how far his troops can drive into Eastern Europe? Why else would Moscow be deploying military power into the Middle East? Why else would it be continuing to cultivate intelligence and military relationships in regions as remote as Latin America?

Likewise, China is today focused primarily on securing its own geopolitical neighborhood, but its ambitions for tomorrow are clearly much bolder. Beijing probably does not envision itself fully overthrowing the international order, simply because it has profited far too much from the U.S.-anchored global economy. Yet China has nonetheless positioned itself for a global challenge to U.S. influence. Chinese military forces are deploying ever farther from China’s immediate periphery; Beijing has projected power into the Arctic and established bases and logistical points in the Indian Ocean and Horn of Africa. Popular Chinese movies depict Beijing replacing Washington as the dominant actor in sub-Saharan Africa—a fictional representation of a real-life effort long under way. The Belt and Road Initiative bespeaks an aspiration to link China to countries throughout Central Asia, the Middle East, and Europe; BRI, AIIB, and RCEP look like the beginning of an alternative institutional architecture to rival Washington’s. In 2017, Xi Jinping told the Nineteenth National Congress of the Chinese Communist Party that Beijing could now “take center stage in the world” and act as an alternative to U.S. leadership.38

These ambitions may or may not be realistic. But they demonstrate just how significantly the world’s leading authoritarian powers desire to shift the global environment over time. The revisionism we are seeing today may therefore be only the beginning. As China’s power continues to grow, or if it is successful in dominating the Western Pacific, it will surely move on to grander endeavors. If Russia reconsolidates control over the former Soviet space, it may seek to bring parts of the former Warsaw Pact to heel. Historically, this has been a recurring pattern of great-power behavior—interests expand with power, the appetite grows with the eating, risk-taking increases as early gambles are seen to pay off.39 This pattern is precisely why the revival of great-power competition is so concerning—because geopolitical revisionism by unsatisfied major powers has so often presaged intensifying international conflict, confrontation, and even war. The great-power behavior occurring today represents the warning light flashing on the dashboard. It tells us there may be still-greater traumas to come.

The threats today are compelling and urgent, and there may someday come a time when the balance of power has shifted so markedly that the postwar international system cannot be sustained. Yet that moment of failure has not yet arrived, and so the goal of U.S. strategy should be not to hasten it by giving up prematurely, but to push it off as far into the future as possible. Rather than simply acquiescing in the decline of a world it spent generations building, America should aggressively bolster its defenses, with an eye to preserving and perhaps even selectively advancing its remarkable achievements.

#### Receding US deterrent is a catalyst for great-power conflict — decline causes transition wars and miscalculation.

Brands & Edel, 19 — Hal Brands; PhD, Henry A. Kissinger Distinguished Professor of Global Affairs at the Johns Hopkins School of Advanced International Studies. Charles Edel; PhD, Senior Fellow and Visiting Scholar at the United States Studies Centre at the University of Sydney. (“The Lessons of Tragedy: Statecraft and World Order;” Ch. 7: Rediscovering Tragedy; Published by *Yale University Press*; //GrRv)

Moreover, if discussions of “international order” can quickly take on an abstract quality, the consequences of collapse—the lives lost or ruptured, the prosperity destroyed, the moral depravities committed—can be frighteningly concrete. Thucydides had it right when he described what happens in such a vacuum of security and morality: “Death thus raged in every shape … there was no length to which violence did not go.”3

This is all indisputably ~~depressing~~, but it should not be the least bit surprising. If it were possible to construct an international system that was truly universal in its appeal; if it were possible to freeze global power relationships at that moment of creation; if it were possible for states to put aside the very human ambitions, emotions, and fears that drive their behavior: then, perhaps, the world could permanently escape the competitive impulses that make international orders impermanent and their demise so traumatic. But none of this has ever been possible. International orders, even the most inclusive ones, create winners and losers because they benefit states unequally. The power balances that underpin a given system shift over time, encouraging new tests of strength. And although the human desire for peace and prosperity is strong, countries also remain motivated by ideological passion, greed, and insecurity. The most successful orders can mitigate the effects of these dynamics; they can suppress the sources of conflict and upheaval. But they cannot eliminate them entirely.

This point is essential in considering the trajectory of the post-1945 order. It is tempting for individuals in nearly every geopolitical era to believe that their world is somehow different—that it is immune to the dangers of conflict and collapse. It is alluring to think that progress can be self-sustaining, and that liberal principles can triumph even if liberal actors are no longer preeminent. To do so, however, is to fall prey to the same ahistorical mindset that so predictably precedes the fall. Yes, the American order is exceptional in the level of stability, prosperity, and liberal dominance it has provided, and in the level of consent it has generated from countries around the world. Yet it is not so exceptional as to be exempt from the dangers of decline and decay. As the Greeks surely would have realized, in fact, it is precisely when one succumbs to the illusion that tragedy is impossible that tragedy becomes all the more likely.

II

This leads to a second component of a tragic sensibility—an appreciation that tragedy is once again stalking global affairs. The U.S.-led system is undoubtedly strong and resilient in many respects, as shown by the simple fact that it has survived as long as it has. Yet what endured in the past is not destined to endure in the future, and today the structure is groaning as the stresses mount.

Long-standing principles such as nonaggression and freedom of navigation are being undermined from Eastern Europe to the South China Sea. International predators like North Korea and radical jihadist groups are using creative, asymmetric strategies to cause geopolitical disruption out of all proportion to their material power. The democratic wave has receded amid the growing prevalence and power of authoritarianism. Revisionist autocracies are reshaping regional environments in Europe, the Middle East, and East Asia, and waging sophisticated assaults against the political systems and geopolitical positions of their competitors. These countries are building privileged spheres of influence in critical areas of the globe; they are casting ever longer shadows, both strategic and ideological, across the international landscape. Meanwhile, the countries with the most to lose should the current system crack are too often divided and demoralized; their strategic torpor and distraction are creating vacuums that the revisionists are all too happy to fill. The protectors of the post-1945 order seem stuck in neutral, or even reverse, as the attackers push forward. This has historically been a dangerous combination.

Faced with this daunting panorama, some analysts will take refuge in the hope that these challenges will simply exhaust themselves, or that revisionist powers will be satiated once their regional ambitions are fulfilled. Yet most systems tend toward more, rather than less, entropy over time, meaning that more, rather than less, energy is required to stabilize them. And revisionist powers rarely reach some natural point at which their aspirations subside; those aspirations often grow with each success.4 Today, the dissatisfied dictatorships, especially Russia and China, see themselves as being locked in a form of geopolitical conflict with the United States; they are already using force and other types of coercion to chip away at the American order. Should they succeed in claiming regional primacy and reestablishing a spheres-of-influence world, the result would be not to dampen but to inflame international conflict. Competition among the great powers would intensify as hostile spheres rub up against one another; the security of the global commons—the foundation of international prosperity—would be threatened by escalating geopolitical rivalry. The prospects for self-determination and liberalism would fade as small states fall under the sway of stronger, authoritarian neighbors. And crucially, as Daniel Twining notes, regional dominance could serve as a “springboard for global contestation”—for the renewed clashes for systemic dominance that Americans thought they had left behind with the end of the Cold War.5

It is impossible to predict precisely when the pressures on the existing order might become unbearable, or to know how close we are to that critical inflection point at which the dangers metastasize and the pace of decay dramatically accelerates. One can only speculate what the terminal crisis of the system will look like if and when it occurs. What is clear is that the telltale signs of erosion are already ubiquitous and the trend-lines are running in the wrong direction. The first step toward recovery is admitting you have a problem. Having a tragic sensibility requires seeing the world for what it is and where it is going, especially when the outlook is ominous.

III

If the international order is under strain, however, it does not follow that its collapse is unavoidable. Here a third aspect of a tragic sensibility is vital: the ability to reject complacency without falling into fatalism.

Nietzsche defined tragic pleasure as the “reaffirmation of the will to live in the face of death.”6 It was just such a rejection of fatalism—of the belief that the next great global crackup was inevitable—that motivated U.S. policymakers to create the post-1945 order and sustain it through the crises that followed. Today, it is true enough that the grandest aspirations of the post–Cold War era are unlikely to be fulfilled anytime soon. Given the instability and revisionism roiling the international environment, it is simply beyond America’s power—if it was ever possible in the first place—to create a truly global order in which liberal values are universal, geopolitical competition has ceased, and authoritarian rivals have been fully pacified and converted into “responsible stakeholders.” Yet the existing international order, incomplete and threatened as it is, still constitutes a remarkable historical achievement. The creation of a global balance of power that favors the democracies, the prevention of unchecked aggression and intimidation by predatory powers, and the promotion of a prosperous and an integrated world in which liberal values have achieved great prevalence are all triumphs worth preserving. A more reasonable goal, then, would be to defend this existing order against the depredations of those attacking it, and America undoubtedly has the power for this essential undertaking.

# Case

### 1NC --- AT --- Kessler

#### Kessler is so unlikely, we don’t even need to remove debris

**Mosher** **’19** [Dave; September 3rd; Journalist with more than a decade of experience reporting and writing stories about space, science, and technology; Business Insider, “Satellite collisions may trigger a space-junk disaster that could end human access to orbit. Here’s How,” <https://www.usafa.edu/app/uploads/Space_and_Defense_2_3.pdf>; GR]

The Kessler syndrome plays center-stage in the movie "Gravity," in which an accidental space collision endangers a crew aboard a large space station. But Gossner said that type of a runaway space-junk catastrophe is unlikely. "Right now I don't think we're close to that," he said. "I'm not saying we couldn't get there, and I'm not saying we don't need to be smart and manage the problem. But I don't see it ever becoming, anytime soon, an unmanageable problem." There is no current system to remove old satellites or sweep up bits of debris in order to prevent a Kessler event. Instead, space debris is monitored from Earth, and new rules require satellites in low-Earth orbit be deorbited after 25 years so they don't wind up adding more space junk. "Our current plan is to manage the problem and not let it get that far," Gossner said. "I don't think that we're even close to needing to actively remove stuff. There's lots of research being done on that, and maybe some day that will happen, but I think that — at this point, and in my humble opinion — an unnecessary expense." A major part of the effort to prevent a Kessler event is the Space Surveillance Network (SSN). The project, led by the US military, uses 30 different systems around the world to identify, track, and share information about objects in space. Many objects are tracked day and night via a networkof radar observatories around the globe. Optical telescopes on the ground also keep an eye out, but they aren't always run by the government. "The commercial sector is actually putting up lots and lots of telescopes," Gossner said. The government pays for their debris-tracking services. Gossner said one major debris-tracking company is called Exoanalytic. It uses about 150 small telescopes set up around the globe to detect, track, and report space debris to the SSN. Telescopes in space track debris, too. Far less is known about them because they're likely top-secret military satellites. Objects detected by the government and companies get added to a catalog of space debris and checked against the orbits of other known bits of space junk. New orbits are calculated with supercomputers to see if there's a chance of any collisions. Diana McKissock, a flight lead with the US Air Force's 18th Space Control Squadron, helps track space debris for the SSN. She said the surveillance network issues warnings to NASA, satellite companies, and other groups with spacecraft, based on two levels of emergency: basic and advanced. The SSN issues a basic emergency report to the public three days ahead of a 1-in-10,000 chance of a collision. It then provides multiple updates per day until the risk of a collision passes. To qualify for such reporting, a rogue object must come within a certain distance of another object. In low-Earth orbit, that distance must be less than 1 kilometer (0.62 mile); farther out in deep space, where the precision of orbits is less reliable, the distance is less than 5 kilometers (3.1 miles). Advanced emergency reports help satellite providers see possible collisions much more than three days ahead. "In 2017, we provided data for 308,984 events, of which only 655 were emergency-reportable," McKissock told Business Insider in an email. Of those, 579 events were in low-Earth orbit (where it's relatively crowded with satellites).

#### It takes centuries and adaptation solves

Muelhaupt 19 (Ted, Associate Principal Director of the Systems Analysis and Simulation Subdivision (SASS) and Manager of the Center for Orbital and Reentry Debris Studies at The Aerospace Corporation, M.S., B.S. Aerospace and Aeronautical Engineering & Mechanics, University of Minnesota - Twin Cities, Senior Member of the American Institute of Aeronautics and Astronautics, “How Quickly Would It Take For the Kessler Syndrome To Destroy All The Satellites In LEO? And Could You See This Happening From Earth?”, Quora, 2/28/2019, https://www.quora.com/How-quickly-would-it-take-for-the-Kessler-Syndrome-to-destroy-all-the-satellites-in-LEO-And-could-you-see-this-happening-from-Earth)

The dynamics of the Kessler Syndrome are real, and most people studying it agree on the concept: if there is sufficient density of objects and mass, a chain reaction of debris breaking up objects and creating more debris can occur. But the timescale of this process takes decades and centuries. There are many assumptions that go into these models. Though there is still argument about this, many people in the field think that the process is already underway in low earth orbit. But others, including myself, think we can stop it if we take action. This is a slow motion disaster that we can prevent.

#### There is no impact.

Von Fange **’**17 [Daniel Von Fange is a full stack developer that builds web platforms, with a particular interest in space applications. Kessler Syndrome is Over Hyped. May 21, 2017. braino.org/essays/kessler\_syndrome\_is\_over\_hyped/]

Kessler Syndrome is overhyped. A chorus of online commenters great any news of upcoming low earth orbit satellites with worry that humanity will to lose access to space. I now think they are wrong. What is Kessler Syndrome? Here’s the popular view on Kessler Syndrome. Every once in a while, a piece of junk in space hits a satellite. This single impact destroys the satellite, and breaks off several thousand additional pieces. These new pieces now fly around space looking for other satellites to hit, and so exponentially multiply themselves over time, like a nuclear reaction, until a sphere of man-made debris surrounds the earth, and humanity no longer has access to space nor the benefits of satellites. It is a dark picture. Is Kessler Syndrome likely to happen? I had to stop everything and spend an afternoon doing back-of-the-napkin math to know how big the threat is. To estimate, we need to know where the stuff in space is, how much mass is there, and how long it would take to deorbit. The orbital area around earth can be broken down into four regions. Low LEO - Up to about 400km. Things that orbit here burn up in the earth’s atmosphere quickly - between a few months to two years. The space station operates at the high end of this range. It loses about a kilometer of altitude a month and if not pushed higher every few months, would soon burn up. For all practical purposes, Low LEO doesn’t matter for Kessler Syndrome. If Low LEO was ever full of space junk, we’d just wait a year and a half, and the problem would be over. High LEO - 400km to 2000km. This where most heavy satellites and most space junk orbits. The air is thin enough here that satellites only go down slowly, and they have a much farther distance to fall. It can take 50 years for stuff here to get down. This is where Kessler Syndrome could be an issue. Mid Orbit - GPS satellites and other navigation satellites travel here in lonely, long lives. The volume of space is so huge, and the number of satellites so few, that we don’t need to worry about Kessler here. GEO - If you put a satellite far enough out from earth, the speed that the satellite travels around the earth will match the speed of the surface of the earth rotating under it. From the ground, the satellite will appear to hang motionless. Usually the geostationary orbit is used by big weather satellites and big TV broadcasting satellites. (This apparent motionlessness is why satellite TV dishes can be mounted pointing in a fixed direction. You can find approximate south just by looking around at the dishes in your northern hemisphere neighborhood.) For Kessler purposes, GEO orbit is roughly a ring 384,400 km around. However, all the satellites here are moving the same direction at the same speed - debris doesn’t get free velocity from the speed of the satellites. Also, it’s quite expensive to get a satellite here, and so there aren’t many, only about one satellite per 1000km of the ring. Kessler is not a problem here. How bad could Kessler Syndrome in High LEO be? Let’s imagine a worst case scenario. An evil alien intelligence chops up everything in High LEO, turning it into 1cm cubes of death orbiting at 1000km, spread as evenly across the surface of this sphere as orbital mechanics would allow. Is humanity cut off from space? I’m guessing the world has launched about 10,000 tons of satellites total. For guessing purposes, I’ll assume 2,500 tons of satellites and junk currently in High LEO. If satellites are made of aluminum, with a density of 2.70 g/cm3, then that’s 839,985,870 1cm cubes. A sphere for an orbit of 1,000km has a surface area of 682,752,000 square KM. So there would be one cube of junk per .81 square KM. If a rocket traveled through that, its odds of hitting that cube are tiny - less than 1 in 10,000. So even in the worst case, we don’t lose access to space. Now though you can travel through the debris, you couldn’t keep a satellite alive for long in this orbit of death. Kessler Syndrome at its worst just prevents us from putting satellites in certain orbits. In real life, there’s a lot of factors that make Kessler syndrome even less of a problem than our worst case though experiment. Debris would be spread over a volume of space, not a single orbital surface, making collisions orders of magnitudes less likely. Most impact debris will have a slower orbital velocity than either of its original pieces - this makes it deorbit much sooner. Any collision will create large and small objects. Small objects are much more affected by atmospheric drag and deorbit faster, even in a few months from high LEO. Larger objects can be tracked by earth based radar and avoided. The planned big new constellations are not in High LEO, but in Low LEO for faster communications with the earth. They aren’t an issue for Kessler. Most importantly, all new satellite launches since the 1990’s are required to include a plan to get rid of the satellite at the end of its useful life (usually by deorbiting) So the realistic worst case is that insurance premiums on satellites go up a bit. Given the current trend toward much smaller, cheaper micro satellites, this wouldn’t even have a huge effect. I’m removing Kessler Syndrome from my list of things to worry about.