# 1NC vs HWL IC

## AT: Space Col

### 1NC - T/L - Space Col Good

#### Only private sector solves it

Diakovska & Aliieva 20 [Halyna Diakovska and Olga Aliieva, Ph.D.s in Philosophy, Associate Professors, Donbass State Pedagogical University, “Consequentialism and Commercial Space Exploration,” 2020, *Philosophy and Cosmology*, Vol. 24, pp. 5-24, https://doi.org/10.29202/phil-cosm/24/1, EA]

The experience of the USA showed that leadership in space exploration, which is maintained solely through public funding, could be erroneous. Since 1984, the share of public funding has gradually decreased in space telecommunications, commercial space transportation, remote sensing, etc., while the share of participation of non-state enterprises has increased rapidly. A legal and regulatory framework has been modified to stimulate space commercialization. The stages of space law development are discussed in the research of Valentyn Halunko (Halunko, 2019), Larysa Soroka (Soroka & Kurkova, 2019), etc. Larysa Soroka and Kseniia Kurkova explored the specifics of the legal regulation of the use and development of artificial intelligence for the space area (Soroka & Kurkova, 2019).

As a result of changing the legal framework and attracting private investors to the space market, the US did not lose its leadership in space exploration, but rather secured it. Private investment along with government funding have significantly reduced the risk of business projects in the space industry. The quality and effectiveness of space exploration programs have increased.

In 2018, Springer published an eloquent book The Rise of Private Actors in the Space Sector. Alessandra Vernile, the author of the book, explores a broad set of topics that reveal the role of private actors in space exploration (Vernile, 2018). The book covers the following topics: “Innovative Public Procurement and Support Schemes,” “New Target Markets for Private Actors,” etc. In the “Selected Success Stories,” Vernile provides examples of successful private actors in space exploration (Vernile, 2018).

The current level of competition, which has developed on the space market, allows us to state the following fact. Private space companies have been able to compete with entire states in launching spacecraft, transporting cargo to orbital stations, and exploring space objects. The issue of mining on space objects, the creation of space settlements and the intensive development of the space tourism market are on the agenda.

In the 21st century, the creation of non-governmental commercial organizations specializing in the field of commercial space exploration, is regarded as an ordinary activity. They are established as parts of the universities around projects funded by private investors. For example, Astropreneurship & Space Industry Club based on the MIT community (Astropreneurship, 2019).

Large-scale research in the field of commercial space exploration, as well as the practical results achieved, led to the formation of a new paradigm called “New Space” ecosystem. The articles of Deganit Paikowsky’s (Paikowsky, 2017), Clelia Iacomino (Iacomino & Ciccarelli, 2018) et al. reveal its key meanings and the opportunities it offers in the space sector. The “New Space” ecosystem is a new vision for commercial space exploration. It is the formation of a cosmic worldview, in which the near space with all the wealth of its resources and capabilities, becomes a part of the global economy and the sustainable development of the society. The “New Space” ecosystem offers the following ways for commercial space exploration (Iacomino & Ciccarelli, 2018):

1. Innovative public procurement and support schemes, which significantly expand the role of commercial actors in space exploration.

2. Attracting new entrants in the space sector. First of all, these are companies working in the domain of Information and communications technology, artificial intelligence, etc. that are expanding their research in space markets. They offer innovative business models and new solutions to space commercialization.

3. Innovative industrial approaches based on new processes, methods, and industrial organization for the development and production of space systems or launchers.

4. Disruptive market solutions, which significantly reduce commercial space exploration prices, increase labor productivity, provide new types of services, etc.

5. Substantial private investment from different sources and involving different funding mechanisms. For instance, these are private fortunes, venture capital firms, business angels, private equity companies, or banks, etc.

6. Involvement of an increasing number of space-faring nations investing in the acquisition of turnkey space capabilities or even in the development of a domestic space industrial base. This expands the space markets and makes it more competitive.

The analysis of the research and advances in commercial space exploration allows us to draw the following conclusions:

1. In fact, the space market has already been created. It is currently undergoing continuous development that will integrate the resources and capabilities of the near space into the global economy over the next decade.

2. A new paradigm, denoted by the term “New Space” ecosystem, is at the heart of the created space market. The “New Space” ecosystem is a step towards the formation of cosmic thinking, in which outer space, with its resources and capabilities, is considered as a sphere of human activities.

3. Space market regulates space law, which is constantly evolving. The space law develops within the bounds of international law. In essence, the space market is integrated into the international legal field and is governed by its laws.

#### Massive spillover effects, solves resources and ex risks

Green 21 [Brian Patrick Green, director of technology ethics at the Markkula Center for Applied Ethics, Santa Clara University, “Space Ethics,” 2021, Rowman, pp. 4-5, EA]

In favor of going into space are such basics as gaining scientific knowledge and developing beneficial new technologies, both of which space exploration and use have already begun to accomplish with dramatic and sometimes unexpected effects for humankind. Scientific advancements include astronomical and cosmological knowledge from various orbiting experiments and telescopes that have let us gain unprecedented understanding about our universe. But space activities have also contributed to a great deal of scientific knowledge about our Earth, including measurements of environmental status, habitat conversion and destruction, detailed knowledge of anthropogenic climate change, and much about Earth’s chemistry and geology. We have also learned a great deal about our local planets, for example, that a runaway “greenhouse effect” in the atmosphere of Venus makes the surface scorchingly hot, while too little greenhouse effect on Mars leaves the surface quite cold. There have also been significant contributions made to medical science, especially concerning the behavior of the human body when subjected to radiation, microgravity, nutritional restrictions, and so on.

On the technological side, everything with American global positioning system (GPS), Russian Glonass, or other global navigation systems—from smartphones to military vehicles—relies on a network of satellites above us, placed there by rocketry and painstakingly tracked with instruments developed for the task. So many technologies have been pioneered by space exploration and use that it is hard to list them all, but some of the more important ones include weather satellites (which are not only convenient but also allow preparation for and evacuation from severe weather), communication satellites, solar photovoltaic (PV) cells, advances in electronics and computers, advances in materials science, and so on.

Space is also an important location for the contention of national interests in a geopolitical and military sense. As the ultimate “high ground” in battle, space allows certain asset classes such as spy satellites to exist in a position unassailable by many or most opponents. While permanent weapons stations and weapons of mass destruction are banned from space by the United Nations Outer Space Treaty (OST), 6 that has not stopped the development of weapons that are impermanent (such as missiles, missile interceptors, and antisatellite weapons) or the research and development of possible space-based weapons platforms, such as were envisioned by U.S. president Ronald Reagan’s Strategic Defense Initiative, nicknamed “Star Wars.” While military and political interests may ultimately seem to be a less noble reason to explore and use space, relative power, safety, and security certainly are very human interests and are valuable to those who feel they are being protected by them.

Space activities are also a key way of promoting international cooperation and global awareness. While the international competition of the “space race” fueled one nation all the way to the Moon, shortly afterward, the Apollo-Soyuz program announced a thawing of this competition and commenced a period of cooperation between the United States of America and the Union of Soviet Socialist Republics. Currently the International Space Station continues this cross-national cooperation in space, with five space agencies (representing Canada, the European Space Agency nations, Japan, Russia, and the United States) participating. In addition to cooperation in space exploration itself, the perspective given from space has itself helped to produce some feelings of unity on Earth, with the famous “Blue Marble” and “Earthrise” pictures showing Earth’s oneness and scientific discoveries supported by space science, such as those related to climate change, helping to promote international cooperation to address these problems.

Gaining access to new critical resources may be another reason to go into space. Earth is a finite planet, and certain elements on Earth are very rare in the planetary crust, particularly platinum group metals that are very dense and siderophilic (iron-loving) and so have tended to sink toward the core over the natural history of the planet. However, asteroids and other objects in space (for example, planets, comets, and moons) can sometimes have these elements in abundance and in more available locations, making them potentially excellent sources for these valuable materials. Now-defunct asteroid-mining startup Planetary Resources once estimated that one “platinum-rich 500 meter wide asteroid contains . . . 1.5 times the known world-reserves of platinum group metals (ruthenium, rhodium, palladium, osmium, iridium, and platinum).” 7 In addition to returning elements to a resource-hungry Earth, further exploration and development of space will require access to resources that are not purely sourced from Earth. In particular, it will be necessary to gain access to water, which is relatively rare in the inner solar system and which would be far too costly to transport in any significant amounts from the Earth’s surface.

Another reason that humans may want to explore space would be to create a “backup Earth” to hedge against global catastrophic and existential risks (risks that may cause widespread disaster or human extinction, respectively) on our home planet. 8 Earth has always been a dangerous place for humans, with asteroid impacts, supervolcanic eruptions, pandemic disease, and other natural hazards threatening civilization. Now, in addition to these natural threats, human-made hazards such as nuclear weapons, climate change, biotechnology, nanotechnology, and artificial intelligence may threaten not only the viability of technological civilization but perhaps the survival of human life itself. A serious global-scale catastrophe could set back civilization many decades or centuries, and the worst disasters could cause human extinction. In one scenario, in which 100 percent of humanity dies, all of human effort for all of history would be for nothing. However, were the same global catastrophe to happen to Earth, yet humans were a multiplanetary species with just one self-sustaining settlement off-Earth, it would not result in the end of human civilization or human extinction. Instead while the same unimaginable fate would befall the Earth (certainly no mere triviality, with perhaps the deaths of 99.999 percent of all humans and possibly the destruction of the ecosphere and everything in it), at least all of human and planetory history would not be for nothing. Human life and culture would go on elsewhere, as well as other Earth species. This is a dire fate, but less terrible than the first.

### 1NC - AT: Colonization Infeasible

#### Colonies in space are sustainable and rely on planetary resources

Haynes 19, 5/17, Korey "O’Neill colonies: A decades-long dream for settling space," Astronomy, https://astronomy.com/news/2019/05/oneill-colonies-a-decades-long-dream-for-settling-space Top of Form

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Last week, Amazon founder Jeff Bezos revealed his spaceship company’s new lunar lander, dubbed Blue Moon, and he spelled out a bold and broad vision for humanity’s future in space. Faced with the limits of resources here on Earth, most fundamentally energy, he pointed to life in space as a solution. “If we move out into the solar system, for all practical purposes, we have unlimited resources,” Bezos said. “We could have a trillion people out in the solar system.” And while colonies on other planets would be plagued by low gravity, long distances to Earth (leading to communication delays), and further limits down the road, those weaknesses are avoided if the colonies remain truly in space. To that end, Bezos instead suggested people consider taking up residence in O’Neill colonies, a futuristic concept for space settlements first dreamed up decades ago. “These are very large structures, miles on end, and they hold a million people or more each.” Gerard O’Neill was a physicist from Princeton University who teamed up with NASA in the 1970s on a series of workshops that explored efficient ways for humans to live off-world. Beyond influencing Bezos, his ideas have also deeply affected how many space experts and enthusiasts think about realistic ways of living in space. “What will space colonies be like?” O’Neill once asked the Space Science Institute he founded. “First of all, there’s no point in going out into space if the future that we see there is a sterile future of living in tin cans. We have to be able to recreate, in space, habitats which are as beautiful, as Earth-like, as the loveliest parts of planet Earth — and we can do that.” Of course, neither O’Neill nor anyone since has actually made such a habitat, but in many ways, the concepts he helped developed half a century ago remain some of the most practical options for large-scale and long-term space habitation. While NASA has mostly focused on exploring the moon and Mars in recent years, O’Neill colonies offer an option untethered to any planetary body. Instead, people would live in enormous circular structures in space that would be capable of hosting many thousands of people — or even millions according to Bezos — on a permanent basis. You may have seen these kinds of colonies in science fiction, from Star Trek, to the movie Interstellar. But in real life, researchers have thought up a a few variations: either a sphere, a cylinder, or a ring-shaped torus. All of these are designed to rotate and create a centrifugal force that mimics gravity for the inhabitants. While the sizes and specifications of the colonies vary, there are a few staples. In general, O’Neill colonies were designed to be permanent, self-sustaining structures. That means they would use solar power for electrical energy and for growing crops. The outer walls of an O’Neill colony are generally pictured as a transparent material, so that mirrors can aim sunlight through its walls as needed to provide light and energy – or to allow darkness, a feature humans also need, especially while we sleep. But building these colonies is a challenge beyond any humans have accomplished so far in space, and Bezos acknowledged that. He referred to two “gates” in his announcement, which he clarified as challenges that humans need to overcome. The first, which his company Blue Origin and other space entrepreneurs have been tackling, is to reduce the cost and difficulty of getting to space at all. But the second involves using resources from space, rather than hauling them from Earth. Bezos isn’t alone in such thinking. Most of NASA’s long-term plans for the Moon and Mars involve rely on harvesting materials and manufacturing products locally, using lunar and martian regolith to build and repair structures. And in the shorter term, three of the dozen experiments NASA selected as the first to fly as part of the new lunar program — possibly even by the end of the year — are what NASA terms “resource prospecting instruments.” That pairs well with O’Neill’s vision. These colonies are meant to use resources gathered from space, whether asteroids, the Moon, or even Mars. Doing so avoids the costly effort of heaving materials and goods out of Earth’s deep gravity well. That means they would be built using materials available cheaply in space. The humans and their attendant plants and animals would need to be carried from Earth. But raw materials like oxygen, nitrogen and aluminum are plentiful in the solar system, and mining for resources in space is a common theme across space settlement discussions. Because of their size, the colonies should be able to act as fully independent ecosystems, with plants to cycle air and water and resource cycles not so dissimilar from Earth. Humans are a long way from being able to launch anything like an O’Neill colony in the near future. But it’s somewhat telling that, after 50 years of space exploration and technological achievement, one of the modern leaders in private spaceflight is still espousing an idea from the first days of space exploration.

### 1NC - AT: Public Sector Bad

#### Private sector gets us off the rock.

Diakovska 20 [Halyna Diakovska and Olga Aliieva, Ph.D.s in Philosophy, Associate Professors, Donbass State Pedagogical University, “Consequentialism and Commercial Space Exploration,” 2020, *Philosophy and Cosmology*, Vol. 24, pp. 5-24, https://doi.org/10.29202/phil-cosm/24/1, EA]

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### 1NC --- AT: Colony War

#### No war from space colonization

Britt 16 [(Ryan, contributer to Inverse), “Mutually Assured Destruction Will End Space War,” Inverse, 8/8/16, <https://www.inverse.com/article/19284-future-space-was-insurgency-mutually-assured-destruction-star-wars-colonialism>] MN

University of Edinburgh Astrobiology Professor Charles Cockell, author of the book Dissent, Revolution and Liberty Beyond Earth, spends a lot of time thinking about space battles and how mankind could learn to resolve its differences in a non-Earth environment. This bears thinking about, Cockell explains, because the potential for loss of life and destruction in space is deeply problematic. And Earth solutions don’t necessarily translate.

“Destructive revolution is something to be avoided in space,” he told Inverse, “But dissent is good - it’s part of the continuous re-adjustment of society to new conditions - conflicting views about the way to deal with problems that are brought into collision resulting in a conclusion, which if wrong, can be further changed by the next round of dissent.”

Whether an extra-Earth society were living on the Moon, or Mars, or in some kind of space colony, the dangerous and omnipresent life-threatening conditions inherently change the nature of interaction and co-dependence. If blowing-up a module or a space station could lead to the immediate eradication of everyone inside, the people inside that module are less likely to attack other modules capable of that violence. As any fan of geopolitical Realism will point out, nuclear powers have historically avoided going to war with each other — albeit narrowly.

Cockell doesn’t just consider the political endgame of space movement. He thinks about how things get there. It turns out that it would be relatively easy for a despot like the Emperor to rise to power because of the distances between star systems. “If the speed of light sets a real limit to information exchange, then planetary outposts are likely to be places where there can be no rapid free exchange of information from outside,” Professor Cockell points out.

This means that the amounts of information an average person receives in a galaxy like Star Wars of Dune is limited to begin with and that the interplanetary distances “make it easier to control the extent of incoming information.” The divide part of “divide and conquer” is relatively simple.

Still, if we hew closer to science fiction scenarios in which the space-action remains modest, laser and explosion style revolutions seem less and less likely. In Robert A. Heinlein’s novel The Moon is a Harsh Mistress a disenfranchised lunar colonists revolt. In the Expanse, asteroid belt denizens get increasingly unruly about their second-class citizen status. Babylon 5 features Martians rising up against the People (their ancestors) on Earth. Cockell says these depictions of “an outpost seeking to reduce the power or influence of an overbearing authority” are the most realistic stories in science fiction. Yet, Cockell points out that it doesn’t make a huge amount of sense for a powerful group of space people to marginalize a group charged with the colonization or settlement of less accessible world very wise. If colonial history is any indication, the people at the fringes will most likely be there to supply the bulk of the population with something they need or desperately want.

“I would have thought there would be a strong incentive for minimizing economic differences because of the very strong interdependence required to live in space,” Cockell says. “Treating people who make the oxygen you breathe as slaves does not seem a good policy.”

Let’s imagine an Elysium-style space station, or even a Babylon 5-esque set-up. A certain amount of people are living in the comfort of artificial gravity and running water, and oxygen, and another part of population has been marginalized to keep these things running. Would they start zapping people or blowing enemies out of various airlocks?

“A bunch of people refusing to tend to the oxygen producing machines - just not turning up to work could be non-violent but very very politically powerful,” Cockell said, “Under such a strike, the authorities are under strong pressure to resolve the conflict without force and before people are deprived of something vital.”

In this way, living in a space station, or a space colony could theoretically create an insanely positive form of dissent which we haven’t yet glimpsed here on Earth. Peaceful governing in space is something which Cockell describes as “vital,” since to live in space is to live somewhere where the “the environment is instantaneously lethal.” It’s very likely future space colonists will have this in mind as some knowledge of the inherent dangerousness of space seems like a prerequisite for hypothetical future space colonists.

### 1NC --- AT: Warming !

#### No anthropogenic risks

* peer-reviewed journal shows IPCC exaggeration
* history proves resilience
* no extinction- warming under Paris goals
* rock breaking strategy could offset warming

IBD 18 [Investors Business Daily, Citing Study from Peer reviewed journal by Lewis and Curry, “Here's One Global Warming Study Nobody Wants You To See”, 4/25/18, https://www.investors.com/politics/editorials/global-warming-computer-models-co2-emissions/]

Settled Science: A new study published in a peer-reviewed journal finds that climate models exaggerate the global warming from CO2 emissions by as much as 45%. If these findings hold true, it's huge news. No wonder the mainstream press is ignoring it.

In the study, authors Nic Lewis and Judith Curry looked at actual temperature records and compared them with climate change computer models. What they found is that the planet has shown itself to be far less sensitive to increases in CO2 than the climate models say. As a result, they say, the planet will warm less than the models predict, even if we continue pumping CO2 into the atmosphere.

As Lewis explains: "Our results imply that, for any future emissions scenario, future warming is likely to be substantially lower than the central computer model-simulated level projected by the (United Nations Intergovernmental Panel on Climate Change), and highly unlikely to exceed that level.

How much lower? Lewis and Curry say that their findings show temperature increases will be 30%-45% lower than the climate models say. If they are right, then there's little to worry about, even if we don't drastically reduce CO2 emissions.

The planet will warm from human activity, but not nearly enough to cause the sort of end-of-the-world calamities we keep hearing about. In fact, the resulting warming would be below the target set at the Paris agreement.

This would be tremendously good news.

The fact that the Lewis and Curry study appears in the peer-reviewed American Meteorological Society's Journal of Climate lends credibility to their findings. This is the same journal, after all, that recently published widely covered studies saying the Sahara has been growing and the climate boundary in central U.S. has shifted 140 miles to the east because of global warming.

The Lewis and Curry findings come after another study, published in the prestigious journal Nature, that found the long-held view that a doubling of CO2 would boost global temperatures as much as 4.5 degrees Celsius was wrong**.** The most temperatures would likely climb is 3.4 degrees.

It also follows a study published in Science, which found that rocks contain vast amounts of nitrogen that plants could use to grow and absorb more CO2, potentially offsetting at least some of the effects of CO2 emissions and reducing future temperature increases.

### 1NC --- China!

#### Warming unlocks Northern Siberia – arable land attracts massive Chinese migration.

Lustgarten ’20 [Abrahm; senior environmental reporter for ProPublica; 12-16-2020; "The Big Thaw: How Russia Could Dominate a Warming World"; ProPublica; https://www.propublica.org/article/the-big-thaw-how-russia-could-dominate-a-warming-world; Accessed 6-22-2021; AI]

IN THE NEAR term, while Russia may prefer its migrants to come from Central Asia and other countries farther south, it’s the Chinese who seem **most likely to come**. They’ve already settled throughout Siberia and the Far East, sometimes through intermarriage with Russian citizens — which makes them eligible for land-disbursement benefits — or by leasing lands from Russians who received it under government giveaways. At one point, Russian news articles described more than 1.5 million Chinese living in southern Russian territories, though precise numbers don’t exist; some experts say the number is probably much lower. This year, many returned to China amid fears of the closure of the border because of the coronavirus. But most people, including Karaganov, expect they’ll be back, tantalizing Russians with prospects for growth while at the same time triggering the age-old racist tendencies that have clouded Russia’s efforts to assimilate outsiders of non-Russian descent.

When Dima first came from the city of Shenyang, at 26, adventurous migrants were chasing opportunities across the Russian frontier. He had taken a train to Khabarovsk, the largest city in the Russian East, and then continued west on rumors of free arable land. Quickly enough he found work on a collective near Dimitrovo and hustled produce to buyers along the railroad to make a living until, five years later, the collective folded and most of the Russians moved away.

Dima saw it as an opportunity. The China he’d left was urban, crowded and poor, and this part of Russia was like the wild east, flush with subsidies, space and opportunity. His wife, a Russian citizen, qualified for a cheap loan: enough for farm equipment and 50 acres to grow soybeans and barley for feed. By 2020 Dima had tilled profits into more land until he was running two large combines over nearly 6,500 acres of soybeans and employing 15 mostly Chinese workers to do it. And throughout it all, he had begun to fit in. “My neighbors see me as Dima,” he says, speaking Russian in a thick Chinese accent, “although I can’t hide the fact I don’t speak well.”

Dima says he is confident that, once the pandemic ends, more of his countrymen will be drawn to the region, probably with **bigger investors and bigger companies**. “You can’t retreat,” he says, noting that they’ve wagered too much money here. “They will come.” These days, much of the Chinese money is in Vladivostok, a breezy and moneyed port city scattered over rolling hills on the shoreline of the Sea of Japan, about nine hours by jet from Moscow. It’s through here that Chinese companies have begun channeling billions of dollars toward Russian land leases and farm operations, and from here that the farms are shipping thousands of tons of soybeans and corn and wheat south to Chinese cities. By video call from his office’s modern glass-walled conference room at the Russian Far East Investment and Export Agency in Vladivostok, Absamat Dzhanboriev, the agency’s agricultural investment director, describes a steep rise in agricultural production that can come only from large-scale corporate farming. In 2018 more than 900,000 tons of soybeans were exported from the East. Soon, he says, the region will harvest two million tons of soybeans from 3.7 million acres of farmed land — an area roughly the size of Connecticut. And the **more the land warms**, the farther north the industry will be able to push, eventually doubling farmed land again, producing **nearly six million tons or more each year**.

Chinese money supports 14% of new farm development in the region, more than any other foreign source. Last year, for example, Chinese investors, including a state-owned company, used a Russian subsidiary to start developing 123,000 acres for soy and other crops in an area near Vladivostok and to build a soy-processing plant that would handle 240,000 tons a year. The deal makes the Chinese venture one of the largest private landholders in the Russian east; according to local news reports, it is likely to employ a number of Chinese workers, rely on Chinese technology and sell its products in China. In exchange, Russia says it will earn income tax (after a decade-long abatement) and that a Russian development bank also has a 20% stake in the project. (By law, Dzhanboriev said, such joint ventures are supposed to hire Russians to do at least 80% pof the work.)

For now, at least, these deals seem to be pushing the Chinese and Russian governments closer together. The groundwork was laid in May 2015, when Chinese President Xi Jinping agreed to form a $2 billion agricultural fund for trade partnerships in Russia’s east. Investments like these support loans and farming and the construction of badly needed roads and electrical lines in Russian villages like Dimitrovo, while also **opening the literal back door** — Russia’s remote southeastern border — **to China’s colossal** **market**, a market that Putin has coveted. Since then the money has continued to flow, with nearly $14 billion reportedly invested by 2017 across Russia’s resource sectors and another $10 billion pledged by Xi for cross-border infrastructure efforts. This year, the first major bridge linking the two countries across the Amur River was completed.

Given that China appears to siphon much of the profits and products from these ventures, it has not always been clear to Russians in the east that the deals are worth it. But analysts point out that the goals of the two countries — at least for the moment — are complementary. Russia gets long-term growth and the establishment of a durable industry in a region that it has failed to develop in the past and does not have the resources or the technology to do so now on its own. It also gets, according to an analysis by Angela Stent for the Brookings Institution, China’s “unequivocable support” for its programs and policies, something that has become invaluable following the sanctions imposed by the West after the Crimean invasion.

ULTIMATELY, IT IS the clumsy maneuvering of the United States that might prove most responsible for making Putin’s eastern development agenda a success. American tariffs, imposed as part of the Trump administration’s trade war with China, led to China’s own retaliatory tariffs on U.S. soybeans, creating the largest catalyst for Chinese buyers to look north for new markets. According to the U.S. Congressional Research Service, China’s total food and agricultural imports from Russia **increased 61%** in 2017 and 2018, yet another example of the U.S. failure to see the chessboard when it comes to the intricate geopolitical implications of climate change.

“The U.S. has made a few historic mistakes, and I don’t think they are able to repair them,” Karaganov told me. The first was what he characterized as the rejection of Russia’s bid some two decades earlier to strengthen ties with the West. “The second was helping to bring Russia and China together.” With China’s wealth paired to Russia’s resources, and the political trajectories and climate-related interests of the two countries more or less aligned, there is nothing short of a new world order at stake — an order, Brookings Institution analysts say, based not only on economic alignment but also on the two countries’ common commitment to supplanting Western hegemony.

#### China is rapidly approaching its carrying capacity – the Far East’s natural resources and water inhibit CCP collapse.

Stramblad ’19 [Kyle; student in the Multi-Domain Operational Strategist concentration at the United States Air Force’s Air Command and Staff College; 2-6-2019; "The Unlikely Prospect of Long-Term Sino-Russian Cooperation: Points of Divergence in the Emerging Security Environment"; OTH; https://othjournal.com/2019/02/06/the-unlikely-prospect-of-long-term-sino-russian-cooperation-points-of-divergence-in-the-emerging-security-environment/; Accessed 6-23-2021; AI]

Revisionist China Within the context of international relations, a “revisionist state” is a term that is used to describe states that are dissatisfied with their position in the international system. China is a **revisionist power**, as is evidenced by its territorial disputes with Vietnam, the Philippines, Brunei, Malaysia, Taiwan, Japan, South Korea, India, Bhutan, not to mention the 1950s annexation of Tibet. There is a growing popularity within Chinese online literature that emphasizes territorial expansion into the East and South China Seas, Southeast Asia, Central Asia, and Siberia which advocate for **colonialist practices** as a means of revitalizing China. The foreign policy implications that these trends may have on the stability of the Asia-Pacific region are troubling. The expansive nature of China’s territorial disputes is reflected in the following maps. China is seeking to alter the current balance of power in order to recreate a **Sino-centric order** which Beijing believes is Asia’s historic norm. Evidence for this claim includes Chinese President Xi Jinping’s 2017 State-of-China speech which identified South China Sea territorial expansion as the key achievement of his first term and outlined his foreign policy vision of a strong China recovering from its “Century of Humiliation” at the hands of colonial powers. Given current Sino-Russian cooperation, it is ironic that one of the colonial powers which annexed Chinese territory during the so-called Century of Humiliation was Russia. Historical Sino-Russian Territorial Strains in Outer Manchuria Outer Manchuria consists of territory in Northeast Asia that was formerly controlled by the Qing Dynasty and which now belongs to the Russian Federation. After losing the Opium Wars, the Qing Dynasty was forced to sign a series of treaties that gave away land to European powers. Russia acquired Outer Manchuria from China via the Treaty of Aigun in 1858 and the Treaty of Beijing in 1860. As a result, China lost territory and access to the Sea of Japan. Strategically significant centers such as the city of Vladivostok, the contemporary home port of the Russian Pacific Fleet and the largest Russian port on the Pacific Ocean are located within the territory referred to as Outer Manchuria, making this contested territory of vital importance to Russia. In China, these treaties are known today as the “Unequal Treaties,” which were drawn up in a time of China’s weakness when it was forced to make concessions to foreign powers. This term has come to be associated with the concept of China’s Century of Humiliation. Russia has a history of conflict with East Asians. From the Mongol invasions in the 13th century which destroyed numerous cities that include Moscow and Kiev, to 20th century defeat in the Russo-Japanese War; Russia’s relations with its Asian neighbors are complicated. Sino-Russian relations in the 20th century were marked by the diplomatic conflict known as the “Sino-Soviet Split” which culminated in the Sino-Soviet border conflict in 1969. Although military clashes ceased that year, the underlying territorial issues were not resolved until the 1991 Sino-Soviet Border Agreement. Article 6 of the 2001 Sino-Russian Treaty of Friendship states that the People’s Republic of China and the Russian Federation have no remaining territorial claims. Despite this treaty of friendship and cooperation, there are indications of potential divergence between China and Russia. When President Xi Jinping took office, he declared his “Chinese Dream” to be “**the great rejuvenation of the Chinese nation**.” To achieve this goal, Dr. Graham Allison of Harvard’s Kennedy School of Government believes China intends to restore the predominance it enjoyed in Asia before the West intruded by reestablishing control over the territories that the Communist Party considers to be “Greater China” and by recovering China’s historic sphere of influence along its borders and in its adjacent seas. Given Russia’s **historical territorial acquisition of Outer Manchuria** in the 19th century, it is understandable why Moscow remains concerned about China’s long-term strategic designs in the Russian Far East. Chinese and Russian Demographic Shifts Alongside Chinese historical territorial claims to the Russian Far East, China is also experiencing demographic pressures that could further fuel its need to expand into Russian territories. The population of China (1.38 billion) dwarfs that of Russia (144 million) at nearly a 10 to 1 ratio. With around 8 million people living in 2.6 million square miles of territory, the Russian Far East is among the most vacant places on Earth, at a population density of 3.1 people per square mile, and it is growing emptier, as a national demographic collapse is underway in Russia. Meanwhile, across the border, the Chinese are **rapidly outstripping the carrying capacity of their territory**, while the Russian Far East is endowed with abundant natural resources such as **oil, gas, coal, timber, and water,** but lacks the labor and capitol to extract and develop these resources. Russian Demographics: Peter Zeihan, geopolitical strategist and author of Accidental Superpower, explains that after the Cold War, the Russian Federation experienced a 60% drop in its national birth rate. Today, Russia is experiencing high death rates related to alcoholism. Life expectancy among working-age males, has dropped significantly. A RAND study on Russian demographics suggests that, “The Russian fertility rate has declined to among the world’s lowest, while its abortion rate is the highest. As a result, for the first time in Russian history, the annual number of deaths has **exceeded** the number of births.” Compounding these challenges is a rapidly aging population. These trends comprise a national crisis for Russia. Therefore, if the Russians are going to use military force to shape their future, the clock is ticking before they lose the military force structure to effect change. To stem the tide of depopulation and to secure Russian territorial claims in Europe, Russia has been annexing areas with high ethnic Russian populations, to include parts of Georgia, the Ukraine, and possibly the Baltic states in the future. Chinese Demographics: China has a much different demographic issue. The Chinese Communist Party (CCP) One Child Policy has resulted in a serious imbalance in the Chinese population pyramid that will create issues with the government’s ability to care for a rapidly aging population. Additionally, China is suffering from a significant gender imbalance where men outnumber women by 34 million as a result of cultural preferences in Asia. The consequences of this gender imbalance are far reaching, and could cause tensions in the emerging security environment as China seeks to alleviate the societal pressures caused by having millions of men who cannot marry. China may seek to **alleviate demographic pressures** **by encouraging Chinese male emigration** and potential military expansion into territories that support strategic Chinese interests overseas. Chinese Immigration into Siberia Despite the 2001 Sino-Russian Treaty of Friendship, the Kremlin remains concerned about Chinese immigration into Siberia. Estimates on the number of Chinese migrants presently in Russian Siberia range up to 500,000 in a region with a population of only 36 million Russians. Fears about Beijing’s long-term designs are resulting in strong anti-Chinese sentiments throughout the Russian Federation. A recent Russian film titled, A Deadly Friend, became an internet hit in 2015. The film claims China is preparing to invade the Russian Far East in a quest for territorial expansion. Chinese tanks could reach the city of Khabarovsk within 30 minutes overwhelming the second largest city in the Russian Far East after Vladivostok. Growing Chinese dominance in the region has some commentators calling it a geopolitical time bomb. Chinese immigration into Siberia presents a source of tension between Moscow and Beijing that is an important facet of the emerging security environment. To a certain extent, there exists a symbiotic relationship between the Siberian Russian population and Chinese immigrants. Since the collapse of the Soviet Union, Chinese immigrants have provided cheap labor and products to the Russian economy in Siberia. However, Siberians complain of the low-quality Chinese products and are fearful of Chinese immigration, competition, and Chinese organized crime. These dynamics are creating tensions between local Siberians and Chinese immigrants. Although China signed a diplomatic border agreement with Russia, Moscow remains concerned about the prospect of a Sinification of its Far East. Is Chinese “manifest destiny” into Siberia part of a broader effort to reverse the Century of Humiliation and secure access to natural resources? While many Chinese wish to reunite these annexed territories, China’s relations with Russia are more nuanced than its relations with the rest of Asia as it cannot afford to lose a strategic partner at a time when it is deeply engaged in border disputes on multiple fronts throughout Asia. Therefore, the reclamation of Outer Manchuria will likely remain a long-term goal. This strategy is aimed to avoid straining Sino-Russian relations at a time when China is focused on higher-priority territorial disputes throughout Asia, such as Taiwan and the South China Sea. Russians are concerned about Chinese designs in the Russian Far East. Russian logic is that Beijing could decide to invade on the basis of Chinese historical and demographic claims. This philosophy is exactly the same as the one Russia adopted when it annexed Crimea. Russia is therefore contradicting its own policy by opposing China’s claim over the Russian Far East. The local Russian population in the Russian Far East is nervous. The 2001 Sino-Russian Treaty of Friendship has done little to reduce the fear that exists between the people who live in Russia and China’s border provinces. Meanwhile, Chinese children are being taught in school that the Russian provinces on the other side of the border, are Chinese. Chinese school textbooks teach them that they were stolen from China during the Century of Humiliation and that these territories will return to China one day in the future, just as Hong Kong and Macau did. China’s One Belt, One Road Initiative Sino-Russian tensions are also on display in Central Asia where Former Soviet Union countries that have traditionally been in the Russian sphere of influence are gravitating towards China on the basis of its ambitious One Belt, One Road initiative that aims to revive and expand the ancient Silk Road trade routes linking China with Europe. Russia’s Eurasian Economic Union cannot compete with China’s Belt and Road initiative. Competition and cooperation between China and Russia are clearly visible in Central Asia. Chinese companies have invested heavily in Central Asia, building roads, bridges and tunnels across the region, making China the dominant economic power. China has already overtaken Russia in terms of trade with the five Central Asian states (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan). China has also redrawn **Central Asia’s energy economics**, becoming a key consumer of Kazakhstan’s oil production and Turkmenistan’s gas exports. Recently China signed billions in gas and uranium deals with Uzbekistan. Presently, China holds the upper hand in the relationship with Russia, and this power asymmetry will continue to grow at Russia’s expense. Russia and China have more to gain from cooperation than outright competition. As China becomes more assertive in global affairs, its long-term ambitions with respect to Russia are unclear. China will determine the course for the Sino-Russian relationship while Russia will remain a reactive partner. The Sino-Russian relationship is complex, with mutual mistrust on both sides. Despite ambitions for cooperation, the likelihood of substantive results is uncertain, particularly in the Russian Far East and Central Asia. Beijing accommodates Russian sensitivities regarding the Belt and Road initiative, which promotes China’s economic dominance in Central Asia. Beijing coordinates most security issues in Eurasia with Moscow, although growing Chinese concerns about instability in Central Asia have increased Beijing’s attention to the region, which may cause friction with Moscow. Water Scarcity in China Water scarcity presents a **looming crisis** for China. Another developing trend that will have significant impact on the emerging security environment is the growing water scarcity in Asia. As depicted by the population density chart in Figure 8, China and India are the world’s two most populous countries comprising 40% of the world’s population. The preponderance of fresh water resources supporting human life in China and India are supplied from snowfall and glacial melt coming off of the Hindu Kush and Himalaya mountain ranges. Competition for access to these water resources have already resulted in the Sino-Indian border conflict (see Figure 3). According to the United Nations, by 2025, 1.8 billion people will be living in countries or regions with absolute water scarcity, and two-thirds of the world’s population could be living under water stressed conditions. With the existing climate change scenario, almost half of the world’s population will be living in areas of water stress by 2030. The main causes of the decrease in fresh water supply is population growth, which is further stressing already limited freshwater resources. The emerging security environment in the next decade will likely see conflicts over water access as one of the central trends in the politico-military environment. China is home to 20% of the world’s population but only has 7% of the world’s fresh water. According the Chinese media, more than 80% of the underground water in the river basins of China is unfit for drinking or bathing because of contamination from industry and farming. Water is the biggest environmental issue facing China. As recently as 20 years ago, there were approximately 50,000 rivers in China. But now, according to China’s First National Census of Water, more than 28,000 of these rivers are missing. To put this number into context, China’s lost rivers are almost equivalent to the United States losing the entire Mississippi River. 80% of China’s water resources are in **southern China**, while the North China Plain is home to 42% of the Chinese population and only 8% of the country’s water resources, meaning that the **northern provinces suffer from acute water scarcity**. Chinese President Xi Jinping has made water development of the Beijing/Tianjin/Hebei region in the north a Chinese Communist Party (CCP) priority. The water resources of the people living in Northern China are less than the annual water consumption of Saudi Arabia. The impending water crisis in China will have ramifications far beyond China’s borders. Former Premier Wen Jiabao said that water shortages threatened the **very survival of the Chinese nation**. A water crisis in China could further fuel Chinese territorial expansion as the CCP seeks to secure water resources that will **pacify its population and ensure regime stability**. Bordering countries that have access to water resources include Russia to the north, and India, Bhutan, and Nepal to the South. China might soon find itself forced into wars of survival with neighboring countries based on the water scarcity trends that are presently looming on the horizon. Given the **current overpopulation** in southern Asia and ongoing competition over scarce water resources, China is more likely to **turn its attention northward** towards Mongolia and Russia. Considering that Mongolia has limited water resources, Russia will present the most likely target if the water resources within the present Chinese borders can no longer support its population demands.

#### CCP collapse causes a civil nuclear war

Yee & Storey ’13 (Yee and Storey 13 Herbert - Professor of Politics and International Relations at the Hong Kong Baptist University. Ian - Lecturer in Defence Studies at Deakin University, Geelong, Australia. The China Threat: Perceptions, Myths, and Reality 2013 p. 15)

The fourth factor contributing to the perception of a China threat is the fear of political and economic collapse in the PRC, resulting in **territorial fragmentation**, **civil war** and waves of **refugees** pouring into neighbouring countries. Naturally, any or all of these scenarios would have a **profoundly negative impact on regional stability**. Today the Chinese leadership faces a raft of internal problems, including the increasing political demands of its citizens, a growing population, a shortage of natural resources and a deterioration in the natural environment caused by rapid industrialisation and pollution. These problems are putting a strain on the central government’s ability to govern effectively. Political disintegration or a Chinese civil war might result in **millions of Chinese refugees** seeking asylum in neighbouring countries. Such an unprecedented exodus of refugees from a collapsed PRC would no doubt put a **severe strain** on the limited resources of China’s neighbours. A fragmented China could also result in **a**nother **nightmare scenario**—**nuclear weapons falling into the hands of irresponsible local** provincial **leaders** or warlords.12 From this perspective, a disintegrating China would also **pose a threat to** its neighbours and **the world**.

## AT: Microbes

### 1NC - AT: Contamination

#### NASA makes it inevitable --- new Martian rovers and planned trips ensure

### 1NC - AT: Aliens

#### Aliens don’t exist

Redd, 18—Space.com contributor, citing Anders Sandberg, philosopher at the University of Oxford (Nolan Taylor, “Alien Life May Be Rare in Our Galaxy Today,” <https://www.space.com/41080-alien-life-may-be-rare-today.html>, dml)

The hunt for E.T. may have gotten more difficult. New research suggests that alien life may not be as widespread as we had hoped.

When it comes to hunting for alien civilizations, a key question is how plentiful intelligent extraterrestrials are in the universe — but the answer to that question depends on a lot of knowledge scientists don't have yet.

In 1960, Frank Drake, an astronomer and hunter of extraterrestrial intelligence, devised an equation to calculate the probability of hearing from an intelligent, communicating alien civilization. The Drake equation relies on the values of several constants to determine how widespread such civilizations might be, how likely they are to evolve and how likely they are to have broadcast when we were able to detect. While some of the numbers, such as how many stars have planets around them, are fairly well-known, others, such as the fraction of those worlds with life, remain uncertain. [The Father of SETI: Q&A with Astronomer Frank Drake]

Over the years, scientists have attempted to "solve" the Drake equation. But the uncertain quantities required estimation. Optimists tended to put in numbers that would reflect their thoughts — life on other planets is plentiful! Civilizations last for millions of years! Pessimists skew their results the other way, assuming life is rare and civilizations quickly burn out.

Searching for a more accurate answer to the question 'Are we alone?' the new study's researchers have included the uncertainties of the numbers — how confident scientists are in them. Rather than giving each component a hard-and-fast amount, they attempted to gauge the strength of the research into these questions. "We can show that, given current scientific uncertainty, we get a distribution that could make both the optimists and pessimists happy at the same time: a fair chance of several alien civilizations, but also a fair chance of no aliens within the visible universe," Anders Sandberg told Space.com by email. Sandberg, a philosopher at the University of Oxford, is the lead author on the new research. "The uncertain sky should not be surprising given our level of uncertainty," Sandberg said. The study, which is available on the preprint site Arxiv, has been submitted to the journal Royal Society of London A. Alone in the universe? In 1950, Italian-American physicist Enrico Fermi looked to the skies and asked, "Where are they?" If the universe is filled with alien civilizations, why have none of them contacted Earth? The question, referred to as the Fermi paradox, provided the fuel for the Drake equation. The Drake equation has never sought a definite number. Instead, it has been used to make a rough estimate of the number of detectable civilizations in the Milky Way (N). According to the equation, N = RfpncflfifcL That number is based on the rate of star formation per year (R), the fraction of stars with planets (fp), the number of habitable planets per system of planets (nc), the fraction of those planets with life (fl), the fraction of life that is intelligent (fi), the fraction of intelligent civilizations that are detectable (fc), and the average lifetime of such civilizations in years (L). Observations of distant stars, with instruments such as NASA's Kepler telescope, have revealed that planets are plentiful around stars, and habitable worlds are spread across the galaxy. All the other variables remain up in the air. [The Most Intriguing Alien Planet Discoveries of 2017]

Sandberg and his colleagues decided to change the inputs for the unknown parts of the equation. Rather than estimating a single number, they included the range. For instance, saying that there is a 1/100 chance for life to evolve doesn't make it clear whether the odds are exactly 1 out of 100, between 1/1000 and 1/10, or between one and one in a googol (10^100), Sandberg said.

"One of the features that differs in [the new research] from previous Fermi paradox analyses is that the current authors tackle the problem of order-of-magnitude uncertainties in each component of Drake's equation in a less-biased, more robust way," Ian Jordan, an astronomer and engineer at the Space Telescope Science Institute in Baltimore, told Space.com in an email. Jordan is not part of the new research.

By factoring in the scientific uncertainty for components like how often life evolves, the researchers determined that the odds that we are the only intelligent life in the Milky Way range between 53 and 99.6 percent. The odds get a bit better when they include the observable universe — the chance that humanity is alone ranges between 39 and 85 percent. The research was published on the journal preprint server arXiv.

The new numbers mean there's a good chance humanity is the only detectable intelligent civilization around. Sandberg doesn't necessarily think that's a bad thing.

### 1NC - AT: Disease

#### Commercial space manufacturing solves --- microgravity environments accelerate disease research

Giulianotti et. al 21 [Marc A. Giulianotti1\*, Arun Sharma2,3, Rachel A. Clemens4 , Orquidea Garcia5 , D. Lancing Taylor6, Nicole L. Wagner7 , Kelly A. Shepard8 , Anjali Gupta4, Siobhan Malany9 , Alan J. Grodzinsky10, Mary Kearns‐Jonker11, Devin B. Mair12, Deok‐Ho Kim12,13, Michael S. Roberts1, Jeanne F. Loring14, Jianying Hu15, Lara E. Warren1 , Sven Eenmaa1, Joe Bozada16, Eric Paljug16, Mark Roth17, Donald P. Taylor18, Gary Rodrigue1, Patrick Cantini19, Amelia W. Smith1, William R. Wagner19,20\* 1 Center for the Advancement of Science in Space, Melbourne, FL, USA 2 Board of Governors Regenerative Medicine Institute, Cedars‐Sinai Medical Center, Los Angeles, CA, USA 3 Smidt Heart Institute, Cedars‐Sinai Medical Center, Los Angeles, CA, USA 4 Axiom Space, Inc., Houston, TX, USA 5 Johnson & Johnson 3D Printing Innovation & Customer Solutions, Johnson & Johnson Services, Inc., Irvine, CA , USA. 6 University of Pittsburgh Drug Discovery Institute and Department of Computational and Systems Biology, University of Pittsburgh, Pittsburgh, PA, USA 7 LambdaVision Inc., Farmington, CT, USA 8 California Institute for Regenerative Medicine, Oakland, California, USA 9 Department of Pharmacodynamics, College of Pharmacy, University of Florida, Gainesville, FL USA 10 Departments of Biological Engineering, Mechanical Engineering and Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA, USA 11 Department of Pathology and Human Anatomy, Loma Linda University School of Medicine, Loma Linda, CA, USA 12 Department of Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, MD, USA 13 Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, MD, USA 14 Scripps Research Institute, San Diego, CA, USA 15 Center for Computational Health IBM Research, Yorktown Heights, NY, USA 16 Joseph M. Katz Graduate School of Business, University of Pittsburgh, Pittsburgh, PA, USA 17 Pittsburgh, PA, USA 18 The Ohio State University, Columbus, OH, USA 19 McGowan Institute for Regenerative Medicine, Pittsburgh, PA, USA 20 Departments of Surgery, Bioengineering, Chemical Engineering, University of Pittsburgh, Pittsburgh, PA, USA. “Opportunities for Biomanufacturing in Low Earth Orbit: Current Status and Future Directions.” August 2, 2021. https://www.preprints.org/manuscript/202108.0044/v1/download]

The use of LEO by governments and commercial enterprises is a complex ecosystem for providing opportunities and financing. In the last two decades, governments around the world, led by the U.S. and China, have heavily supported private space companies (2019 Report). These investments have focused on launch technologies, as high launch costs are perceived to be the greatest limiting factor to expanded space exploration and utilization (Werzt et al., 1996) and have led to recent reductions in the cost of transporting cargo to LEO by a factor of more than 20. Between 1970 and 2020, the average cost to launch a kilogram of payload into LEO on the space shuttle remained constant at about $54,500. Now, the cost per kilogram is $2,720 on a SpaceX Falcon 9 rocket (Figure 1) (Jones, H. W. et al., 2020). Preprints (www.preprints.org) | NOT PEER-REVIEWED | Posted: 2 August 2021 doi:10.20944/preprints202108.0044.v1 4 Figure 1: The cost of launching payloads to LEO has dropped considerably over the last 50 years. Note: Data is not to scale. Additionally, several private companies are now pursuing commercial space stations. Axiom Space, headquartered in Houston, is currently developing what promises to be the first‐ever privately operated space station, with the initial module scheduled to launch to the ISS in 2024. Axiom plans to dock multiple modules to the ISS that will eventually detach to become a standalone station. As the cost of transport to LEO has decreased—and is expected to decrease further—and plans for new platforms in LEO continue to advance (Dinkin S., 2019), opportunities in areas such as satellite deployment, biomedical research, in‐space manufacturing, and space tourism increase. Preprints (www.preprints.org) | NOT PEER-REVIEWED | Posted: 2 August 2021 doi:10.20944/preprints202108.0044.v1 5 As the past half century has witnessed the opening of space for exploration and commercial opportunities, in this same period, we have experienced exponential growth in our understanding of biology and physiology. This knowledge has been translated and commercialized for the benefit of human health and continues to accelerate as new technologies create additional tools to explore and cure. One aspect of this biomedical revolution is in the field of regenerative medicine, built upon advances in stem cell biology, biomaterials, and bioengineering. Remarkable advancements have been made in the design of MPS, also called tissue chips or organs‐on‐chips, and organoids that can mimic complex organ systems outside of the body for drug development or potential implantation to restore function. Stem cell isolation, characterization, and manipulation is advancing, with target applications broadly spread across tissues impacted by disease, trauma, and congenital conditions. Biomaterials and bioengineering advances have created new medical devices, targeted drug delivery platforms, biosensors and new imaging modalities, and the bioprinting of tissue constructs. To take advantage of these significant advances—more frequent and more affordable access to LEO and exponential progress in biomedical technology—the question is: How do these intersect, and what new opportunities arise as both advance? How can the unique LEO environment be leveraged to further advance biomanufacturing? Compelling answers to these questions will introduce economic drivers for investment in space‐based R&D that extend beyond the initial focus on pure discovery and into the expansion of commercial development in LEO. Over the past decade, the ISS National Lab has supported important space‐based research in the areas of tissue engineering and regenerative medicine that lays the groundwork for more complex studies and future investment. This critical research addressed fundamental questions such as: How does the LEO environment affect the organ function mimicked by tissue chips, and how do these changes relate to human disease? How does microgravity affect stem cell proliferation and differentiation? And how might 3D bioprinting benefit from the absence of gravity? Continued access to LEO through the ISS National Lab provides a unique opportunity for R&D that enables the jump from this initial work to the development of a sustainable market for biomanufacturing in space. The ISS is a powerful platform with a limited lifetime and thus limited time left for utilization; therefore, now is the time to leverage this invaluable orbiting laboratory to conduct R&D that demonstrates the value of biomanufacturing in space. This work will set the stage for increased private investment and the transition to larger and more numerous platforms in LEO that can support further discovery and development in the coming decades

#### Health research to keep astronauts safe incentivizes

#### Says it’s “less than efficient,” not that it’s impossible and Ord is about development of earthbound diseases --- they don’t access their impact, but col is k2 develop defenses against Earthbound disease

## AT: OST

### 1NC - AT: OST

#### Concede militarization scenario - we love laundry list impacts --- yes econ and sats --- Haven reads blue

**AC Gilliard 19**, Alexandra. (Alexandra Gilliard is a Senior Editor and interviewer of international relations experts for the International Affairs Forum. She holds an M.S. in Global Studies and International Relations from Northeastern University, and a B.A. in International Relations from Boston University, with expertise in conflict resolution, arms control, human rights issues, and the MENA region.) “What Are the Consequences of Militarizing Outer Space?” Global Security Review, 10 June 2019, https://globalsecurityreview.com/consequences-militarization-space/. //JQ

Consequences of Armament and Aggression in Space

The consequences of weapons testing and aggression in space could span generations, and current technological advances only increase the urgency for policymakers to pursue a limitations treaty. As it stands, there are three major ramifications of a potential arms race in space:

The destruction of satellites

As both financial and technological barriers to the space services industry have decreased, the number of governmental and private investors with assets in space has inevitably increased. There is now an abundance of satellites in space owned by multiple states and corporations. These satellites are used to not only coordinate military actions, but to perform more mundane tasks, like obtaining weather reports, or managing on-ground communications, and navigation.

Should states begin weapons testing in space, debris could cloud the orbit and make positioning new satellites impossible, disrupting our current way of life. More pressing, however, is that if a country’s satellites are successfully destroyed by an enemy state, military capabilities can be severely hindered or destroyed, leaving the country vulnerable to attack and unable to coordinate its military forces on the ground.

Diminished future use of near space

Whether caused by weapons testing or actual aggression, the subsequent proliferation of debris around the planet would damage our future ability to access space. Not only would debris act as shrapnel to preexisting assets in space, but it would also become much more difficult to launch satellites or rockets, hindering scientific research, space exploration, and commercial operations.

From the past fifty-odd years of activity in space alone, the debris left behind in Earth’s orbital field has already become hazardous to spacecraft — a main reason why the U.S. and the Soviet Union did not continue with ASAT testing during the Cold War. If greater pollution were to occur, space itself could be become unusable, resulting in the collapse of the global economic system, air travel, and various communications.

Power imbalances and proliferation on the ground

Only so many states currently have access to space—which means any militarization be by the few, while other states would be left to fend for themselves. This would establish a clear power imbalance that could breed distrust among nations, resulting in a more insecure world and a veritable power keg primed for war. Additionally, deterrence measures taken by states with access to space would escalate, attempting to build up weapons caches not dissimilar to the nuclear weapons stockpiling activities of the Cold War.

In any arms race, it is inevitable that more advanced weaponry is created. Yet, this does not only pose a risk to assets in space. Should a terrestrial war break out, this weaponry may eventually be deployed on the ground, and space-faring states would be able to capitalize on the power imbalance by using these new developments against states that have not yet broken into the space industry or developed equally-advanced weaponry.

#### Globalization causes war

Irandoust 17 Manuchehr Irandoust 17, Department of Economics and Finance, School of Business Studies, Kristianstad University, “Militarism and globalization: Is there an empirical link?” Quality and quantity, June 16, 2017, Springer Open Access

[GLOB = globalization index, MIS = militarized spending]

The results of the bootstrap panel Granger causality test are shown in Table 2. The findings show that GLOB and MIS are causally related in most of the countries under review. There is a bi-directional causality in UK, US, Saudi Arabia, and Russia. The causality is unidirectional running from GLOB to MIS in Australia, Brazil, India, and China, and running from MIS to GLOB in Turkey. The degree of significance level varies from country to country. There is no any causal relationship between military spending and globalization in France, Italy, South Korea, Germany, and Japan. Overall, this evidence shows a relatively robust association between changes in globalization and changes in military expenditure. In other words, countries experiencing greater globalization have relatively large increases in militarization over the past 20 years.

However, it has been shown that globalization may not lead to more peaceful relations or demilitarization. As we discussed in Sect. 2, bilateral trade increases the opportunity cost of bilateral war and may hinder bilateral war. Globalization (equivalent to multilateral economic openness) reduces this opportunity cost with any given country and devitalize the incentive to make concessions during negotiations, and, therefore, increases the probability of war between any given pair of country. Thus, an increase in trade or openness between two countries may restore peace between those but may increase the probability of conflict with third countries.

6 Conclusion

While previous studies mostly focused on the causal nexus between military expenditure and economic growth, those studies have not considered the role of globalization. This study uses data from the top 15 military expenditure spenders over the period 1990–2012 to examine the relationship between militarism and globalization. The bootstrap panel Granger causality that accounts for both cross-sectional dependence and heterogeneity across countries is utilized to detect the direction of causality. The results show that military expenditures and globalization are causally related in most of the countries under review. Despite the increasing role of globalization, the results show that military expenditures are growing and pointing to a strengthening in nationalist sentiments and militarism. This paper suggests that changes in domestic political and economic conditions might hinder the process of globalization. The results are consistent with those of Acemoglu and Yared (2010) who conclude that high military spending endangers globalization. This study also supports the results of Martin et al. (2008) who find that an increase in multilateral trade raises the chance of conflict between states. The policy implication of the findings is that greater military spending by a country increases the likelihood of military conflict in the future, the anticipation of which discourages globalization.

#### Collapse doesn’t cause war

Clary 15 – Christopher Clary, former International Affairs Fellow in India at the Council on Foreign Relations, Postdoctoral Fellow at the Watson Institute at Brown University, Adjunct Staff Member @ RAND Corporation, Security Studies Program @ MIT, country director for South Asian affairs in the Office of the Secretary of Defense, former Research Fellow @ the Harvard Kennedy School's Belfer Center for Science and International Affairs, former research associate in the Department of National Security Affairs at the Naval Postgraduate School, BA from Wichita State University and an MA from the U.S. Naval Postgraduate School, 2015 (“Economic Stress and International Cooperation: Evidence from International Rivalries,” Massachusetts Institute of Technology Political Science Department Research Paper No. 2015-­‐8, “Economic Stress and International Cooperation: Evidence from International Rivalries,” <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2597712>)

Do economic downturns generate pressure for diversionary conflict? Or might downturns encourage austerity and economizing behavior in foreign policy? This paper provides new evidence that economic stress is associated with conciliatory policies between strategic rivals. For states that view each other as military threats, the biggest step possible toward bilateral cooperation is to terminate the rivalry by taking political steps to manage the competition. Drawing on data from 109 distinct rival dyads since 1950, 67 of which terminated, the evidence suggests rivalries were approximately twice as likely to terminate during economic downturns than they were during periods of economic normalcy. This is true controlling for all of the main alternative explanations for peaceful relations between foes (democratic status, nuclear weapons possession, capability imbalance, common enemies, and international systemic changes), as well as many other possible confounding variables. This research questions existing theories claiming that economic downturns are associated with diversionary war, and instead argues that in certain circumstances peace may result from economic troubles. Defining and Measuring Rivalry and Rivalry Termination I define a rivalry as the perception by national elites of two states that the other state possesses conflicting interests and presents a military threat of sufficient severity that future military conflict is likely. Rivalry termination is the transition from a state of rivalry to one where conflicts of interest are not viewed as being so severe as to provoke interstate conflict and/or where a mutual recognition of the imbalance in military capabilities makes conflict-causing bargaining failures unlikely. In other words, rivalries terminate when the elites assess that the risks of military conflict between rivals has been reduced dramatically. This definition draws on a growing quantitative literature most closely associated with the research programs of William Thompson, J. Joseph Hewitt, and James P. Klein, Gary Goertz, and Paul F. Diehl.1 My definition conforms to that of William Thompson. In work with Karen Rasler, they define rivalries as situations in which “[b]oth actors view each other as a significant politicalmilitary threat and, therefore, an enemy.”2 In other work, Thompson writing with Michael Colaresi, explains further: The presumption is that decisionmakers explicitly identify who they think are their foreign enemies. They orient their military preparations and foreign policies toward meeting their threats. They assure their constituents that they will not let their adversaries take advantage. Usually, these activities are done in public. Hence, we should be able to follow the explicit cues in decisionmaker utterances and writings, as well as in the descriptive political histories written about the foreign policies of specific countries.3 Drawing from available records and histories, Thompson and David Dreyer have generated a universe of strategic rivalries from 1494 to 2010 that serves as the basis for this project’s empirical analysis.4 This project measures rivalry termination as occurring on the last year that Thompson and Dreyer record the existence of a rivalry.5 Why Might Economic Crisis Cause Rivalry Termination? Economic crises lead to conciliatory behavior through five primary channels. (1) Economic crises lead to austerity pressures, which in turn incent leaders to search for ways to cut defense expenditures. (2) Economic crises also encourage strategic reassessment, so that leaders can argue to their peers and their publics that defense spending can be arrested without endangering the state. This can lead to threat deflation, where elites attempt to downplay the seriousness of the threat posed by a former rival. (3) If a state faces multiple threats, economic crises provoke elites to consider threat prioritization, a process that is postponed during periods of economic normalcy. (4) Economic crises increase the political and economic benefit from international economic cooperation. Leaders seek foreign aid, enhanced trade, and increased investment from abroad during periods of economic trouble. This search is made easier if tensions are reduced with historic rivals. (5) Finally, during crises, elites are more prone to select leaders who are perceived as capable of resolving economic difficulties, permitting the emergence of leaders who hold heterodox foreign policy views. Collectively, these mechanisms make it much more likely that a leader will prefer conciliatory policies compared to during periods of economic normalcy. This section reviews this causal logic in greater detail, while also providing historical examples that these mechanisms recur in practice.

### 1NC - AT: Space War

#### Space militarization is good---increases deterrence, makes conflict less destructive and reduces the risk of miscalculation.

Yoo 18 --- John Yoo, visiting fellow at the Hoover Institution, professor of law at the University of California at Berkeley School of Law, and a visiting scholar at the American Enterprise Institute ("Winning the Space Race," 10-15-2018, Hoover Institution, https://www.hoover.org/research/winning-space-race, accessed 6-25-2019) bm

Critics question whether the benefits of space weapons are worth the possibility of strategic instability. They argue that only arms control agreements and international institutions can head off a disastrous military race in space. But space will become an arena for pre-emptive deterrence. Every environment—land, air, water, and now space—has become an arena for combat. The U.S. could deter destabilizing space threats from rivals by advancing its defensive capabilities. Some realist strategists argue not just in favor of protecting U.S. space assets, but seeking U.S. space supremacy. Because great power competition has already spread to space, the United States should capitalize on its early lead to control the ultimate high ground, that of outer space. Criticisms of space weapons overlook the place of force in international politics. Advances in space technology can have greater humanitarian outcomes that outweigh concerns with space weapons themselves. Rather than increase the likelihood of war, space-based systems reduce the probability of destructive conflicts and limit both combatant and civilian casualties. Reconnaissance satellites reduce the chances that war will break out due to misunderstanding of a rival’s deployments or misperception of another nation’s intentions. Space-based communications support the location of targets for smart weapons on the battlefield, which lower harm to combatants and civilians. Space-based weapons may bring unparalleled speed and precision to the strategic use of force that could reduce the need for more harmful, less discriminate conventional weapons that spread greater destruction across a broader area. New weapons might bring war to a timely conclusion or even help nations avoid armed conflict in the first place. We do not argue that one nation’s overwhelming superiority in arms will prevent war from breaking out, though deterrence can have this effect. At the very least, space weapons, like other advanced military technologies, could help nations settle their disputes without resort to wider armed conflict, and hence bolster, rather than undermine, international security.

### 1NC --- Heg

#### Space militarization is inevitable, but the US getting there first prevents war and locks in primacy which saves allies

Solano 17 [Major Joseph Solano, USAF, M.S., Troy University; Master’s Thesis 1. REPORT DATE 9-06-2017 2. REPORT TYPE: Master’s Thesis “Weaponizing the Final Frontier: The United States and the New Space Race” http://www.dtic.mil/dtic/tr/fulltext/u2/1039544.pdf]

The transition into the twenty-first-century has brought about new space threats and challenges that the Truman era could not have predicted. The result of developing ASAT technology in the 1950s set in motion an ASAT war that escalated with the 2007 Chinese ASAT test. Following the ASAT test from China, Congressman Terry Everett (R, AL), the ranking Republican member of the Strategic Forces Subcommittee of the 19 House Armed Service Committee, referred to the test as a “clear wake up call for the Administration, Congress, and the American people,” and “apparently this single test is part of a broader effort to mature their direct-ascent ASAT capability and to develop a spectrum of counterspace capabilities.”34 The question at this point is not whether space will be weaponized, but when. Congressman Everett’s testimony is a consistent representation of many influential civilian leaders that share similar opinions. The need for a clear, bold, and transparent space policy allowing for unified action is critical in posturing future space forces. This is the consistent gap identified from previous advocates for weaponization of space. While the first step is to identify a gap, the second and most critical portion is the implementation of a clear and coherent strategy.

According to JP 3-14, Space Operations, space capabilities, and associated policies have continued to evolve since the beginning of the Space Race starting in 1955. The continued use and expansion of space had led to a congested, contested, and competitive environment.35 According to space doctrine, five major considerations exist when considering the use of space as an operational domain. The first consideration is vulnerability. The concept of vulnerability impacts all three main sectors of space: military, civil, and commercial. Joint doctrine recognizes the United States dependency on space assets and identifies the vulnerability associated with this reliance. Within the concept of vulnerability, joint doctrine also identifies the concept of purposeful 34 Terry Everett, “Arguing for a Comprehensive Space Protection Strategy,” Strategic Studies Quarterly (Fall 2007): 21-22. 35 Department of Defense, JP 3-14, Space Operations, I-1. 20 interference, which is the “deliberate actions taken to deny or disrupt a space system, service, or capability.”36 Purposeful interference is an important term to understand because it warns all enemies that an act on a space system is an act of war. It is critical that the commander’s understand the enemy’s capabilities in order to characterize, identify, and recognize interference. The second consideration is freedom of action.37 The U.S. government believes that, as a world superpower, it has the ability to use space capabilities at any given time and place without interference by enemy forces. At the core of this consideration is developing the ability to protect critical space assets. The third consideration is protection.38 This consideration intends to not only protect the space system, but also the supporting infrastructure to ensure capability is available when needed. Global reach and responsiveness is the fourth consideration and focuses on uniqueness of space and the limitations with respect to reconstitution of systems. The ability to replace satellite systems is not a rapid process and takes years. This limitation emphasizes the protection aspect of these national space capabilities. Last, space deterrence is the ability to utilize joint force operations to ensure protection against U.S. space capabilities.39 All five of these considerations focus on the protection of maintaining U.S. space superiority and represent a small shift towards a space weaponization strategy. JP 3-14 is the single joint publication for space operations. While 36 Department of Defense, JP 3-14, Space Operations, I-2. 37 Ibid. 38 Ibid. 39 Ibid. 21 the publication escalates the aggressive language and hints towards a weaponization mentality, the official guidance and direction to unify the space community is absent. The core of this document focuses on space as a force enabler, not as a weaponization capability equal to air, space, and cyber. There is a major gap in joint doctrine regarding the transition of space pacification and weaponization. Doctrine must reflect the current threat environment and lay the groundwork towards a strategy that will deliberately focus efforts towards a singular vision. Current doctrine fails to provide the necessary vision and guidance to combat future challenges or threats in the space domain.

Along with the shift in aggression in joint doctrine, President Obama’s National Space Policy of the United States of America echoes a similar message as Joint Publication 3-14. The National Space Policy Principle states: The United States will employ a variety of measures to help assure the use of space for all responsible parties, and, consistent with the inherent right of self defense, deter others from interference and attack, defend our space systems and contribute to the defense of allied space systems, and, if deterrence fails, defeat efforts to attack them.40

This is the most aggressive space policy to date, and indicates a transition from militarization to the cusp of weaponization. Satellite systems are now equivalent to an airplane, ship, or tank, and the United States must prepare to defend these systems from attack.41 The next logical step is the development and execution of this philosophy to secure national interests. Just as with any mission set, guidance must be clear to enable 40 Barak Obama, National Space Policy of the United States of America (Washington, DC: White House, 2010), accessed 15 October 2016, 3, https://www.whitehouse.gov/sites/default/files/national\_space\_policy\_6-28-10.pdf. 41 George W. Bush, U.S. National Space Policy (Washington, DC: White House, August 2006), accessed 20 October 2016, https://fas.org/irp/offdocs/nspd/space.pdf. 22 unified action. The inconsistency and disconnect with current policy and the threat environment only causes delays in designing, creating, and launching weaponization capabilities from space. The United States will not always have the luxury of neutrality regarding the topic of space weaponization. Former President Obama and President Trump are at a critical juncture requiring key decisions on the future of national space capabilities. Currently, the inconsistent messaging negatively impacts strategy by limiting national capability while allowing foreign nations to rapidly expand their space portfolio. The United States has the opportunity to take advantage and leverage its superiority in space as a critical capability.

While doctrine and policy are critical indications towards a policy of weaponization, inevitability is a mental construct and methodology that deserves consideration. Lieutenant Colonel (Lt Col) Thomas Bell describes the inevitability of space weaponization by stating “just as the role of US military operations in space has gradually shifted from scientific interest, through intelligence collection, to robust combat support, so it will continue to shift inevitably towards the weaponization of space.”42 Logically, this determination is a reasonable conclusion. Why would space be any different from all four other military domains? Lt Col Bell argues that “it is inevitable that mankind will weaponize space, and equally likely that this weaponization will occur with maturing of specific technologies over the next thirty years.”43 The ability for the United States to develop and integrate space into the military construct will provide the asymmetry required of future conflicts. Lt Col Bell believes that space weapons, which include the ability to conduct warfare in, from, or through space, will be required in the next major conflict of the United States due to the mandate to ensure freedom of access. 44 Future adversaries intend to create an asymmetrical advantage against the United State and the elimination of space superiority will create the desired effect. The three major requirements for space identified by Lt Col Bell are enhanced space surveillance; develop the capability to deny a potential enemy the use of space; and develop capability to protect United States space assets from the enemy.45 Bell’s analysis presents similar doctrinal gaps that exists in joint doctrine and national space policy, but adds a unique perspective that technology itself could be a major driver in the weaponization of space, not necessarily people. While Lt Col Bell illustrates the criticality of space operations to warfighting, his focus lacks the robustness on the methods to develop and shape a new space policy emphasizing weaponization and the impacts on the national instruments of power.

In Benjamin Lambeth’s book, Mastering the Ultimate High Ground, he presents an argument that the development of space weapons will complete and legitimize space as a true military power equal to land, air, sea, and cyber.46 Senior civilian leaders must recognize the importance of their military space subject matter experts in order to 44 Bell, 3. 45 Ibid., 11. 46 Benjamin S. Lambeth, Mastering the Ultimate High Ground: Next Steps in the Military Uses of Space (Santa Monica, CA: RAND, Project Air Force, 2003), 113. 24 develop a comprehensive strategy to protect the United States against all threats. Lambeth references Retired General Howell Estes, former United States Space Command Commander, to support one of his main points: If we examine the evolutionary development of the aircraft, we see uncanny parallels to the current evolution of spacecraft. . . . The potential of aircraft was not recognized immediately. Their initial use was confined to observation . . . until one day the full advantage of applying force from the air was realized and the rest is history. So too with the business of space . . . [military] space operations, like the land, sea and air operations that evolved before them will expand [into] the budding new mission already included into the charter of US Space Command . . . as they become more and more critical to our national security.47 While Lambeth intends to spark discussion and present information arguing both for and against supporting weapons in space, his research lacks the recommendations and framework to shape a new space policy. Lambeth states that the “United States possesses the essential wherewithal in principle to begin weaponizing space today. Reduced to basics, it is only a question of leadership choice, societal acceptance, and which particular force-employment alternatives to pursue first.”48 This statement targets the diplomatic instrument of power. This study will expand Lambeth’s focus towards reviewing all four instruments of power and operational variables to collect data and formulate a strategy intending to provide clarity and unity of effort towards space operations.

The Rumsfeld Commission is the core document of the twenty-first-century that highlighted the need for the United States to readdress their posturing for space. The 47 Howell M. Estes, III, “Doctrinal Lineage of Space” (lecture, AFA National Symposia, Los Angeles, CA, 18 October 1996), accessed 27 October 2016, http://secure.afa.org/AEF/pub/la6.asp. 48 Lambeth, 118. 25 Commission’s intent was to assess the current and future state of the national space capabilities while analyzing vulnerabilities associated to the threat environment. The major conclusion from the assessment was that the “U.S. is more dependent on space than any other nation” and cautions that adversarial nations will view that as a vulnerability.49 Tactics and techniques identified by the Rumsfeld Commission include denial and deception, jamming, microsatellite, and nuclear detonation.50 While the commission identified high-level strategies to reduce vulnerabilities, and called for the President of the United States to have the option to deploy weapons in space, official policy has yet to transition. The commission stated, “The United States must develop, deploy, and maintain the means to deter attack on and to defend vulnerable space capabilities,” but is missing the recommended doctrine and policy updates to incorporate into the national space strategy.51 The commission illustrates the need for “explicit national security guidance and defense policy to direct development of doctrine, concepts of operations, and capabilities for space, including weapons systems that operate in space and that can defend assets in orbit and augment air, land, and sea forces.”52 In addition to space policy, leadership must recognize that that robust training will be required to 49 Report of the Commission to Assess United States National Security Space Management and Organization pursuant to Public Law 106-65, the National Defense Authorization Act for Fiscal Year 2000, Section 1622, 11 January 2001, 18, accessed 16 September 2016, http://www.dod.gov/pubs/space20010111.html. 50 Ibid., 19-21. 51 Ibid., vi. 52 Ibid. 26 bolster any capability developments. Space professionals will require training on space systems to develop tactics, techniques, and procedures allowing for space superiority. In addition, the Rumsfeld Commission noted that in July 2000, “The Xinhua news agency reported that China’s military is developing methods and strategies for defeating the United States military in a high tech and space-based future war.”53 The Rumsfeld Commission used historical analysis to review warning signs of previous identified space scenarios that exposed vulnerabilities that could have resulted in catastrophe. The commission emphasized that the United States is ignoring warning signs of Chinese space aggression, allowing for unacceptable risk assumption. The commission report states, “Surprise is most often not a lack of warning, but the result of a tendency to dismiss as what we consider improbable.”54 If the Chinese weaponize space first, the United States would lose its space superiority along with a general decline in overall military capability. The results would be disastrous. Although the development of space weapons is not a simple task due to technology development and extreme cost, the commission recommends starting now. The value of the Rumsfeld Commission to this study is the identification of a growing threat against the space domain and a recommendation for a space strategy transition from militarization towards weaponization. This study intends to take the recommendations to the next level by actually developing strategy recommendations regarding developing space professionals and space policy, but falls short of implementable recommendations. Without formal guidance on the weaponization of space, the establishment of unified actions is unachievable. The United States cannot afford to continue the policy of wait and see.

#### Decline causes unstable nuclear alliances – escalates to multistate nuclear war

Hayes 18 [Peter Hayes, Nautilus Institute, Berkeley, California, USA; Center for International Security Studies, Sydney University. Trump and the Interregnum of American Nuclear Hegemony. November 8, 2018. <https://www.tandfonline.com/doi/full/10.1080/25751654.2018.1532525>]

During a post-hegemonic era, long-standing nuclear alliances are likely to be replaced by ad hoc nuclear coalitions, aligning and realigning around different congeries of threat and even actual nuclear wars, with much higher levels of uncertainty and unpredictability than was the case in the nuclear hegemonic system.

There are a number of ways that this dynamic could play out during the interregnum, and these dynamics are likely to be inconsistent and contradictory. In some instances, the sheer momentum of past policy combined with bureaucratic inertia and the potency of political, military service and corporate interests, may ensure that residual aspects of the formerly hegemonic postures are adhered to even as formal nuclear alliances rupture. Even as they reach for the old anchors, these states may be forced to adjust and retrench strategically, or start to take their own nuclear risks by making increasingly explicit nuclear threats and deployments against nuclear-armed adversaries – as Japan has begun to do with reference to its “technological deterrent” since about 2012.9 This period could last for many years until and when nuclear war breaks out and leads to a post-nuclear war disorder; or a new, post-hegemonic strategic framework is established to manage and/or abolish nuclear threat.

Under full-blown American nuclear hegemony, fewer states had nuclear weapons, the major nuclear weapons states entered into legally binding restraints on force levels and they learned from nuclear near-misses to promulgate rules of the road and tacit understandings. The lines drawn during full-blown collisions involving nuclear weapons were stark and concentrated the minds of leaders greatly. In a nuclear duel, it was clear that only one of two sides could fire first; the only question was which one. Now, with nine nuclear weapons states, and conflicts conceivably involving three, four or more of them, no matter how much leaders concentrate, it will not be evident who is aiming at who, who may fire first, and during a volley, who fired first and even who hit whom.

In a highly proliferated world, nuclear-armed states may feel driven to obtain larger nuclear forces able to deter multiple adversaries at the same time, sufficient to conduct not only a few nuclear attacks but configured to fight more than one protracted nuclear war at a time, especially in nuclear states torn apart by civil war and post-nuclear attack reconstruction. The first time nuclear weapons are used since 1945 will be shocking, the second time, less so, the third time, the new normal.

### 1NC --- Sats Bad

#### Satellite data ratchets up drug eradication efforts

Kieron Monks 14, Writer for CNN, The Guardian, and Prospect Magazine, BA from the University of Nottingham, “Spy Satellites Fighting Crime From Space”, CNN, 8/12/2014, https://www.cnn.com/2014/08/11/tech/innovation/spy-satellites-fighting-crime-from-space/index.html

The Alayed case is one of several pilot schemes the company is running with police forces and security agencies. A key focus is on organized crime, trafficking and smuggling. The satellites have been put to work on the illegal fishing industry, worth up to $23 billion a year, tracking ships to witness crimes in real time.

"We can identify a specific ship and monitor its behaviour from port to port. We can see if it meets another vessel in a strange way and offloads cargo, or fishes in water it's not allowed to," says Hilton.

In addition to improved resolution, SA Catapult is benefiting from a steady increase in the number of Earth observation satellites, with launches set to double over the next decade, making more data available as well as bringing down the cost. This progress is also enabling the growth of rivals such as U.S. firm Digital Globe, while the Asian market is also expanding.

Some experts believe space surveillance could become industry standard. "The technologies that Catapult is developing will have broad application not only for national and international police organizations but also for anyone working in international security," said Patricia Lewis, research director of International Security at think tank Chatham House. Drug trafficking and arms reduction treaties are among the priority applications, says Lewis.

Read this: Robot furniture builds itself

It will soon be cost effective for police forces to buy their own satellites, predicts Ray Purdy, expert on satellites and the law at University College London. Purdy has been able to monitor criminal activity -- such as large-scale illegal waste disposal -- through satellite surveillance, which would have allowed police to cheaply and easily strengthen existing cases.

"I've gone back and looked at crimes after a prosecution and in some cases you can see illegal activity a year before, which could have allowed a greater conviction," he said. "In other cases we found people resumed criminal activity immediately after they were prosecuted."

#### That backfires, destabilizing Latin America

Barney Lerten 19, Reporter for KTVZ News, “Computer Model: Big Cocaine Busts Backfire Big-Time”, KTVZ News 21, 4/3/2019, https://www.ktvz.com/news/osu-computer-model-big-cocaine-busts-backfire-big-time/1065357402

Efforts to curtail the flow of cocaine into the United States from South America have made drug trafficking operations more widespread and harder to eradicate, according to new research published this week in Proceedings of the National Academy of Sciences.

The National Science Foundation supported the study, which included an Oregon State University geographer and was led by Nicholas Magliocca from University of Alabama. The collaboration also included researchers from The Ohio State University, Northern Arizona University, Arizona State University, Texas State University-San Marcos, the University of Wyoming and the U.S. Fish and Wildlife Service.

“It really is surprising how the model matches our observations,” said David Wrathall of OSU’s College of Earth, Ocean and Atmospheric Sciences. “Our team consists of researchers who worked in different parts of Central America during the 2000s and witnessed a massive surge of drugs into the region that coincided with a reinvigoration of the war on drugs. We asked ourselves: did drug interdiction push drug traffickers into these places?”

The findings are important because after five decades, the United States’ war on drugs has yet to prove itself effective or cost-efficient for dealing with cocaine trafficking, the researchers note. The study comes at a time of increased attention on Central American migrants fleeing drug-related violence in their home countries.

The scientists developed a computer model named NarcoLogic that shows how drug traffickers respond to interdiction strategies and tactics. It differs from previous approaches because it models local- and network-level trafficking dynamics at the same time.

Interdiction efforts are linked to the spread and fragmentation of trafficking routes – a phenomenon known as the “balloon and cockroach effect.” When interdiction efforts are focused in one location, drug traffickers simply relocate.

“Between 1996 and 2017, the Western Hemisphere transit zone grew from 2 million to 7 million square miles, making it more difficult and costly for law enforcement to track and disrupt trafficking networks,” Wrathall said. “But as trafficking spread, it triggered a host of smuggling-related collateral damages: violence, corruption, proliferation of weapons, and extensive and rapid environmental destruction, which has been the focus of my work.”

#### Nuclear war

Dr. Andrew F. Krepinevich 14, Jr., President of the Center for Strategic and Budgetary Assessments, M.P.A. and Ph.D. from Harvard University, and Eric Lindsey, Analyst at the Center for Strategic and Budgetary Assessments, M.A. in Strategic Studies and International Economics from the Johns Hopkins School of Advanced International Studies (SAIS), “Hemispheric Defense in the 21st Century”, 1/9/2014, https://csbaonline.org/research/publications/hemispheric-defense-in-the-21st-century

As the previous chapter demonstrates, for the past two hundred years the principal cause of concern for U.S. defense policymakers and planners thinking about Latin America has been the prospect that great powers outside the Western Hemisphere could exploit the military weakness and internal security challenges of the states within it to threaten U.S. security. While there is reason for optimism about the future of Latin America,58 there is also cause for concern. The region faces enduring obstacles to economic59 and political development60 as well as signi􀂿cant internal security challenges. As General John Kelly, the commander of U.S. Southern Command (SOUTHCOM)61 noted in his March 2013 posture statement before Congress, Latin America: 􀀾I􀁀s a region of enormous promise and exciting opportunities, but it is also one of persistent challenges and complex threats. It is a region of relative peace, low likelihood of interstate con􀃀icts, and overall economic growth, yet is also home to corrosive criminal violence, permissive environments for illicit activities, and episodic political and social protests.62 The instability and non-traditional security challenges that General Kelly cites provide potential opportunities for the United States’ major rivals to (borrowing a term from Monroe’s declaration) “interpose” themselves into the region and, by so doing, threaten regional stability and U.S. security. Two discernible trends suggest that current and prospective Eurasian rivals could seek to exploit regional conditions and dynamics in ways that could impose immense costs on the United States and divert its attention from more distant theaters overseas. The first trend is a return to a heightened level of competition among the “great powers” following two decades of U.S. dominance. The second trend concerns the growing cost of projecting power by traditional military means due to the proliferation of “anti-access/area-denial” (A2/AD) capabilities in general, and precision-guided munitions (PGMs) in particular. These trends suggest that, despite a possible decline in relative U.S. power, external forces will continue to 􀂿nd it beyond their means to threaten the hemisphere through traditional forms of power projection. Far more likely is a return of a competition similar to that which the United States engaged in with the Soviet Union during the Cold War. During that period both powers sought to avoid direct con􀃀ict with the other, given the risks of escalation to nuclear con􀃀ict. Instead each focused primarily on gaining an advantage over the other through the employment of client states and non-state groups as proxies. Proxies were employed for reasons other than avoiding a direct clash, such as gaining positional advantage (e.g., enabling the sponsor to establish bases in its country, as the Soviets did in Cuba). Proxies were also employed as a means of diverting a rival’s attention from what was considered the key region of the competition and to impose disproportionate costs on a rival (e.g., Moscow’s support of 􀀱orth Vietnam as a means of drawing o􀌆 U.S. resources from Europe). This chapter outlines trends in the Western Hemisphere security environment that outside powers may seek to exploit to advance their objectives in ways that threaten regional stability and U.S. security. This is followed by a discussion of how these external powers might proceed to do so. Seeds of Instability Crime, Illicit Networks, and Under-Governed Areas Latin America has a long history of banditry, smuggling, and organized crime. As in the case of Pancho Villa and the 1916-1917 Punitive Expedition, these activities have occasionally risen to a level at which they in􀃀uence U.S. national security calculations. Rarely, however, have these activities been as pervasive and destabilizing as they are today. Although a wide variety of illicit activity occurs in Latin America, criminal organizations conducting drug tra􀌇cking are the dominant forces in the Latin American underworld today, accounting for roughly 􀀇􀀗0 billion per year63 of an estimated 􀀇100 billion in annual illicit trade.6􀀗 Since the Colombian cartels were dismantled in the 1990s, this lucrative trade has been dominated by powerful Mexican cartels whose operations extend across the length and breadth of Mexico, as well as up the supply chain into the cocaine-producing regions of the Andean Ridge and through their wholesale and retail drug distribution networks across the United States.65 The cartels, along with countless smaller criminal organizations, comprise what the head of SOUTHCOM has described as, 􀀾a􀁀n interconnected system of arteries that traverse the entire Western Hemisphere, stretching across the Atlantic and Paci􀂿c, through the Caribbean, and up and down 􀀱orth, South, and Central America . . . 􀀾a􀁀 vast system of illicit pathways 􀀾that is used􀁀 to move tons of drugs, thousands of people, and countless weapons into and out of the United States, Europe, and Africa with an e􀌇ciency, payload, and gross pro􀂿t any global transportation company would envy.66 That being said, the drug tra􀌇cking underworld is by no means a monolithic entity or cooperative alliance. Rather, it is a fractious and brutally competitive business in which rival entities are constantly and literally 􀂿ghting to maximize their share of the drug trade and for control of the critical transshipment points, or plazas, through which it 􀃀ows. To attack their competitor’s operations and protect their own operations from rivals and the Mexican government’s crackdown that began in 2006, the cartels have built up larger, better armed, and more ruthless forces of hired gunmen known as sicarios. Using the billions of dollars generated by their illicit activities, they have acquired weapons and equipment formerly reserved for state armies or state-sponsored insurgent groups, including body armor, assault ri􀃀es, machine guns, grenades, landmines, anti-tank rockets, mortars, car bombs, armored vehicles, helicopters, transport planes, and—perhaps most remarkably—long-range submersibles.67 The cartels’ pro􀂿ts have also enabled them to hire former police and military personnel, including members of several countries’ elite special operations units68 and, in several cases, active and former members of the U.S. military.69 These personnel bring with them—and can provide to the cartels—a level of training and tactical pro􀂿ciency that can be equal or superior to those of the government forces they face. As a result of this pro􀂿ciency and the military-grade weapons possessed by the cartels, more than 2,500 Mexican police o􀌇cers and 200 military personnel were killed in confrontations with organized crime forces between 2008 and 2012 along with tens of thousands of civilians.70 In the poorer states of Central America, state security forces operate at an even greater disadvantage.71 While their paramilitary forces enable the cartels to dominate entire cities and large remote areas through force and intimidation, they are not the only tool available. The cartels also leverage their immense wealth to buy the silence or support of police and government o􀌇cials who are often presented with a choice between plata o plomo—“silver or lead.” According to the head of the Mexican Federal Police, around 2010 the cartels were spending an estimated 􀀇100 million each month on bribes to police.72 By buying o􀌆 o􀌇cials—and torturing or killing those who cannot be corrupted—the cartels have greatly undermined the e􀌆ectiveness of national government forces in general and local police in particular. This, in turn, has undermined the con􀂿dence of the population in their government’s willingness and ability to protect them. Through these means and methods the cartels have gained a substantial degree of de facto control over many urban and rural areas across Mexico, including major cities and large swathes of territory along the U.S.-Mexico border. In many of these crime-ridden areas the loss of con􀂿dence in the government and police has prompted the formation of vigilante militias, presenting an additional challenge to government control.73 Meanwhile, in the “northern triangle” of Central America (the area comprising Guatemala, Honduras, and El Salvador through which the cartels transship almost all cocaine bound for Mexico and the United States) the situation is even more dire. Approximately 90 percent of crimes in this area go unpunished, while in Guatemala roughly half the country’s territory is e􀌆ectively under drug tra􀌇ckers’ control.7􀀗 Further south, similar pockets of lawlessness exist in coca-growing areas in Colombia, Venezuela, Ecuador, Peru, and Bolivia. In Colombia and along its borders with Venezuela, Ecuador, and Peru, much of the coca-growing territory remains under the control of the Revolutionary Armed Forces of Colombia, or FARC. A guerrilla organization founded in the 1960s as a Marxist-Leninist revolutionary movement dedicated to the overthrow of the Colombian government, the FARC embraced coca growing in the 1990s as a means of funding its operations and has subsequently evolved into a hybrid mix of left-wing insurgent group and pro􀂿t-driven cartel.76 This hybrid nature has facilitated cooperation between the FARC and ideological sympathizers like the Bolivarian Alliance, Hezbollah, Al Qaeda in the Islamic Maghreb, and other extremist groups77 as well as with purely criminal organizations like the Mexican cartels. Although the FARC has been greatly weakened over the past decade and no longer poses the existential threat to the Colombian government that it once did, it remains 􀂿rmly in control of large tracts of coca-producing jungle, mostly straddling the borders between Colombia and FARC supporters Venezuela and Ecuador. In summary, organized crime elements have exploited under-governed areas to establish zones under their de facto control. In so doing they pose a signi􀂿cant and growing threat to regional security in general and U.S. interests in particular. As SOUTHCOM commander General Kelly recently observed: 􀀾T􀁀he proximity of the U.S. homeland to criminally governed spaces is a vulnerability with direct implications for U.S. national security. I am also troubled by the signi􀂿cant criminal capabilities that are available 􀀾within them􀁀 to anyone—for a price. Transnational criminal organizations have access to key facilitators who specialize in document forgery, trade-based money laundering, weapons procurement, and human smuggling, including the smuggling of special interest aliens. This criminal expertise and the ability to move people, products, and funds are skills that can be exploited by a variety of malign actors, including terrorists.78 Hezbollah and the Bolivarian Alliance Hezbollah in Latin America 􀀱on-state entities recognized by the U.S. as terrorist organizations also operate in the region, most notably Lebanon-based Hezbollah, an Iranian client group. Hezbollah maintains an active presence in the tri-border area (TBA) of South America— the nexus of Argentina, Brazil, and Paraguay—stretching back to the 1980s. The TBA has traditionally been under-governed and is known by some as “the United 􀀱ations of crime.”79 Eight syndicate groups facilitate this activity in South America’s so-called “Southern Cone,” overseeing legitimate businesses along with a wide range of illegal activities to include money laundering, drug and arms traf- 􀂿cking, identity theft and false identi􀂿cation documents, counterfeiting currency and intellectual property, and smuggling. 􀀱ot surprisingly they are linked to organized crime and to non-state insurgent and terrorist groups, such as the FARC.80 Estimates are that over 􀀇12 billion in illicit transactions are conducted per year, a sum exceeding Paraguay’s entire GDP by a substantial amount.81 Hezbollah achieved notoriety in the region in 1992 when it bombed the Israeli embassy in Argentina. This was followed with the bombing of the AMIA Jewish community center in Buenos Aires two years later. Like many other terrorist organizations, as Hezbollah expanded it established relationships with drug cartels82 that it supports in a variety of ways. For example, the cartels have enlisted Hezbollah, known for its tunnel construction along the Israeli border, for help in improving their tunnels along the U.S.-Mexican border. In 2008, Hezbollah helped broker a deal in which one of Mexico’s major drug cartels, Sinaloa, sent members to Iran for weapons and explosives training via Venezuela using Venezuelan travel documents. 83 As the locus of the drug trade and other illegal cartel activities moved north into Central America and Mexico, Hezbollah has sought to move with it with mixed success. In October 2011, Hezbollah was linked to the e􀌆orts of an Iranian-American to conspire with Iranian agents to assassinate the Saudi ambassador to the United States. The plot involved members of the Los Zetas Mexican drug cartel.8􀀗 The would-be assassin, Mansour Arbabsiar, had established contact with his cousin, a Quds Force85 handler, Gen. Gholam Shakuri. The plot is believed by some to be part of a wider campaign by the Quds Force and Hezbollah to embark on a campaign of violence extending beyond the Middle East to other Western targets, including those in the United States.86 In early September 2012, Mexican authorities arrested three men suspected of operating a Hezbollah cell in the Yucatan area and Central America, including a dual U.S.-Lebanese citizen linked to a U.S.-based Hezbollah money laundering operation. 87A few months later, in December 2012, Wassim el Abd Fadel, a suspected Hezbollah member with Paraguayan citizenship, was arrested in Paraguay. Fadel was charged with human and drug tra􀌇cking and money laundering. Fadel reportedly deposited the proceeds of his criminal activities—ranging from 􀀇50-200,000 per transaction—into Turkish and Syrian bank accounts linked to Hezbollah. In summary, Hezbollah has become a 􀂿xture in Central and Latin America, expanding both its activities and in􀃀uence over time. It has developed links with the increasingly powerful organized crime groups in the region, particularly the narco cartels, along with radical insurgent groups such as the FARC and states like Venezuela who are hostile to the United States and its regional partners. Hezbollah’s principal objectives appear to be undermining U.S. in􀃀uence in the region, imposing costs on the United States, and generating revenue to sustain its operations in Latin America and elsewhere in the world. These objectives are shared by Iran, Hezbollah’s main state sponsor. The Bolivarian Alliance As noted above, geographic, economic, and cultural factors have traditionally helped to prevent the emergence in Latin America of any real military rival to the United States. Although there are no traditional military threats in the region, there are indigenous states whose actions, policies, and rhetoric challenge regional stability and U.S. security. Over the past decade, several states have come together to form the Bolivarian Alliance of the Americas (ALBA), an organization of left-leaning Latin American regimes whose overarching purpose is to promote radical populism and socialism, foster regional integration, and reduce what they perceive as Washington’s “imperialist” influence in the region.89 Since its founding by Hugo Chavez of Venezuela and Fidel Castro of Cuba in December 200􀀗, the Bolivarian Alliance has expanded to include Antigua and Barbuda, Bolivia, Dominica, Ecuador, 􀀱icaragua, and Saint Vincent and the Grenadines. Although the members of the Bolivarian Alliance are militarily weak and pose almost no traditional military threat to the United States or its allies in the region,90 they challenge American interests in the region in other ways. First, they espouse an anti-American narrative that finds substantial support in the region and consistently oppose U.S. efforts to foster cooperation and regional economic integration.91 Second, in their efforts to undermine the government of Colombia, which they consider to be a U.S. puppet, ALBA states provide support and sanctuaries within their borders to coca growers, drug traffickers, other criminal organizations, and the FARC.92 Links to Hezbollah have also been detected.93 Perhaps of greatest concern, they have aligned themselves closely with Iran, inviting it and Syria to participate as “observer states” in the alliance. Other worrisome ALBA activities involve lifting visa requirements for Iranian citizens and hosting large numbers of Iranian diplomats and commercial exchange members that some observers believe to be Iranian intelligence and paramilitary Quds Force operatives.9􀀗 By hosting and cooperating with both foreign agents and violent non-state actors, the ALBA states have come to function as critical nodes in a network of groups hostile to the United States. A Coming Era of Proxy Wars in the Western Hemisphere? History shows that Washington has often emphasized an indirect approach to meeting challenges to its security in Latin America. Yet the United States has not shied away from more direct, traditional uses of force when interests and circumstances dictated, as demonstrated over the past half century by U.S. invasions of the Dominican Republic (1965), Grenada (1983), and Panama (1989) and the occupation of Haiti (199􀀗).Yet several trends seem likely to raise the cost of such operations, perhaps to prohibitive levels. Foremost among these trends is the diffusion of precision-guided weaponry to state and non-state entities. 92 The Second Lebanon War as “Precursor” War A precursor of this trend can be seen in the Second Lebanon War between Israel and Hezbollah.95 During the con􀃀ict, which lasted less than 􀂿ve weeks, irregular Hezbollah forces held their own against the highly regarded Israeli Defense Force (IDF), demonstrating what is now possible for non-state entities to accomplish given the proliferation of militarily-relevant advanced technologies. Hezbollah’s militia engaged IDF armor columns with salvos of advanced, man-portable, antitank guided missiles and other e􀌆ective anti-armor weapons (e.g. rocket-propelled grenades (RPGs) with anti-armor warheads) in great numbers. When the IDF employed its ground forces in southern Lebanon, its armored forces su􀌆ered severe losses; out of the four hundred tanks involved in the 􀂿ghting in southern Lebanon, forty-eight were hit and forty damaged.96 Hezbollah’s defensive line was also well equipped with latest-generation thermal and low-/ no-light enhanced illumination imaging systems, while frontline units were connected to each other and higher command elements via a proprietary, 􀂿ber-optic based communications network, making collection of communications tra􀌇c by Israeli intelligence extremely di􀌇cult. Perhaps most important, Hezbollah possessed thousands of short- and medium- range rockets, often skillfully hidden below ground or in bunkers that made detection from overhead surveillance platforms nearly impossible. During the brief con􀃀ict Hezbollah’s forces 􀂿red some four thousand unguided rockets of various types that hit Israel. Hezbollah’s rocket inventory enabled its forces to attack targets throughout the northern half of Israel. Over nine hundred rockets hit near or on buildings, civilian infrastructure, and industrial plants. Some two thousand homes were destroyed, and over 􀂿fty Israelis died with several thousand more injured. The casualties would undoubtedly been greater if between 100,000 and 250,000 Israeli civilians had not 􀃀ed their homes. Haifa, Israel’s major seaport had to be shut down, as did its oil re􀂿nery.97 Hezbollah also employed several unmanned aerial vehicles for surveillance of Israel, as well as C-802 anti-ship cruise missiles used to attack and damage an Israeli corvette. 98 The G-RAMM Battlefield The brief war between Israel and Hezbollah suggests that future irregular forces may be well-equipped with enhanced communications, extended-range surveillance capabilities, and precision-guided rockets, artillery, mortars and missiles (G-RAMM) 99 able to hit targets with high accuracy at ranges measured from the tens of kilometers perhaps up to a hundred kilometers or more. In projecting power against enemies equipped in this manner and employing these kinds of tactics U.S. forces—as well as other conventional forces— will find themselves operating in a far more lethal battlefield than those in either of the Gulf wars or in stability operations in Afghanistan and Iraq. Moreover, currently constituted conventional forces typically depend on large fixed infrastructure (e.g., military bases, logistics depots, ports, airfields, railheads, bridges) to deploy themselves and sustain combat operations. These transportation and support hubs also serve as the nodes through which internal commerce and foreign trade moves within a country. This key, fixed infrastructure will almost certainly prove far more difficult to defend against irregular forces armed with G-RAMM weaponry. Indeed, had Hezbollah’s “RAMM” inventory had only a small fraction of G-RAMM munitions, say 10-20 percent, it would have been able to in􀃀ict far greater damage than it did historically to Israeli population centers, key government facilities, military installations, and essential commercial assets such as ports, air􀂿elds, and industrial complexes. An irregular enemy force armed with G-RAMM capabilities in substantial numbers could seriously threaten Latin American governments as well as any U.S. (or external great power) forces and support elements attempting a traditional intervention operation. Implications for the U.S. and Other Major Powers The preceding narrative suggests that the combat potential of irregular forces is likely to increase dramatically in the coming years. As this occurs, the cost of operating conventional forces—especially ground forces—and defending key military support infrastructure is likely to rise substantially. Given these considerations the United States and other major powers external to the Western Hemisphere will have strong incentives to avoid the use of conventional forms of military power, particularly large ground forces, in favor of employing irregular proxy forces to advance their interests. Moreover, the high cost and questionable bene􀂿t of the campaigns in Afghanistan and Iraq are likely to create strong domestic opposition in the United States to such operations for some time to come. This must be added to the United States’ greatly diminished 􀂿scal standing that has led to large cuts in planned investments in defense. These factors suggest that Washington will be much less likely to engage in direct military action in Latin America in the coming years than historically has been the case. At the same time, rivals of the United States like China and Russia may be incentivized by these trends, as well as the United States’ overwhelming military dominance in the Western Hemisphere, to avoid the direct use of force to expand their in􀃀uence in Latin America. Instead, like some of the Bolivarian Alliance members, they appear likely to follow the path taken by the Soviet Union during the Cold War and Iran today: supporting non-state proxies to impose disproportionate costs on the United States and to distract Washington’s resources and attention from other parts of the world. This is not to say that Beijing, Moscow, and Tehran would eschew future opportunities to establish bases in Latin America. As in the past, such bases can support efforts to accomplish several important objectives. They can, for example, further insulate a Latin American regime from the threat of direct U.S. military intervention, since Washington would have to account for the possibility that the conflict would lead to a direct confrontation with a more capable and potentially nuclear-armed power.100 Bases in the hemisphere can also enable external powers to conduct military assistance activities, such as training, more easily. Electronic surveillance of the United States and Latin American states could be accomplished more cheaply and e􀌆ectively from forward positions. Finally, certain kinds of military capabilities, such as long-range ballistic missiles and attack submarines, could be pro􀂿tably stationed in Latin America by powers external to that region, particularly if they intended to create the option of initiating con􀃀ict at some future date. These reasons, among others, have made preventing an extra-hemispheric power from establishing bases in Latin America an enduring U.S. priority. Players in a Latin American Great Game Given current trends, several powers external to the region may, either now or over the coming decade, have both the motive and the means to employ both state and non-state proxies in Latin American to achieve their interests. Principal among them is Iran, which is already engaged in supporting proxies against the United States and its partners in the Middle East and has long been developing proxies in Latin America. Additionally, there are reasons to think that China and Russia may be interested in cultivating and supporting Latin American proxies as well.

### 1NC – Poppy

#### Satellites drive poppy eradication

Xiangyu Liu 18, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences and University of Chinese Academy of Sciences, et al., “Opium Poppy Detection Using Deep Learning”, Remote Sensing, Volume 10, Number 12, https://www.mdpi.com/2072-4292/10/12/1886/htm

5. Conclusions

Using satellite remote sensing has become a mainstream approach for monitoring poppy cultivation. However, identifying the location of poppy parcels and mapping their spatial distribution are of great practical significance for local governments making and implementing eradication plans. In order to obtain the specific location coordinates of poppy parcels, we used deep learning-based object detection to detect the location of target poppy parcels in remote sensing images and obtain a spatial distribution map of the poppy growing area. We also compared and analyzed the model performance in different situations using verification areas in Phongsali. It was found that for the region in Phongsali, our method can not only detect poppy parcel locations with a higher precision and recall (95% and 85%, respectively), it also performs well on other types of satellite images and at other spatial resolutions. Compared to existing monitoring methods, our work has three unique points: (1) it can obtain the specific location coordinates of poppy parcels by automatic feature extraction from training data; (2) it provides a quantitative analysis of prediction performance for different parameters; and (3) it performs well on satellite images of different types and varying spatial resolution. In future work, our detection method will be utilized to monitor poppy parcels in different areas, and more experiments will be conducted to verify the applicability of our model to other types of satellite images.

#### That crushes Afghan stability

Dr. Vanda Felbab-Brown 17, Senior Fellow in the Center for 21st Century Security and Intelligence in the Foreign Policy Program at Brookings, PhD in Political Science from MIT, “Afghanistan’s Opium Production is Through The Roof—Why Washington Shouldn’t Overreact”, Brookings Report, 11/21/2017, https://www.brookings.edu/blog/order-from-chaos/2017/11/21/afghanistans-opium-production-is-through-the-roof-why-washington-shouldnt-overreact/

The diversity of the Taliban’s income portfolio is has important implications for counternarcotics and counterinsurgency strategies, especially since eliminating the Taliban’s financial base through counternarcotics efforts is often seen as a key element of the counterinsurgency strategy. There is simply no easy way to bankrupt the Taliban by wiping out the opium poppy economy. And as discussed below, any such move would be disastrous for the counterinsurgency efforts.

There is simply no easy way to bankrupt the Taliban by wiping out the opium poppy economy.

The Taliban is not the only group profiting from the opiate business in Afghanistan. So are various criminal gangs, which often are connected to the government, the Afghan police, tribal elites, and many ex-warlords-cum-government-officials. Many of these powerbrokers are also key anti-Taliban counterinsurgency actors, including in the north of the country where opium too has expanded.

NO MAGIC BULLET

Most counternarcotics measures adopted since 2001 have been ineffective or counterproductive economically, politically, and with respect to counterinsurgency and stabilization efforts.

Eradication and bans on opium poppy cultivation, often borne by the poorest and most socially marginalized, have generated extensive political capital for the Taliban and undermined counterinsurgency. They sparked provincial revolts, alienated the rural population from the Afghan government, and drove the rural population into Taliban hands. The Taliban presented itself as a protector of the people’s poppies and cast the Afghan government and its international sponsors as apostates and infidels trying to kill the Afghan people with hunger.

The Obama administration’s decision to defund centrally-led eradication was a courageous break with U.S. counternarcotics dogma, and such a policy is still correct today. Aerial spraying would be the only way to do any large-scale eradication since manual eradication teams have been attacked. That would be disastrous from the counterinsurgency perspective, since it would cement the Taliban’s political capital rather than bankrupting it. Eradication never bankrupted insurgents anywhere, not even in Colombia. Nor is it sustainable without an end to conflict.

#### Global nuclear war

Caroline Wadhams 14, Senior Fellow at the Center for American Progress, Senior Advisor in the Office of the Quadrennial Diplomacy and Development Review (QDDR) in the Department of State, “Afghans Find Their Way”, Center American Progress, 3/14/2014, <https://www.americanprogress.org/issues/security/report/2014/03/10/85598/afghans-find-their-way/>

Both unifying and centrifugal forces exist simultaneously in Afghanistan, and which forces will prove stronger as international troops draw down remains unknown. Based on consultations with Afghan civil society members; Afghan and international governmental officials; members of the Afghan National Security Forces, or ANSF; and NATO-ISAF officials in Afghanistan and the United States, it is clear that unifying forces in Afghanistan have strengthened since 2001 and may be able to prevent a return to an expanded civil war. These unifying forces are Afghans who have become stakeholders in the current political system. They include young people, the media, many Afghan women and representatives of organized Afghan women’s groups, traditional leaders and new civil society groups, Afghan government officials, and members of the Afghan National Security Forces. They wish to build upon and improve the current system, rather than overthrow it and begin anew.

Afghanistan’s stability remains in the national security interest of the United States. Expanded conflict in Afghanistan has the potential to not only reverse numerous developmental gains for Afghans but also to spill over into nuclear-armed Pakistan and throughout the region. Insecurity in Afghanistan could drive refugees across Afghanistan’s borders and enable violent militant groups to flourish, including Al Qaeda-affiliated groups, placing strains on Afghanistan’s neighbors. As in the past, regional countries—including India, Pakistan, Russia, and Iran—may decide to back their respective proxies, thereby leading to Afghanistan’s further fragmentation and tensions among countries.