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#### CP: The appropriation of outer space is unjust except for Starlink satellites.

#### Starlink has transformed Ukraine’s resistance – it’s the only reliable way to ensure connectivity

Lerman and Zakrzewski 3/19 [(Rachel, covers technology for The Washington Post in San Francisco, and Cat, technology policy reporter, tracking Washington's efforts to regulate Silicon Valley companies) “Elon Musk’s Starlink is keeping Ukrainians online when traditional Internet fails,” Washington Post, 3/19/2022] JL

Ukraine has already received thousands of antennas from Musk’s companies and European allies, which has proved “very effective,” Fedorov said in an interview with The Washington Post Friday.

“The quality of the link is excellent,” Fedorov said through a translator, using a Starlink connection from an undisclosed location. “We are using thousands, in the area of thousands, of terminals with new shipments arriving every other day.”

The use of Starlink as a stopgap measure for citizens and the government to stay connected during an invasion is a major test of the relatively new technology, experts say, and could have widespread implications for the future of war. Internet has become an essential tool for communication, staying informed and even powering weapons.

It’s also a test for Musk. The world’s richest man, valued at $232 billion according to the Bloomberg Billionaire‘s Index, makes a habit of turning to Twitter for brash promises and proclamations in the midst of world crises. Already this week, the Tesla CEO has challenged Putin to a fight and followed up by pledging he would use just one hand if Putin was scared. And he told Putin he could bring a bear.

He has fallen short on some past pledges, including making ventilators for coronavirus patients and efforts to help rescue Thai children stuck in a cave.

But this time, Fedorov and some experts say he’s come through. Tesla employees in Europe reportedly assembled systems to help power Starlink in Ukraine, and Fedorov said other European countries have sent Starlink equipment from their own supplies.

Musk responded to a request for comment on his efforts with Starlink and past efforts, telling The Post to give his regards “to your puppet master Besos😘😘.” (Amazon founder Jeff Bezos owns The Post.) Musk did not respond to a follow-up request specifically on his work with Starlink in Ukraine.

SpaceX declined to comment on its work in Ukraine.

Internet disruptions can be caused by power outages or by fiber optic cables being cut as a result of shelling, experts said. The Starlink technology is being used by civilians in areas under attack that have lost Internet service, and by government officials. Starlink terminals have also been provided to help the country’s tech companies stay online when the war has forced them to relocate. The Times of London reports that a Ukrainian unit is using Starlink to connect its drones attacking Russian forces.

Starlink has grown quickly in recent years, surpassing some satellite Internet competitors by launching more than 1,000 satellites into space. People can buy the service online for $99 a month, plus $499 for the equipment, but Starlink cautions it can take six or more months to ship in some cases.

A person familiar with Starlink’s effort in Ukraine, speaking on the condition of anonymity to discuss sensitive matters, said there are more than 5,000 terminals in the country.

Still, experts said that even a big Starlink network probably wouldn’t be enough power to keep an entire country online and operating at full-speed. But the terminals can serve as a reliable backup as Internet services falter. Fedorov said he and his staff are having discussions with other European leaders and companies about additional satellite and cellular technologies that could help keep Ukrainians online in the event of greater Internet outages.

Internet flows deteriorated on the first day of Russia’s invasion of Ukraine on Feb. 24 and have not fully recovered, according to data-monitoring services. But since that initial dip, connectivity has remained fairly stable, with mainly temporary, isolated outages even during heavy Russian shelling.

“Every day there are outages, but generally service comes back,” said Doug Madory, director of Internet analysis for Kentik, which monitors global data flows.

Even before Fedorov tweeted at Musk for help, SpaceX was working on a way to get Starlink to Ukraine. President and COO Gwynne Shotwell said in a talk at California Institute of Technology this month that the company had been working for several weeks to get regulatory approval to allow the satellites to communicate in Ukraine.

“But then they tweeted,” she said, according to SpaceNews. “There’s our permission.”

Fedorov’s agency is working to get Starlink terminals to regions where Internet access has been cut off, he said. The systems have in some instances been used to connect people when cellular networks in the country have been overloaded.

Fedorov said that he’s briefly texted with Musk and that the tech billionaire has also had a call with Ukrainian President Volodymyr Zelensky.

There are some concerns that accompany the use of the terminals. Like all satellite communications during war, Starlink signals could be used to detect the location of the antennas, experts say.

While it’s unclear if Russia can use the signals to target attacks, Musk instructed caution on Twitter.

“Important warning: Starlink is the only non-Russian communications system still working in some parts of Ukraine, so probability of being targeted is high,” he tweeted. He added that users should turn on the terminal only when needed and keep it far away from people.

Experts have warned that the devices could give away Ukrainians’ locations to Russian attackers, but that hasn’t been an issue so far, Fedorov said. The devices have usually been used in “densely populated areas where there would be a lot of civilians anyway.”

He said Russian cyberattacks have not ramped up on the systems — yet.

#### Starlink will secure Ukrainian victory – 2 internal links:

#### Information sharing – connectivity is key to morale, foreign support, and Russian infighting

Aral 3/1 [(Sinal, David Austin Professor of Management, IT, Marketing and Data Science at MIT,Director of the MIT Initiative on the Digital Economy, Ph.D. in Information Systems from MIT) “Ukraine is winning the information war,” Washington Post, 3/1/2022] JL \*brackets for ableist language

Today, the information war in Ukraine is more intense, more tightly contested and arguably more important than ever because motivating volunteer fighters at home and encouraging foreign support abroad are critical to success. And this time, it seems, Russia is losing. Reports abound on social media of more than 4,000 Russian casualties, images of [destroyed] ~~crippled~~ Russian helicopters and armored vehicles and cellphone videos of savage Russian missile attacks on civilian targets. This mix of official Ukrainian war statistics combined with videos (both verified and unverified), posted by Ukrainian citizens and sympathizers from the front lines, is painting a vivid picture of a homegrown resistance successfully slowing the advance of a much larger and ostensibly better organized military machine. Facebook posts showing Ukrainians kneeling in front of tanks to stop their progress and Twitter images of women and children sheltering in subways and basements set the emotional backdrop of senseless aggression against a peaceful nation. Viral videos and audio clips evoke a defiant optimism impossible to ignore: Ukrainian President Volodymyr Zelensky appearing via his cellphone walking the streets of Kyiv, unharmed, in a “proof of life” demonstration emphasizing his willingness to stay and fight for his country, despite a U.S. offer to evacuate him, for example, or the recording of soldiers in an isolated Ukrainian outpost on Snake Island, in the Black Sea, cursing and telling off the Russian Black Sea Fleet. These stories are spreading rapidly on social media and subsequently echoing through official news channels in a media feedback loop that amplifies the information war and broadcasts it on television sets all over the world.

Zelensky, in particular, is deftly outmaneuvering Putin in this information war. He rallied Ukrainian men to defend their homeland, used the encrypted messaging platform Telegram to speak directly to the Russian people to counter Putin’s narrative, urged the West to step up its assistance in defense of law, order and peace, and even pleaded with foreigners to cross the border into Ukraine to defend Western democracy. While misinformation exists on both sides, Zelensky gives the impression that he’s more committed to truth and transparency. In contrast, Russia has been secretive, obfuscating the true extent of its incursion into Ukraine, and out of touch, airing the rambling addresses of its leader. It’s as if Putin has forgotten that social media transitioned from text to real-time video around the time of the Crimean annexation. In today’s information war, Russian news claiming Zelensky had turned tail and fled was swiftly countered by a video selfie of the Ukrainian president in Kyiv, vowing to defend his homeland. The symbolic contrast between Zelensky striding through war-torn streets, confident even under fire, and Putin, seated, hunched over a large wooden desk in the safety of a secure office hundreds of miles away from the fighting, is stark.

This time, Facebook, YouTube, Twitter and Google are also proactively engaged in the information war. During the Crimean annexation, they were reactive and struggled to keep up with misinformation and false abuse reports. Today, in Ukraine, they have banned Russian state-owned media from advertising on their platforms and defiantly fact-checked Putin’s propaganda despite Russia’s protests and a full ban of Twitter and a partial ban of Facebook in Russia. Facebook has spun up a special operations center, staffed with native Russian and Ukrainian speakers, to monitor misinformation posted about the war, added warning labels to war-related images that its software detects are more than a year old, and restricted access to content from the state-affiliated Russian media outlets RT and Sputnik. YouTube is restricting access to Russian state-owned media outlets for users in Ukraine, removing Russian state-owned channels from recommendations, and limiting their content’s reach across the platform. Twitter has temporarily banned all ads in Ukraine and Russia, added labels to tweets with links to Russian state-affiliated media and downranked their content in algorithmic timelines. While numerous fake videos are circulating on TikTok about Ukraine, the Chinese-owned platform has no comprehensive policy on policing information about the conflict. Despite blocking state-owned Russian media in the European Union, this information flows freely in Ukraine and Russia on the platform, now dubbed “WarTok” by some observers, in part because it is organizing such videos into a convenient discover playlist by the same name.

The information war is critical to what happens next in Ukraine for several reasons. It motivates the resistance by inspiring Ukrainian citizens to take up arms in defense of their country and motivating them with social proof that they are united and not fighting alone. It encourages foreign assistance, pressuring Europe and the United States to step up their efforts to end the conflict. It fans the flames of protest in Russia, mobilizing the antiwar movement in Moscow and elsewhere in defiance of Putin’s aggression. And it may even eventually demoralize Russian troops, who must be wondering what on earth they are doing in Ukraine if the motivation for the intervention has been a lie all along. When Russia struck a Ukrainian television tower on Tuesday, it seemed to confirm Moscow’s keen awareness of the need to counter Ukraine’s information war and to highlight the importance of information in modern conflicts.

Information campaigns are difficult to quantify during the fog of war. But while it is hard to pinpoint the extent to which the information war is contributing to the overwhelming international unity against Putin’s aggression, one thing is clear: Social media, mainstream media and the narrative framing of the invasion of Ukraine undoubtedly will play an important role in how this conflict ends. Now, vigilance and fortitude are not only needed on the battlefield, where lives and territory will be won and lost, but also will be essential online, where the hearts and minds of the world will be won or lost.

#### Drone warfare – Starlink is key to surveillance and attacks

Brodkin 3/21 [(Jon, covers a wide array of IT and tech policy topics for Ars Technica, studied journalism and literature at Boston University) “Starlink helps Ukraine’s elite drone unit target and destroy Russian tanks,” Ars Technica, 3/21/2022] JL

SpaceX's Starlink Internet is proving to be useful for Ukraine's military as it fights the Russian invasion. In an article Friday titled, "Elon Musk's Starlink helping Ukraine to win the drone war," The Telegraph described how the satellite connection helps the Ukrainian army's Aerorozvidka (Aerial Reconnaissance) unit do its work of "using surveillance and attack drones to target Russian tanks and positions."

The Telegraph wrote:

Amid Internet and power outages, which are expected to get worse, Ukraine is turning to the newly available Starlink system for some of its communications. Drone teams in the field, sometimes in badly connected rural areas, are able to use Starlink to connect them to targeters and intelligence on their battlefield database. They can direct the drones to drop anti-tank munitions, sometimes flying up silently to Russian forces at night as they sleep in their vehicles.

The Ukrainian unit's "most sophisticated drones are connected using Starlink," The Times of London wrote. "If we use a drone with thermal vision at night, the drone must connect through Starlink to the artillery guy and create target acquisition," an Aerorozvidka officer told the paper.

The Times wrote that Aerorozvidka "has been picking off tanks, command trucks, and vehicles carrying electronic equipment since the invasion began," destroying dozens of "priority targets."

#### Ukrainian victory shores up global democracy – the alternative is mass genocide – that’s a decision rule

Applebaum 3/22 [(Anne, Senior Fellow at the Johns Hopkins School of Advanced International Studies and the Agora Institute, where she co-directs Arena, a program on disinformation and 21st century propaganda) “Ukraine Must Win,” The Atlantic, 3/22/2022] JL

Russian planners expected the entire war, the conquest of Ukraine, to last no more than six weeks. More than half that time has already passed. There must be an endgame, a moment when the conflict stops. The Ukrainians, and the democratic powers that support Ukraine, must work toward a goal. That goal should not be a truce, or a muddle, or a decision to maintain some kind of Ukrainian resistance over the next decade, or a vow to “bleed Russia dry,” or anything else that will prolong the fighting and the instability. That goal should be a Ukrainian victory.

Before you can achieve something, you have to imagine what it will look like. And in this war, victory can be imagined without difficulty. It means that Ukraine remains a sovereign democracy, with the right to choose its own leaders and make its own treaties. There will be no pro-Russian puppet regime in Kyiv, no need for a prolonged Ukrainian resistance, no continued fighting. The Russian army retreats back over the borders. Maybe those borders could change, or maybe Ukraine could pledge neutrality, but that is for the Ukrainians to decide and not for outsiders to dictate. Maybe international peacekeepers are needed. Whatever happens, Ukraine must have strong reasons to believe that Russian troops will not quickly return.

Imagine, too, the consequences of such a victory. In Washington, most people have long believed that Ukraine is part of a regional conflict, and that Ukraine is a piece of territory that the Russians care more about than we do and always will. But this is no longer true. The Ukrainians, and especially their president, Volodymyr Zelensky, have made their cause a global one by arguing that they fight for a set of universal ideas—for democracy, yes, but also for a form of civic nationalism, based on patriotism and a respect for the rule of law; for a peaceful Europe, where disputes are resolved by institutions and not warfare; for resistance to dictatorship. Zelensky has urged Americans to remember Pearl Harbor. He appealed to the German Parliament with the phrase “Never again”—a mantra used to mean that no Hitler would be allowed to arise again—and told members that, in light of the brutal war in his country, those words are now “worthless.” He called on the European Parliament to “prove that you indeed are Europeans” and admit Ukraine to the European Union.

This language is effective because it evokes the principles that bind together the majority of Europeans, Americans, and many other people around the world, reminding them of how much worse the world was in the bloodier past, and how much worse it could be in the future if those principles no longer matter. The words Zelensky uses also reverberate because they are true. A victory for Ukraine really will be a victory for all who believe in democracy and the rule of law. Citizens of existing democracies and members of the democratic opposition in Russia, Cuba, Belarus, and Hong Kong will all be emboldened. “Their struggle is ours,” a Venezuelan acquaintance told me last week. The institutions protecting the states that embody those ideas, most notably the European Union and NATO, will be strengthened too.

Zelensky’s words resonated further because the Russians have also given this conflict enormous significance. The Russian foreign minister has just declared that this war will change global politics: “This is not about Ukraine at all, but the world order. The current crisis is a fateful, epoch-making moment in modern history. It reflects the battle over what the world order will look like.” Much as Stalin once declared that, when the Second World War ended, “everyone imposes his own system as far as his army can reach,” President Vladimir Putin had planned for the Russian army to impose Russia’s autocratic, kleptocratic political system on all of Ukraine. Already, the Russian occupation of some eastern-Ukrainian towns resembles the Soviet occupation of Central Europe at the end of World War II. Public officials and civic leaders—mayors and police but also members of Parliament, journalists, museum curators—have been arrested and not seen since. Civilians have been terrorized at random. In Mariupol, authorities report that citizens are being forcibly deported to Russia, just as Soviet secret police deported Balts, Poles, and others to Russia after the invasions of 1939 and 1945. In the case of a Russian victory, these tactics would be applied all over Ukraine, creating mass terror, mass violence, and instability for years to come. And, yes, if we accept that outcome, autocrats from Minsk to Caracas to Beijing will take note: Genocide is now allowed*.*

#### Democracy caps a litany of converging existential threats.

Diamond 19, Professor of Political Science and Sociology at Stanford University, Senior Fellow at the Hoover Institution, Senior Fellow at the Freeman Spogli Institute for International Studies, PhD in Sociology from Stanford University, (Dr. Larry, Ill Winds: Saving Democracy from Russian Rage, Chinese Ambition, and American Complacency, p. 199-202)

The most obvious response to the ill winds blowing from the world’s autocracies is to help the winds of freedom blowing in the other direction. The democracies of the West cannot save themselves if they do not stand with democrats around the world. This is truer now than ever, for several reasons. We live in a globalized world, one in which models, trends, and ideas cascade across borders. Any wind of change may gather quickly and blow with gale force. People everywhere form ideas about how to govern—or simply about which forms of government and sources of power may be irresistible—based on what they see happening elsewhere. We are now immersed in a fierce global contest of ideas, information, and norms. In the digital age, that contest is moving at lightning speed, shaping how people think about their political systems and the way the world runs. As doubts about and threats to democracy are mounting in the West, this is not a contest that the democracies can afford to lose. Globalization, with its flows of trade and information, raises the stakes for us in another way. Authoritarian and badly governed regimes increasingly pose a direct threat to popular sovereignty and the rule of law in our own democracies. Covert flows of money and influence are subverting and corrupting our democratic processes and institutions. They will not stop just because Americans and others pretend that we have no stake in the future of freedom in the world. If we want to defend the core principles of self-government, transparency, and accountability in our own democracies, we have no choice but to promote them globally. It is not enough to say that dictatorship is bad and that democracy, however flawed, is still better. Popular enthusiasm for a lesser evil cannot be sustained indefinitely. People need the inspiration of a positive vision. Democracy must demonstrate that it is a just and fair political system that advances humane values and the common good. To make our republics more perfect, established democracies must not only adopt reforms to more fully include and empower their own citizens. They must also support people, groups, and institutions struggling to achieve democratic values elsewhere. The best way to counter Russian rage and Chinese ambition is to show that Moscow and Beijing are on the wrong side of history; that people everywhere yearn to be free; and that they can make freedom work to achieve a more just, sustainable, and prosperous society. In our networked age, both idealism and the harder imperatives of global power and security argue for more democracy, not less. For one thing, if we do not worry about the quality of governance in lower-income countries, we will face more and more troubled and failing states. Famine and genocide are the curse of authoritarian states, not democratic ones. Outright state collapse is the ultimate, bitter fruit of tyranny. When countries like Syria, Libya, and Afghanistan descend into civil war; when poor states in Africa cannot generate jobs and improve their citizens’ lives due to rule by corrupt and callous strongmen; when Central American societies are held hostage by brutal gangs and kleptocratic rulers, people flee—and wash up on the shores of the democracies. Europe and the United States cannot withstand the rising pressures of immigration unless they work to support better, more stable and accountable government in troubled countries. The world has simply grown too small, too flat, and too fast to wall off rotten states and pretend they are on some other planet. Hard security interests are at stake. As even the Trump administration’s 2017 National Security Strategy makes clear, the main threats to U.S. national security all stem from authoritarianism, whether in the form of tyrannies from Russia and China to Iran and North Korea or in the guise of antidemocratic terrorist movements such as ISIS.1 By supporting the development of democracy around the world, we can deny these authoritarian adversaries the geopolitical running room they seek. Just as Russia, China, and Iran are trying to undermine democracies to bend other countries to their will, so too can we contain these autocrats’ ambitions by helping other countries build effective, resilient democracies that can withstand the dictators’ malevolence. Of course, democratically elected governments with open societies will not support the American line on every issue. But no free society wants to mortgage its future to another country. The American national interest would best be secured by a pluralistic world of free countries—one in which autocrats can no longer use corruption and coercion to gobble up resources, alliances, and territory. If you look back over our history to see who has posed a threat to the United States and our allies, it has always been authoritarian regimes and empires. As political scientists have long noted, no two democracies have ever gone to war with each other—ever. It is not the democracies of the world that are supporting international terrorism, proliferating weapons of mass destruction, or threatening the territory of their neighbors.

## 1NC – Off

#### Xi is consolidating unprecedented political power – that’s only possible with strong PLA support

Chang 21 [(Gordon, columnist, author and lawyer, has given briefings at the National Intelligence Council, the CIA, and the State Department, JD from Cornell Law School) “China Is Becoming a Military State,” Newsweek, 1/14/2021] JL

At this moment, the Communist Party is taking back power from all others in society, including the State Council, and the military is gaining influence inside Party circles.

Why is the People's Liberation Army making a comeback? The answer lies in succession politics.

Xi Jinping was selected the top leader because he was not identified with any of the main factional groupings—like the Communist Youth League of Hu Jintao or the Shanghai Gang of Jiang—that dominated Party politics. Xi, in short, was the least unacceptable choice to the Party's squabbling factional elders.

Xi, once chosen, apparently decided that in order to rule, he needed a base, so he made certain officers the core of his support. As longtime China watcher Willy Lam told Reuters in 2013, Xi Jinping's faction is the military.

And with the help of the military, Xi has accumulated almost unprecedented political power, ending the Party's two-decade-old consensus-driven system and replacing it with one-man rule.

As Wang, a professor at the Georgia Institute of Technology, notes, Xi, with the amendments to the National Defense Law, is demonstrating his power of "leading everything and everyone." He is wrapping that effort in a "rule by law" move that is formalizing his perch at the top of the Chinese political system.

How is Xi using his newfound power? There is a hint in the National Defense Law amendments. These changes, Fisher tells us, "increase the powers of the CMC to mobilize the civilian sector for wartime and to better authorize the CMC to engage in foreign military exercises to defend China's 'development interests.'" As such, the changes "point to China's ambition to achieve 'whole nation' levels of military mobilization to fight wars, and give the CMC formal power to control the future Chinese capabilities for global military intervention."

"The revised National Defense Law also embodies the concept that everyone should be involved in national defense," reports the Communist Party's *Global Times*, summarizing the words of an unnamed CMC official. "All national organizations, armed forces, political parties, civil groups, enterprises, social organizations and other organizations should support and take part in the development of national defense, fulfill national defense duties and carry out national defense missions according to the law."

That sounds like Xi is getting ready to pick even more fights with neighbors—and perhaps the United States. On January 5, he ordered People's Liberation Army generals and admirals to be prepared to "act at any second."

Why would Xi want to start a war? "This is really indicative of there being instability in China, and Mr. Xi seeking to consolidate power around himself. ...The new National Defense Law essentially removes the alternative power base of the premier of the State Council, in this case Li Keqiang, from interfering with Mr. Xi's own power ambitions," said Charles Burton of the Ottawa-based Macdonald-Laurier Institute to John Batchelor, the radio host, earlier this month. As Burton noted, the amendments to the National Defense Law undermine Premier Li Keqiang, the head of the State Council and long-standing rival to Xi.

"I think this really gives the green light for him to dispatch the military on any pretext that he feels is necessary to defend his power," Burton says. "China is becoming a military state."

#### The plan alienates the PLA – they perceive space dominance as key to military strength – independently, space cooperation forces fights

Dean Cheng 19, Senior Research Fellow graduated from Princeton with a BA in politics and MIT, Asian Studies Center, 4/9/19, “Prospects for U.S.-China Space Cooperation”, https://www.heritage.org/testimony/prospects-us-china-space-cooperation

Moreover, in keeping with the Chinese memory of the “Century of Humiliation,” Beijing will want any cooperative venture to be, at a minimum, on a co-equal basis. For the PRC to be treated as anything other than a full member in any program or effort would smack of the “unequal treaties” that marked China’s interactions with the rest of the world between 1839 and 1949. For the same reason, China has generally been reluctant to join any organization or regime in which it was not party to negotiating. For the CCP, whose political legitimacy rests, in part, on the idea that it has restored Chinese pride and greatness, this is likely to be a significant part of any calculation.

At the same time, space is now a sector that enjoys significant political support within the Chinese political system. Based on their writings, the PLA is clearly intent upon developing the ability to establish “space dominance,” in order to fight and win “local wars under informationized conditions.”[8] The two SOEs are seen as key parts of the larger military-industrial complex, providing the opportunities to expose a large workforce to such areas as systems engineering and systems integration. It is no accident that China’s commercial airliner development effort tapped the top leadership of China’s aerospace corporations for managerial and design talent.[9] From a bureaucratic perspective, this is a powerful lobby, intent on preserving its interests.¶ China’s space efforts should therefore be seen as political, as much as military or economic, statements, directed at both domestic and foreign audiences. Insofar as the PRC has scored major achievements in space, these reflect positively on both China’s growing power and respect (internationally) and the CCP’s legitimacy (internally). Efforts at inducing Chinese cooperation in space, then, are likely to be viewed in terms of whether they promote one or both objectives. As China has progressed to the point of being the world’s second-largest economy (in gross domestic product terms), it becomes less clear as to why China would necessarily want to cooperate with other countries on anything other than its own terms.¶ Prospects for Cooperation

Within this context, then, the prospects for meaningful cooperation with the PRC in the area of space would seem to be extremely limited. China’s past experience of major high-technology cooperative ventures (Sino–Soviet cooperation in the 1950s, U.S.–China cooperation in the 1980s until Tiananmen, and Sino–European space cooperation on the Galileo satellite program) is an unhappy one, at best. The failure of the joint Russian–Chinese Phobos–Grunt mission is likely seen in Beijing as further evidence that a “go-it-alone” approach is preferable.

Nor is it clear that, bureaucratically, there is significant interest from key players such as the PLA or the military industrial complex in expanding cooperation.[10] Moreover, as long as China’s economy continues to expand, and the top political leadership values space efforts, there is little prospect of a reduction in space expenditures—making international cooperation far less urgent for the PRC than most other spacefaring states.

If there is likely to be limited enthusiasm for cooperation in Chinese circles, there should also be skepticism in American ones. China’s space program is arguably one of the most opaque in the world. Even such basic data as China’s annual space expenditures is lacking—with little prospect of Beijing being forthcoming. As important, China’s decision-making processes are little understood, especially in the context of space. Seven years after the Chinese anti-satellite (ASAT) test, exactly which organizations were party to that decision, and why it was undertaken, remains unclear. Consequently, any effort at cooperation would raise questions about the identity of the partners and ultimate beneficiaries—with a real likelihood that the PLA would be one of them.

#### The private sector is key

Patel 21 [(Neel, space reporter for MIT Technology Review, and I also write The Airlock newsletter, your number one source for everything happening off this planet. Before joining, he worked as a freelance science and technology journalist, contributing stories to Popular Science, The Daily Beast, Slate, Wired, the Verge, and elsewhere. Prior to that, he was an associate editor for Inverse, where I grew and led the website’s space coverage.) “China’s surging private space industry is out to challenge the US” MIT Technology Review, 1/21/2021. https://www.technologyreview.com/2021/01/21/1016513/china-private-commercial-space-industry-dominance/] BC

At first glance, the Ceres-1 launch might seem unremarkable. Ceres-1, however, wasn’t built and launched by China’s national program. It was a commercial rocket—only the second from a Chinese company ever to go into space. And the launch happened less than three years after the company was founded. The achievement is a milestone for China’s fledgling—but rapidly growing—private space industry, an increasingly critical part of the country’s quest to dethrone the US as the world’s preeminent space power.

The rivalry between the US and China, whose space program has surged over the last two decades, is what most people mean when they refer to the 21st-century's space race. China is set to build a new space station later this year and will likely attempt to send its taikonauts to the moon before the decade ends. But these big-picture projects represent just one aspect of the country’s space ambitions. Increasingly, the focus is now on the commercial space industry as well. The nation's growing private space business is less focused on bringing prestige and glory to the nation and more concerned with reducing the cost of spaceflight, increasing its international influence—and making money.

“The state is really great at large, ambitious projects like going to the moon or developing a large reconnaissance satellite,” says Lincoln Hines, a Cornell University researcher who focuses on Chinese foreign policy. “But it’s not responsive to meeting market needs”—one big way to encourage rapid technological growth and innovation. “I think the government thinks its commercial space sector can be complementary to the state,” he says.

What are the market needs that Hines is referring to? Satellites, and rockets that can launch them into orbit. The space industry is undergoing a renaissance thanks to two big trends spurred by the commercial industry: we can make satellites for less money by making them smaller and using off-the-shelf hardware; and we can also make rockets for less money, by using less costly materials or reusing boosters after they’ve already flown (which SpaceX pioneered with its Falcon 9). These trends mean it is now cheaper to send stuff into space, and the services and data that satellites can offer have come down in price accordingly.

China has seen an opportunity. A 2017 report by Bank of America Merrill Lynch estimates that the space industry could be worth up to $2.7 trillion by 2030. Setting foot on the moon and establishing a lunar colony might be a statement of national power, but securing a share of such a highly lucrative business is perhaps even more important to the country’s future.

“In the future, there will be tens of thousands of satellites waiting to launch, which is a major opportunity for Galactic Energy” says Wu Yue, a company spokesperson.

The problem is, China has to make up decades’ worth of ground lost to the West.

#### That factionalizes the CCP and emboldens challenges to Xi – the PLA is increasingly powerful and not unconditionally subservient

Simpson 16 [(Kurtis, Centre Director with Defence Research and Development Canada, has been conducting research on China’s leadership, Communist Party politics, the People’s Liberation Army and foreign policy for over 30 years,Master’s Degree and a Ph.D from York University, previously served as an intelligence analyst at the Privy Council Office and leader of the Asia Research Section at the Department of National Defence’s Chief Defence Intelligence (CDI) organization) “China’s Re-Emergence: Assessing Civilian-Military Relations In Contemporary Era – Analysis,” Eurasia Review, 12/21/2016] JL

Paralleling divided loyalties between Chinese Party, military and government bodies, one must also recognize that within each, factions exist, based upon generational, personal, professional, geographic, or institutional allegiances.19 These minor fault lines are most pronounced during crises, and they continue independent of professionalization.20 As was demonstrated by the civil-military dynamics of the Chinese government’s suppression of student demonstrators, both divisions and allegiances of interests emerged with respect to how to contain this situation and factional interests largely determined which troops would carry out the orders, who commanded them, what civilian Party leaders supported the actions, and who would be sanctioned following the mêlée. A consequence of factionalism within the PLA is that the Party’s control mechanisms (particularly because rule of law and constitutional restraints on the military are weak) needs to be robust to control not only a single military chain of command but (particularly during crises) perhaps more than one. This is not likely the case. A review of the evidence indicates the military’s influence, on the whole, is increasing, and the Party’s control decreasing.

On one level, the Party clearly controls the military as the Central Military Commission or CMC (the highest military oversight body in the PRC) is chaired by a civilian, President Xi Jinping. Moreover, the PLAs representation on formal political decision-making bodies (such as the Politburo Standing Committee, the Politburo, the Central Committee, and the NPC) has decreased over the years, but this does not necessary equate to a reduced level of influence. For example, the two Vice-Chairman of the CMC are now military generals, as are the remaining other eight members. Irrespective of institutional membership, military leaders retain considerable say. Personal interactions and informal meetings with senior party elites provide venues to sway decisions. They do, also, hold important places on leading small groups dedicated to issues like Taiwan and other security questions, such as the South China Seas.21

In a similar vein, other methods of Party influence, as exercised through political commissars, party committees, and discipline inspection commissions are no longer empowered to enforce the ideological dictates of a paramount leader. In the face of diffuse reporting chains, competing allegiances, and often effective socialization by the military units they are supposed to be watching over, most do not provide the Party guardian and guidance function once so pervasive.

While perhaps overstated, Paltiel’s observation that “…China’s energies over the past century and half have given the military a prominent and even dominant role in the state, preempting civilian control and inhibiting the exercise of constitutional authority” is likely now truer than ever before in history.22 While still loyal to the party as an institution, the PLA is not unconditionally subservient to a particular leader and retains the resources to enter the political arena if (at the highest levels) a decision is made to do so.

The civilian-military trend lines evident in China since the end of the Cultural Revolution affirm that the symbiotic nature of the Party-PLA relationship has morphed in important respects since the late 1960s. The promotion of professionalism, a reduced role for ideological indoctrination, an increasing bifurcation of civil-military elites, and growing state powers (complete with divided loyalties and continued factionalism) has complicated the political landscape informing how the CCP interacts with the PLA. If, as postulated, we have moved from a fused, ‘dual role elite’ model to one of ‘conditional compliance’ in which the military actually holds a preponderance of the power capabilities and where its interests are satisfied through concessions, bargaining, and pay-offs, empirical evidence should reflect this. A review of China’s three major leadership changes since the transition from the revolutionary ‘Old Guard’ to the modern technocrats confirms this.

Formally anointed and legitimized by Deng in 1989, Jiang assumed leadership without military credentials and few allies, viewed by many as a ‘caretaker’ Party Secretary in the wake of the Tiananmen Massacre. Despite his limitations, Jiang was well versed in the vicissitudes of palace politics. Informed by a high political acumen, he immediately promoted an image as an involved Commander-in-Chief, personally visiting all seven military regions, a sign of commitment not made by either the likes of Mao or Deng. Symbolic gestures like this were bolstered by his providing incentives to the PLA, such as: consistent raises in the defence budget; funds for military modernization; as well as equipment, logistics, and augmented R&D.23

Referred to as the ‘silk-wrapped needle,’ Jiang marshalled Party resources to not only reward, but to punish.24 His institutional authority over appointments enabled him to manipulate factions, dismiss those who opposed him, enforce new rigid retirement standards, and promote loyalists. A delicate equilibrium was established during the early-1990s until his semi-retirement in 2004,25 where Jiang guaranteed military priorities such as supporting ‘mechanization’ and an ‘information-based military’ (promoting the concept of RMA with Chinese characteristics) in exchange for the PLA backing of his legacy contributions to Marxist Leninist Mao Zedong thought with the enshrinement of his “Three Represents” doctrine.

Like Jiang, Hu Jintao’s succession was the product of negotiation, compromise, and concessions. While neither opposed by the PLA, nor supported by the military ‘brass,’ Hu was a known commodity, having served as Vice-President (1998) and CMC Vice-Chairman since 1999. He was deemed acceptable until proven otherwise. In the shadow of Jiang (who retained the position of CMC Chair until 2004), Hu did not exert the same kind of influence in, nor engender the same kind of deference from, China’s military, but equally proved capable of fostering a pragmatic relationship with the army which ensured its interests, and in so doing, legitimized his leadership position.

Ceding much of the military planning and operational decisions to the PLA directly, Hu played to his strengths and focused upon national security issues (such as the successful resolution of SARs in China), which bolstered his credibility as a populist leader among the masses, indirectly increasing his power within both the military and the Party. Additionally, he focused upon foreign military security affairs (most notably, North Korea-US negotiations), which enabled him to link his personal political agenda with the military’s latest ambitions.

In according the military a distinct place in China’s national development plan, supporting China’s rise, and ensuring its vital interests, Hu recognized the military’s evolving requirement to ‘go global’ and its worldwide interests in non-combat operations, such as peacekeeping and disaster relief, as well as stakes in the open seas, outer space, and cyberspace as interest frontiers with no geographic boundaries.26 Under the slogan of ‘China’s historical mission in the new phase of the new century’ and his acquiescence to the PLA’s stated requirements ‘to win local wars under modern conditions’ by funding new technology acquisition, Hu received the army’s formal recognition for his contributions to military thought based upon “scientific development” which informed a “strategic guiding theory,” resulting in a new operational orientation for China’s military. Emulating his predecessor, Hu won ‘conditional compliance’ from the PLA by successfully bartering military needs and wants for the army’s support and endorsement of his political tenure. This was not done outside of self-interest. Hu, as did Jiang, skillfully coopted, fired, and promoted select Generals to serve his greater ends, and he did this through varied means. Ultimately, however, it was done in a manner acceptable to the military.

Xi Jinping’s rise to power in 2012, while replicating the ‘horse-trading’ of Jiang and Hu, marks a fundamental departure in leadership style. Often described as a transformative leader, Xi is openly critical of his predecessors and rails against earlier periods where reform stalled and corruption grew.27 An advocate of ‘top-level design,’ incrementalism is being supplanted by a massive attempt to centralize all aspects of the CCP’s power, which includes a major restructuring of the economy, government, administration, and military.

Nicknamed “the gun and the knife” as a slight for his attempts to simultaneously control the army, police, spies, and the ‘graft busters,’ Xi’s power appears uncontested at present. Nevertheless, he is also viewed as ‘pushing the envelope too far’ and endangering the equilibrium which has been established between the Party and PLA over the past 25 years. For example, only two years into his mandate, he fostered a Cult of Personality, “the Spirit of Xi Jinping” which was officially elevated to the same standing as that of Mao and Deng, by comparison, foundational figures in Chinese history. His open attacks of political ‘enemies’ (most notably Zhou Yongkang, a Politburo Standing Committee member and former security czar) breeds fear among almost every senior official, all of whom are vulnerable on some point. Equally true, an unprecedented anti-corruption campaign is inciting comrades to turn on comrades, not unlike a massive game of prisoner’s dilemma.

Nowhere is the pressure for reform greater than in the PLA. Xi advocates administering the army with strictness and austerity, promoting frugality and obedience. At his direction, “mass-line educational campaigns” designed to “rectify work style” through criticism and self-criticism are being implemented.28 Ideological and political building is now equated with army building, as a means of ensuring the Party’s uncontested grip over the troops ideologically, politically, and organizationally. Select military regions (those opposite Taiwan and adjacent to the South China Seas) and commanders from those regions are witnessing favoritism and promotion at the expense of others. Moreover, a new “CMC Chairmanship Responsibility System” has been instituted, which directly calls into question the support of some of Xi’s senior-most generals.

A ‘hardliner’ by nature, Xi recognizes that he must earn the support of the PLA. New military priorities he supports include: accelerating modernization; Joint Command and C4ISR; training; talent management, as well as equipment and force modernization. That said, his goal of achieving the Chinese dream of building a “wealthy, powerful, democratic, civilized, and harmonious socialist modernized nation” by 2021, the 100th anniversary of the founding of the CCP, is exceptionally ambitious. It will require endless commitments to competing interests in a period of economic stagnation and global economic downturn. Should the PLA come to believe they are not first in line for government largess, support for Xi could erode very quickly.29

#### CCP instability collapses the international order – extinction

Perkinson 12 [(Jessica, MA in international affairs from American University) “The Potential for Instability in the PRC: How the Doomsday Theory Misses the Mark,” American University School of International Service, 2012] JL

Should the CCP undergo some sort of dramatic transformation – whether that be significant reform or complete collapse, as some radical China scholars predict2 – the implications for international and US national security are vast. Not only does China and the stability of the CCP play a significant role in the maintenance of peace in the East Asian region, but China is also relied upon by many members of the international community for foreign direct investment, economic stability and trade. China plays a key role in maintaining stability on the Korean Peninsula as one of North Korea’s only allies, and it is argued that instability within the Chinese government could also lead to instability in the already sensitive military and political situation across the Taiwan Strait. For the United States, the effect of instability within the CCP would be widespread and dramatic. As the United States’ largest holder of US treasury securities, instability or collapse of the CCP could threaten the stability of the already volatile economic situation in the US. In addition, China is the largest trading partner of a number of countries, including the US, and the US is reliant upon its market of inexpensive goods to feed demand within the US.

It is with this in mind that China scholars within the United States and around the world should be studying this phenomenon, because the potential for reform, instability or even collapse of the CCP is of critical importance to the stability of the international order as a whole. For the United States specifically, the potential - or lack thereof - forreform of the CCP should dictate its foreign policy toward China. If the body of knowledge on the stability of the Chinese government reveals that the Chinese market is not a stable one, it is in the best interests of the United States to look for investors and trade markets elsewhere to lessen its serious dependence on China for its economic stability, particularly in a time of such uncertain economic conditions within the US.

## 1NC

#### CP: The appropriation of outer space by private entities except for within the Islamic Republic of Iran is unjust.

#### JCPOA passes now, but it’s tentative and the window is closing

Norman 3/15 [(Laurence, deputy bureau chief at Dow Jones Newswires and The Wall Street Journal based in London) “Russia Softens Iran Demands, Re-Opening Way for Nuclear Deal,” The Wall Street Journal, 3/15/2022] JL

Russia walked back recently made demands on Washington related to the Iran nuclear deal, clearing the way for Tehran and Washington to revive the 2015 agreement, senior western diplomats said.

On Tuesday, after Russia’s Foreign Minister Sergei Lavrov met in Moscow with his Iranian counterpart, both Mr. Lavrov and Hossein Amir-Abdollahian said Russia wasn’t standing in the way of the accord.

Russia earlier this month had demanded guarantees from Washington that its economic ties with Iran wouldn’t be affected by the Western sanctions imposed on Moscow over Ukraine. The last-minute move was the driving factor that prevented a deal to revive the 2015 nuclear agreement over the past 10 days, western diplomats have said.

The European Union, which coordinates the talks, announced a break in the negotiations on Friday, blaming “external factors” for preventing a deal that is “essentially ready.”

A senior Western diplomat said Tuesday evening that Russia’s chief negotiator at the talks, Mikhail Ulyanov, had informed the EU that Russia would accept narrower guarantees ensuring that Russia could carry out the nuclear work it is mandated to do under the 2015 nuclear deal. That includes a uranium swap with Iran, the redesign of the Fordow nuclear facility and the provision of nuclear fuel to Iranian reactors.

“Russia says happy with guarantees on nuclear projects and not asking for anything else,” said the diplomat, who asked to remain unidentified because of the sensitive nature of the talks. “So we can go ahead with negotiations that are now exclusively US-Iran.”

State Department spokesman Ned Price said Tuesday evening that “we are not going to sanction Russia for undertaking, for participating in nuclear projects that are part of the” nuclear deal.

The negotiations, which have taken place for almost a year now, aim to reach agreement on the steps Washington and Tehran will take to return into compliance with the 2015 agreement, which lifted most international sanctions on Tehran in exchange for tight but temporary restrictions on Iran’s nuclear work.

After the Trump administration took the U.S. out of the accord and reimposed sweeping sanctions on Iran, saying the accord was too weak, Tehran expanded its nuclear work and has now gathered almost enough nuclear high-grade enriched uranium for a nuclear weapon, according to the United Nations nuclear agency.

Iran says its nuclear program is purely peaceful and U.S. officials have said there is no evidence Iran has decided to build a nuclear weapon.

Over the weekend, a senior U.S. official told The Wall Street Journal that only “a handful of issues left” remained between the U.S. and Iran to reach an accord, mainly on the issue of the scope of sanctions relief Iran would receive from Washington. The official said the U.S. side felt the resolution of these issues was “within reach.”

The U.S. official and senior European diplomats said they wouldn’t negotiate broad carve-outs from Western sanctions over Russia’s invasion of Ukraine with Moscow to save the nuclear deal. They warned that if Russia didn’t back off its demands, they would seek to complete an agreement with Iran, bypassing Russia.

Mr. Ulyanov said Tuesday evening on Twitter it was a lie that Russia had stood in the way of the accord with its demands for guarantees. He added that “some demands were accepted.” Iran, which has friendly ties with Moscow, has also continued to blame Washington for not completing the deal.

Negotiations between the U.S. and Iran could resume without negotiators returning to Vienna, where the talks have been held since April 2021, the senior western diplomat said. Iran so far has refused to talk directly with the Americans and instead have negotiated through the European powers at the talks. With so few issues still to be resolved, negotiators could work from capitals to resolve the remaining differences.

Time is pressing. U.S. and European officials say that Iran’s nuclear work has expanded close to a point that the deal’s main benefit to the West—keeping Iran months away from amassing enough nuclear fuel for a nuclear weapon—would be impossible.

European diplomats in particular have warned that with the war in Ukraine becoming ever-deadlier, the diplomatic window for concluding the deal is closing.

#### The plan kills Iranian support for JCPOA – private space capabilities are a key focus for Raisi

Larson and Lewis 21 [(Jim, Senior research associate at the James Martin Center for Nonproliferation Studies at the Middlebury Institute of International Studies at Monterrey)(Jeffery, Professor at the Middlebury Institute of International Studies at Monterey and a staff member at the James Martin Center for Nonproliferation Studies) “IRANIAN PRESIDENT RAISI’S RENEWED EMPHASIS ON SPACE IS LIKELY TO CREATE NEW TENSIONS”, War on the Rocks, 12/20/2021]  
Western press reporting on the first 100 days of Iran’s new hardline president, Ebrahim Raisi, has naturally focused on his impact on Iran’s nuclear and missile programs. But in Iran, officials refer to three, not two, “power-creating” (eghtedar-saz) industries: nuclear, missiles, and space. And it is space, more so than either nuclear or missiles, where Raisi has focused his early public efforts. And it is Iran’s moves in space that will probably present President Joe Biden with the first challenge of the post-nuclear deal era.

In his first 100 days, Raisi has moved to place his imprint by reinvigorating Iran’s space program, the results of which will be visible in the coming months and years. Raisi has now set in motion a process that will result in Iran launching more satellites in the coming year, unveiling new space launch vehicles, and breaking ground on a new space launch facility in southern Iran. These developments will understandably be interpreted by Western media in the context of Iran’s missile programs and the broader security situation. But it is important to understand that Iran is also deeply committed to the economic, military, and security uses of outer space.

The Biden administration will have to choose how to respond to Iran’s growing presence in space. Will the United States try to balance its legitimate concerns about proliferation with Iran’s right to access space? Or will it treat Iran as a pariah, hoping that vocal opposition to Iran’s space launches will somehow produce a different result than the same approach did with North Korea?

Raisi Moves to Revive Iran’s Space Programs

Raisi is very publicly attempting to reinvigorate an Iranian space program that has been struggling in recent years. His new communications minister has criticized the state of the space program left by his predecessor — he called it “sorrowful” and “backwards” and sacked the head of the Iranian Space Agency. Raisi chaired a meeting of the Supreme Space Council — the country’s highest-level space policymaking organization — which had not met for more than a decade. At that meeting, Raisi committed Iran to launching more satellites into low earth orbit and reaching geostationary orbit by 2026.

Iran has two space programs: a state space program and a parallel program run by the Islamic Revolutionary Guard Corps. The state space program is under Iran’s president, who chairs the Supreme Space Council. The council, in turn, oversees the Iranian Space Agency, which contracts with entities under the communications, defense, and science ministries — and increasingly, Iran’s private sector. We use the phrase “state” space program rather than “civilian” because Iran’s military is fully integrated into this program.

#### Iranian proliferation goes nuclear – causes regional war and spurs proliferation cascades across the Middle East

Chilton and Hoshovsky 20 – [(Kevin, led U.S. Strategic Command and has participated in the Jewish Institute for National Security of America’s Generals and Admirals Program; Harry, policy analyst at JINSA’s Gemunder Center for Defense and Strategy) "Avoiding a nuclear arms race in the Middle East," Defense News, 2-13-2020, https://www.defensenews.com/opinion/commentary/2020/02/13/avoiding-a-nuclear-arms-race-in-the-middle-east/] TDI

This raises two immediate concerns. First, **should Iran race for the bomb, it is** almost inevitable that the United States and/or Israel will take preventative military action **to stop it from crossing that fateful threshold**. This could easily spiral into a regional war as Iran activates its various proxy forces against the United States and its allies.

Second, **an Iranian nuclear breakout attempt could** spur a proliferation cascade throughout the Middle East, **beginning with Saudi Arabia.**

Mohammed bin Salman, **the Saudi crown prince, openly stated in 2018 that if Iran developed nuclear weapons**, Riyadh would quickly “follow suit.” **One suggested approach would see Saudi Arabia purchase a nuclear power reactor from a major supplier like South Korea and then build a reprocessing plant that would yield enough weapons-grade plutonium in five years**.

A half-decade delay isn’t optimal, however, when the goal is achieving nuclear deterrence quickly. Thus, there is the so-called Islamabad option.

This refers to Riyadh’s role in financing Pakistan’s nuclear weapons program and an alleged commitment from Islamabad that it would repay the favor. While Pakistani and Saudi officials have denied any such understanding, **there is the possibility that the two could work out an arrangement where Islamabad could deploy some of its nuclear arsenal on Saudi soil following a successful Iranian breakout.**

Although this maneuver would draw sharp, international criticism, in theory, it would allow Riyadh to remain in good standing vis-a-vis the nuclear nonproliferation treaty. Nevertheless, Pakistan might not be willing to play spoiler against a nuclearized Iran. If it is, Middle Eastern geopolitics would become extremely unstable.

**If Saudi Arabia acquires nuclear weapons**, many believe Turkey would follow suit. Last September, Turkish President Recep Tayyip **Erdogan declared that he “cannot accept” the argument from Western nations that Turkey should not be allowed to attain nuclear weapons.** In 1958, Charles de Gaulle proclaimed that a nation without nuclear weapons “does not command its own destiny”; two years later, France tested its first bomb. Erdogan’s comments echo those earlier remarks and raise the possibility that Ankara could become the second NATO member to leave the alliance’s nuclear umbrella in favor of its own independent arsenal.

#### Prolif cascades undermine deterrence and cause nuclear war – this is predictive of what a multi-nuclear Middle East would look like

Krepinevich 13 – [(Dr. Andrew F, the President of the Center for Strategic and Budgetary Assessments) “Critical Mass: Nuclear Proliferation in the Middle East,” 2013, https://csbaonline.org/uploads/documents/Nuclear-Proliferation-in-the-Middle-East.pdf] TDI

As more countries over time develop nuclear capabilities and build up their nuclear arsenals, the competition will evolve from an Israeli-Iranian affair to a multi-state rivalry. For illustrative purposes **we will assume that** in the 2025-2030 timeframe, **Iran**, **Saudi Arabia, Turkey, and perhaps Egypt** and/or Iraq **have nuclear arsenals** in the low double-digit range (i.e., ten to forty weapons). What form might a nuclear competition among these powers and Israel assume? The remainder of this chapter attempts to shed some light on this issue, and its potential implications, with emphasis on those affecting regional stability.

The challenge of preserving stability when confronted with military competition among five nuclear-armed states within the Middle East and with other powers external to the region engaged in a Great Game for influence is formidable. At first blush, one thing seems apparent: **many** Cold War-era metrics **for assessing the competition and gauging where it might be headed** appear to be of little utility; in fact, **they may actually prove misleading and dangerous**. The same can be said of those looking to apply Cold War-era arms control metrics as a way of keeping the peace in general and avoiding nuclear use in particular.

**During the Cold War, many nuclear strategists came to view nuclear parity** (the possession of roughly equivalent arsenals capable of inflicting roughly equivalent levels of destruction) **between the United States and the Soviet Union as stabilizing**. The perception of these strategists is that the rough equivalence contributed to the tradition of non-use of nuclear weapons, and was thus desirable. Parity enabled both sides to avoid the perception of being inferior to their rival, and perceptions are critical to deterrence and to preserving the confidence of one’s allies and security partners. If accepted by both sides, parity could enable them to avoid the cost and instability associated with “racing” toward ever-larger arsenals. Accordingly, maintaining parity was a major objective of U.S.-Soviet (and later U.S.-Russian) arms control negotiations. Yet irrespective of its merits, parity is not an option for states engaged in an n-player competition. Each competitor cannot have a nuclear force equivalent to all the others. Even if the competition should solidify into two coalitions so as to mimic the two-player Cold War competition, questions would almost certainly arise regarding the willingness of a coalition partner that has not been attacked to risk its own destruction by using its nuclear weapons in response to an attack on its ally. Indeed, these concerns were raised during the Cold War, and formed a major justification for France pursuing its own force de frappe. 93

**In a Middle Eastern “n-player” competition, all nuclear powers would be** challenged to establish an “assured destruction” capability **against all the other regional nuclear powers**, another Cold War desideratum, **given their relatively modest economies. An “assured destruction” capability in an n-state competition would require that each state have weapons sufficient to survive an initial attack by all potential rivals and still be able to devastate the countries of all attackers**. It would also require that the source of the attack be reliably identified. As noted earlier, this may prove difficult given likely limitations on these states’ ability to field advanced early warning systems. For example, would Israel be able to determine with confidence the owner of a ballistic missile launched from a location along the Iranian-Turkish border? The origin of any cruise missile launched from a sea-based platform? Even assuming a state could identify the source (or sources) of an attack, could its command and control systems survive the attack sufficiently intact to execute a retaliatory strike? **A decapitation strike could preclude an “assured destruction” retaliatory strike even if sufficient weapons survive to execute one.**

**This, in turn,** raises the possibility of a “catalytic” war**—one that is initiated between two states by a third party. Given a proliferated Middle East as described above, the chances that a regime would incorrectly attribute the source of an attack cannot be easily dismissed. To the extent** cyber weapons can introduce false information **into a state’s decision-making process, the risks of catalytic war only increase.**

Further complicating matters, **the early warning requirement following a proliferation cascade could be multidirectional, and at some point perhaps 360 degrees**, especially if nuclear rivals begin deploying a portion of their nuclear forces at sea. **Early warning requirements would be stressed even further** (and the costs of such a system increase correspondingly) **if a neighboring state** (e.g., Iran in the case of Turkey or Iraq; Turkey in the case of Israel; etc.) **were to acquire nuclear weapons**. In this case warning times would be even more compressed than in an Israeli-Iranian competition. Owing to its proximity to Iran, **Saudi Arabia**, for example, **could have less than five minutes to react to an Iranian ballistic missile attack no matter how advanced its early warning and command and control systems are.**

As noted earlier in this assessment, regardless of what assumptions are made regarding a regional nuclear power’s early warning system, given the short ballistic missile flight times it seems likely that preserving command and control of the state’s nuclear forces while under attack will prove challenging. **States might be tempted to adopt a launch-on-warning posture**, but this requires both early warning and a highly responsive command and control system. Should a state determine that it will not be able to launch-on-warning and instead attempt to “ride-out” a nuclear first strike and retaliate, it would still need its command and control system to function effectively in the wake of the nuclear attack. **Absent a highly resilient command and control system,** a state’s ability to launch a retaliatory **nuclear strike** may require nuclear release authority to be diffused to lower-level commanders. But again, absent an effective early warning system it may not be possible to determine the attack source with confidence in a region with multiple nuclear powers.

## 1NC – Case

### 1NC – Solvency

#### There’s zero legal basis or enforcement mechanism for space as a “commons” – circumvention is inevitable

Herzfeld et al 15 [(Dr. Henry, Research Professor of Space Policy and International Affairs at George Washington University) “How Simple Terms Mislead Us: The Pitfalls of Thinking about Outer Space as a Commons,” Secure World Foundation, 2015] JL

Furthermore, there is a logical contradiction in this discussion about outer space being treated as a commons. If a commons needs a sovereign government to grant the open territory to the use of all people, it is that government that has to oversee, regulate, and enforce that charter. Art. II of the OST prohibits national sovereignty in outer space. Thus, it is an area without a government. Even if all nations regard outer space as a “commons,” it is a very different concept from any commons that has been established in the past. There is no real legal precedent, no true means of oversight or enforcement, and therefore should not be confused with any of the many ways that concept has been applied to the territory or oceans of the Earth. Thinking about space as a global commons may be a laudatory ideal, and one that perhaps can be regarded as a very long-term goal for society. But, it is hardly a practical solution or goal for the problems we face today, witnessed by at least a thousand years of precedent in law and practice coupled with radically different technologies, exponential world population growth from 500 million people (at most) in Roman times and the Middle Ages to over 7 billion people today,38 and other radical political and social changes.

### 1NC – monopolies

#### Turn – changes in appropriation scare investors and research---spills over to broader space.

Freeland 05, [Steven Freeland, 2005, (BCom, LLB, LLM, University of New South Wales; Senior Lecturer in International Law, University of Western Sydney, Australia; and a member of the Paris-based International Institute of Space Law), “Up, Up and … Back: The Emergence of Space Tourism and Its Impact on the International Law of Outer Space.”, Chicago Journal of International Law: Vol. 6: No. 1, Article 4. 2005. JDN, <https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=1269&context=cjil//> Accessed: 02-22-22] Recut Sachin

V. THE NEED FOR CELESTIAL PROPERTY RIGHTS? ¶ The fundamental principle of "non-appropriation" upon which the international law of outer space is based stems from the desire of the international community to ensure that outer space remains an area beyond the jurisdiction of any state(s). Similar ideals emerge from UNCLOS (in relation to the High Seas) as well as the Antarctic Treaty, 42 although in the case of the latter treaty, it was finalised after a number of claims of sovereignty had already been made by various States and therefore was structured to "postpone" rather than prejudice or renounce those previously asserted claims.43 In the case of outer space, its exploitation and use is expressed in Article I of the Outer Space Treaty to be "the province of all mankind," a term whose meaning is not entirely clear but has been interpreted by most commentators as evincing the desire to ensure that any State is free to engage in space activities without reference to any sovereign claims of other States. This freedom is reinforced by other parts of the same Article and is repeated in the Moon Agreement (which also applies to "other celestial bodies within the solar system, other than the earth")." Even though both the scope for space activities and the number of private participants have expanded significantly since these treaties were finalised, it has still been suggested that the nonappropriation principle constitutes "an absolute barrier in the realization of every kind of space activity., 4 ' The amount of capital expenditure required to research, scope, trial, and implement a new space activity is significant. To bring this activity to the point where it can represent a viable "stand alone" commercial venture takes many years and almost limitless funding. From the perspective of a private enterprise contemplating such an activity, it would quite obviously be an important element in its decision to devote resources to this activity that it is able to secure the highest degree of legal rights in order to protect its investment. Security of patent and other intellectual property rights, for example, are vital prerequisites for private enterprise research activity on the ISS, and these rights are specifically addressed by the ISS Agreement between the partners to the project and were applicable to the experiments undertaken by Mark Shuttleworth when he was onboard the ISS.46

#### No terminal impact to private innovation

#### Can’t solve duopolies – 1AC ISS says the plan only prevents single actors from appropriating space, but their internal link is about SpaceX-Amazon collaboration

#### Squo debris thumps

Orwig 16 [(Jessica, MS in science and tech journalism from Texas A&M, BS in astronomy and physics from Ohio State) “Russia says a growing problem in space could be enough to spark a war,” Insider,’ January 26, 2016, https://www.businessinsider.com/russia-says-space-junk-could-spark-war-2016-1] TDI

NASA has already warned that the large amount of space junk around our planet is growing beyond our control, but now a team of Russian scientists has cited another potentially unforeseen consequence of that debris: War.

Scientists estimate that anywhere from 500,000 to 600,000 pieces of human-made space debris between 0.4 and 4 inches in size are currently orbiting the Earth and traveling at speeds over 17,000 miles per hour.

If one of those pieces smashed into a military satellite it "may provoke political or even armed conflict between space-faring nations," Vitaly Adushkin, a researcher for the Institute of Geosphere Dynamics at the Russian Academy of Sciences, reported in a paper set to be published in the peer-reviewed journal Acta Astronautica, which is sponsored by the International Academy of Astronautics.

#### Space debris creates existential deterrence and a taboo

Bowen 18 [(Bleddyn, lecturer in International Relations at the University of Leicester) “The Art of Space Deterrence,” European Leadership Network, February 20, 2018, https://www.europeanleadershipnetwork.org/commentary/the-art-of-space-deterrence/] TDI

Fourth, the ubiquity of space infrastructure and the fragility of the space environment may create a degree of existential deterrence. As space is so useful to modern economies and military forces, a large-scale disruption of space infrastructure may be so intuitively escalatory to decision-makers that there may be a natural caution against a wholesale assault on a state’s entire space capabilities because the consequences of doing so approach the mentalities of total war, or nuclear responses if a society begins tearing itself apart because of the collapse of optimised energy grids and just-in-time supply chains. In addition, the problem of space debris and the political-legal hurdles to conducting debris clean-up operations mean that even a handful of explosive events in space can render a region of Earth orbit unusable for everyone. This could caution a country like China from excessive kinetic intercept missions because its own military and economy is increasingly reliant on outer space, but perhaps not a country like North Korea which does not rely on space. The usefulness, sensitivity, and fragility of space may have some existential deterrent effect. China’s catastrophic anti-satellite weapons test in 2007 is a valuable lesson for all on the potentially devastating effect of kinetic warfare in orbit.

#### Alliances check miscalc – too costly

MacDonald 13 [(Bruce, teaches at the United States Institute of Peace on strategic posture and space/cyber security issues, leads a study on China and Crisis Stability in Space, and is adjunct professor at the Johns Hopkins School of Advanced International Studies) “Deterrence and Crisis Stability in Space and Cyberspace,” in Anti-satellite Weapons, Deterrence and Sino-American Space Relations, September 2013, https://apps.dtic.mil/dtic/tr/fulltext/u2/a587431.pdf] TDI

The US alliance structure can promote deterrence and crisis stability in space, as with nuclear deterrence. China has no such alliance system. If China were to engage in large-scale offensive counter-space operations, it would face not only the United States, but also NATO, Japan, South Korea and other highly aggrieved parties. Given Beijing’s major export dependence on these markets, and its dependence upon them for key raw material and high technology imports, China would be as devastated economically if it initiated strategic attacks in space. In contrast to America’s nuclear umbrella and extended deterrence, US allies make a tangible and concrete contribution to extended space deterrence through their multilateral participation in and dependence upon space assets. Attacks on these space assets would directly damage allied interests as well as those of the United States, further strengthening deterrent effects.

#### Zero risk of escalation from ASATs

**Pavur and Martinovic 19** [James Pavur and Ivan Martinovic, May 2019, "The Cyber-ASAT: On the Impact of Cyber Weapons in Outer Space," ResearchGate, 11th International Conference on Cyber Conflict: Silent Battle [https://www.researchgate.net/publication/334422193\_The\_Cyber-ASAT\_On\_the\_Impact\_of\_Cyber\_Weapons\_in\_Outer\_Space accessed 12/10/21](https://www.researchgate.net/publication/334422193_The_Cyber-ASAT_On_the_Impact_of_Cyber_Weapons_in_Outer_Space%20accessed%2012/10/21)]Adam

A. Limited Accessibility

Space is difficult. Over 60 years have passed since the first Sputnik launch and only nine countries (ten including the EU) have orbital launch capabilities. Moreover, a launch programme alone does not guarantee the resources and precision required to operate a meaningful ASAT capability. Given this, one possible reason why space wars have not broken out is simply because only the US has ever had the ability to fight one [21, p. 402], [22, pp. 419–420].

Although launch technology may become cheaper and easier, it is unclear to what extent these advances will be distributed among presently non-spacefaring nations. Limited access to orbit necessarily reduces the scenarios which could plausibly escalate to ASAT usage. Only major conflicts between the handful of states with ‘space club’ membership could be considered possible flashpoints. Even then, the fragility of an attacker’s own space assets creates de-escalatory pressures due to the deterrent effect of retaliation. Since the earliest days of the space race, dominant powers have recognized this dynamic and demonstrated an inclination towards de-escalatory space strategies [23].

B. Attributable Norms

There also exists a long-standing normative framework favouring the peaceful use of space. The effectiveness of this regime, centred around the Outer Space Treaty (OST), is highly contentious and many have pointed out its serious legal and political shortcomings [24]–[26]. Nevertheless, this status quo framework has somehow supported over six decades of relative peace in orbit.

Over these six decades, norms have become deeply ingrained

into the way states describe and perceive space weaponization. This de facto codification was dramatically demonstrated in 2005 when the US found itself on the short end of a 160-1 UN vote after opposing a non-binding resolution on space weaponization. Although states have occasionally pushed the boundaries of these norms, this has typically occurred through incremental legal re-interpretation rather than outright opposition [27]. Even the most notable incidents, such as the 2007-2008 US and Chinese ASAT demonstrations, were couched in rhetoric from both the norm violators and defenders, depicting space as a peaceful global commons [27, p. 56]. Altogether, this suggests that states perceive real costs to breaking this normative tradition and may even moderate their behaviours accordingly.

One further factor supporting this norms regime is the high degree of attributability surrounding ASAT weapons. For kinetic ASAT technology, plausible deniability and stealth are essentially impossible. The literally explosive act of launching a rocket cannot evade detection and, if used offensively, retaliation. This imposes high diplomatic costs on ASAT usage and testing, particularly during peacetime.

C. Environmental Interdependence

A third stabilizing force relates to the orbital debris consequences of ASATs. China’s 2007 ASAT demonstration was the largest debris-generating event in history, as the targeted satellite dissipated into thousands of dangerous debris particles [28, p. 4]. Since debris particles are indiscriminate and unpredictable, they often threaten the attacker’s own space assets [22, p. 420]. This is compounded by Kessler syndrome, a phenomenon whereby orbital debris ‘breeds’ as large pieces of debris collide and disintegrate. As space debris remains in orbit for hundreds of years, the cascade effect of an ASAT attack can constrain the attacker’s long-term use of space [29, pp. 295– 296]. Any state with kinetic ASAT capabilities will likely also operate satellites of its own, and they are necessarily exposed to this collateral damage threat. Space debris thus acts as a strong strategic deterrent to ASAT usage.

1. **No space war – insurmountable barriers and everyone has an interest in keeping space peaceful**

**Dobos 19** [(Bohumil Doboš, scholar at the Institute of Political Studies, Faculty of Social Sciences, Charles University in Prague, Czech Republic, and a coordinator of the Geopolitical Studies Research Centre) “Geopolitics of the Outer Space, Chapter 3: Outer Space as a Military-Diplomatic Field,” Pgs. 48-49] TDI

Despite the theorized potential for the achievement of the terrestrial dominance throughout the utilization of the ultimate high ground and the ease of destruction of space-based assets by the potential space weaponry, the utilization of space weapons is with current technology and no effective means to protect them far from fulfilling this potential (Steinberg 2012, p. 255). In current global international political and technological setting, the utility of space weapons is very limited, even if we accept that the ultimate high ground presents the potential to get a decisive tangible military advantage (which is unclear). This stands among the reasons for the lack of their utilization so far. Last but not the least, it must be pointed out that the states also develop passive defense systems designed to protect the satellites on orbit or critical capabilities they provide. These further decrease the utility of space weapons. These systems include larger maneuvering capacities, launching of decoys, preparation of spare satellites that are ready for launch in case of ASAT attack on its twin on orbit, or attempts to decrease the visibility of satellites using paint or materials less visible from radars (Moltz 2014, p. 31). Finally, we must look at the main obstacles of connection of the outer space and warfare. The first set of barriers is comprised of physical obstructions. As has been presented in the previous chapter, the outer space is very challenging domain to operate in. Environmental factors still present the largest threat to any space military capabilities if compared to any man-made threats (Rendleman 2013, p. 79). A following issue that hinders military operations in the outer space is the predictability of orbital movement. If the reconnaissance satellite's orbit is known, the terrestrial actor might attempt to hide some critical capabilities-an option that is countered by new surveillance techniques (spectrometers, etc.) (Norris 2010, p. 196)-but the hide-and-seek game is on. This same principle is, however, in place for any other space asset-any nation with basic tracking capabilities may quickly detect whether the military asset or weapon is located above its territory or on the other side of the planet and thus mitigate the possible strategic impact of space weapons not aiming at mass destruction. Another possibility is to attempt to destroy the weapon in orbit. Given the level of development for the ASAT technology, it seems that they will prevail over any possible weapon system for the time to come. Next issue, directly connected to the first one, is the utilization of weak physical protection of space objects that need to be as light as possible to reach the orbit and to be able to withstand harsh conditions of the domain. This means that their protection against ASAT weapons is very limited, and, whereas some avoidance techniques are being discussed, they are of limited use in case of ASAT attack. We can thus add to the issue of predictability also the issue of easy destructibility of space weapons and other military hardware (Dolman 2005, p. 40; Anantatmula 2013, p. 137; Steinberg 2012, p. 255). Even if the high ground was effectively achieved and other nations could not attack the space assets directly, there is still a need for communication with those assets from Earth. There are also ground facilities that support and control such weapons located on the surface. Electromagnetic communication with satellites might be jammed or hacked and the ground facilities infiltrated or destroyed thus rendering the possible space weapons useless (Klein 2006, p. 105; Rendleman 2013, p. 81). This issue might be overcome by the establishment of a base controlling these assets outside the Earth-on Moon or lunar orbit, at lunar L-points, etc.-but this perspective remains, for now, unrealistic. Furthermore, no contemporary actor will risk full space weaponization in the face of possible competition and the possibility of rendering the outer space useless. No actor is dominant enough to prevent others to challenge any possible attempts to dominate the domain by military means. To quote 2016 Stratfor analysis, "(a) war in space would be devastating to all, and preventing it, rather than finding ways to fight it, will likely remain the goal" (Larnrani 20 16). This stands true unless some space actor finds a utility in disrupting the arena for others.

#### Use or lose is wrong – It’d be irrational AND never be contemplated by any state.

Kroenig 18 Matthew Kroenig, Associate Professor in the Department of Government and the Edmund A. Walsh School of Foreign Service at Georgetown, The Logic of American Nuclear Strategy: Why Strategic Superiority Matters, Oxford UPress, pp. 137-142

The second, and more common, argument as to why nuclear superiority might be destabilizing is because the state in the position of nuclear inferiority (in this case, America’s adversaries) may feel “use ’em or lose ’em” (UELE) pressures, but this argument also withers under interrogation.26

According to strategic stability theorists, a US nuclear advantage increases the danger of nuclear war because the inferior opponent may fear that its nuclear arsenal is vulnerable to a first strike. Rather, than wait for the adversary (in this case the United States) to move first and wipe out, or seriously blunt, its strategic forces, the argument goes, the inferior state may decide to intentionally launch a nuclear war early in a crisis in order to avoid suffering a disarming first strike. This is the logic most often invoked by strategic stability theorists when they claim that US nuclear advantages are destabilizing. This is also the precise problem identified and inspired by Wohlstetter’s basing studies.

Use ’em or lose ’em enjoys a certain superficial plausibility, but, upon closer inspection, there are two fundamental reasons why the logic simply does not hold up. First, it ignores the fact that the superior state retains a healthy ability to retaliate. So, even if the inferior state is worried about having its nuclear weapons eliminated in a first strike, the decision to launch its nuclear weapons first as a coping mechanism would be a decision to intentionally launch a nuclear war against a state with at least a secure, second-strike capability. This means that even if the inferior state launches its nuclear weapons first, it will be virtually guaranteed to suffer devastating nuclear retaliation. Moreover, given that it is in a situation of extreme inferiority (so extreme that it might even be vulnerable to a preemptive nuclear strike), this would mean intentionally launching a devastating nuclear war that will likely turn out much worse for itself then for its opponent. It would simply be irrational for a state to intentionally launch a nuclear war against a state with an assured retaliatory capability.

Let us consider a concrete example. The United States maintains nuclear superiority over China, as we have seen in previous chapters. Strategic stability theorists want us to believe that if the United States takes additional steps to further enhance its superiority, then China would face even greater temptations to launch a nuclear first strike against the US homeland in the event of a serious crisis. In other words, strategic stability theorists hold that China would be so worried about losing a devastating nuclear war against United States that it would intentionally choose to start a devastating nuclear war against the United States. The argument does not make sense.

### 1NC – Ozone

#### No link to environment scenario— your links are about capitalism in space, not about how those would impact life on earth.

#### Warming doesn’t trigger extinction

* 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.

#### No Ozone Impact.

Ridley 14 (Matthew White Ridley, BA and PhD in Zoology from Oxford. “THE OZONE HOLE WAS EXAGGERATED AS A PROBLEM,” *Rational Optimist*, 9/25/14, <http://www.rationaloptimist.com/blog/the-ozone-hole-was-exaggerated-as-a-problem.aspx>) dwc 19

Serial hyperbole does the environmental movement no favours My recent Times column argued that the alleged healing of the ozone layer is exaggerated, but so was the impact of the ozone hole over Antarctica: The ozone layer is healing. Or so said the news last week. Thanks to a treaty signed in Montreal in 1989 to get rid of refrigerant chemicals called chlorofluorocarbons (CFCs), the planet’s stratospheric sunscreen has at last begun thickening again. Planetary disaster has been averted by politics. For reasons I will explain, this news deserves to be taken with a large pinch of salt. You do not have to dig far to find evidence that the ozone hole was never nearly as dangerous as some people said, that it is not necessarily healing yet and that it might not have been caused mainly by CFCs anyway. The timing of the announcement was plainly political: it came on the 25th anniversary of the treaty, and just before a big United Nations climate conference in New York, the aim of which is to push for a climate treaty modelled on the ozone one. Here’s what was actually announced last week, in the words of a Nasa scientist, Paul Newman: “From 2000 to 2013, ozone levels climbed 4 per cent in the key mid-northern latitudes.” That’s a pretty small change and it is in the wrong place. The ozone thinning that worried everybody in the 1980s was over Antarctica. Over northern latitudes, ozone concentration has been falling by about 4 per cent each March before recovering. Over Antarctica, since 1980, the ozone concentration has fallen by 40 or 50 per cent each September before the sun rebuilds it. So what’s happening to the Antarctic ozone hole? Thanks to a diligent blogger named Anthony Watts, I came across a press release also from Nasa about nine months ago, which said: “ Two new studies show that signs of recovery are not yet present, and that temperature and winds are still driving any annual changes in ozone hole size.” As recently as 2006, Nasa announced, quoting Paul Newman again, that the Antarctic ozone hole that year was “the largest ever recorded”. The following year a paper in Nature magazine from Markus Rex, a German scientist, presented new evidence that suggested CFCs may be responsible for less than 40 per cent of ozone destruction anyway. Besides, nobody knows for sure how big the ozone hole was each spring before CFCs were invented. All we know is that it varies from year to year. How much damage did the ozone hole ever threaten to do anyway? It is fascinating to go back and read what the usual hyperventilating eco-exaggerators said about ozone thinning in the 1980s. As a result of the extra ultraviolet light coming through the Antarctic ozone hole, southernmost parts of Patagonia and New Zealand see about 12 per cent more UV light than expected. This means that the weak September sunshine, though it feels much the same, has the power to cause sunburn more like that of latitudes a few hundred miles north. Hardly Armageddon. The New York Times reported “an increase in Twilight Zone-type reports of sheep and rabbits with cataracts” in southern Chile. Not to be outdone, Al Gore wrote that “hunters now report finding blind rabbits; fisherman catch blind salmon”. Zoologists briefly blamed the near extinction of many amphibian species on thin ozone. Melanoma in people was also said to be on the rise as a result. This was nonsense. Frogs were dying out because of a fungal disease spread from Africa — nothing to do with ozone. Rabbits and fish blinded by a little extra sunlight proved to be as mythical as unicorns. An eye disease in Chilean sheep was happening outside the ozone-depleted zone and was caused by an infection called pinkeye — nothing to do with UV light. And melanoma incidence in people actually levelled out during the period when the ozone got thinner.

#### Growth is sustainable – yes absolute decoupling

Hausfather 4/6 [(Zeke, climate scientist and energy systems analyst whose research focuses on observational temperature records, climate models, and mitigation technologies, PhD in climate science from the University of California, Berkeley, former research scientist with Berkeley Earth, senior climate analyst at Project Drawdown, and US analyst for Carbon Brief) “Absolute Decoupling of Economic Growth and Emissions in 32 Countries,” Breakthrough Institute, 4/6/2021] JL

The past 30 years have seen immense progress in improving the quality of life for much of humanity. Extreme poverty — the number of people living on less than $1.90 per day — has fallen by nearly two-thirds, from 1.9 billion to around 650 million. Life expectancy has risen in most of the world, along with literacy and access to education, while infant mortality has fallen. Despite perceptions to the contrary, the average person born today is likely to have access to more opportunities and have a better quality of life than at any other point in human history. Much of this increase in human wellbeing has been propelled by rapid economic growth driven largely by state-led industrial policy, particularly in poor-to-middle income countries.

However, this growth has come at a cost: between 1990 and 2019, global emissions of CO2 increased by 56%. Historically, economic growth has been closely linked to increased energy consumption — and increased CO2 emissions in particular — leading some to argue that a more prosperous world is one that necessarily has more impacts on our natural environment and climate. There is a lively academic debate about our ability to “absolutely decouple” emissions and growth — that is, the extent to which the adoption of clean energy technology can allow emissions to decline while economic growth continues.

Over the past 15 years, however, something has begun to change. Rather than a 21st century dominated by coal that energy modelers foresaw, global coal use peaked in 2013 and is now in structural decline. We have succeeded in making clean energy cheap, with solar power and battery storage costs falling 10-fold since 2009. The world produced more electricity from clean energy — solar, wind, hydro, and nuclear — than from coal over the past two years. And, according to some major oil companies, peak oil is upon us — not because we have run out of cheap oil to produce, but because demand is falling and companies expect further decline as consumers increasingly shift to electric vehicles.

The world has long been experiencing a relative decoupling between economic growth and CO2 emissions, with the emissions per unit of GDP falling for the past 60 years. This is the case even in countries like India and China that have been undergoing rapid economic growth. But relative decoupling alone is inadequate in a world where global CO2emissions need to peak and decline in the next decade to give us any chance at limiting warming to well below 2℃, in line with Paris Agreement targets.

Thankfully, there is increasing evidence that the world is on track to absolutely decouple CO2 emissions and economic growth — with global CO2 emissions potentially having peaked in 2019 and unlikely to increase substantially in the coming decade. While an emissions peak is just the first and easiest step towards eventually reaching the net-zero emissions required to stop the world from continuing to warm, it demonstrates that linkages between emissions and economic activity are not an immutable law, but rather simply a result of our current means of energy production.

In recent years we have seen more and more examples of absolute decoupling — economic growth accompanied by falling CO2 emissions. Since 2005, 32 countries with a population of at least one million people have absolutely decoupled

emissions from economic growth, both for terrestrial emissions (those within national borders) and consumption emissions (emissions embodied in the goods consumed in a country). This includes the United States, Japan, Mexico, Germany, United Kingdom, France, Spain, Poland, Romania, Netherlands, Belgium, Portugal, Sweden, Hungary, Belarus, Austria, Bulgaria, El Salvador, Singapore, Denmark, Finland, Slovakia, Norway, Ireland, New Zealand, Croatia, Jamaica, Lithuania, Slovenia, Latvia, Estonia, and Cyprus. Figure 1, below, shows the declines in territorial emissions (blue) and increases in GDP (red).  
To qualify as having experienced absolute decoupling, we require countries included in this analysis to pass four separate filters: a population of at least one million (to focus the analysis on more representative cases), declining territorial emissions over the 2005-2019 period (based on a linear regression), declining consumption emissions, and increasing real GDP (on a purchasing power parity basis, using constant 2017 international $USD). We chose not to include 2020 in this analysis because it is not particularly representative of longer-term trends, and consumption and territorial emissions estimates are not yet available for many countries.

There is a wide range of rates of economic growth between 2005-2019 among countries experiencing absolute decoupling. Somewhat counterintuitively, there is no significant relationship between the rate of economic growth and the magnitude of emissions reductions within the group. While it is unlikely that there is not at least some linkage between the two factors, there are plenty of examples of countries (e.g., Singapore, Romania, and Ireland) experiencing both extremely rapid economic growth and large reductions in CO2 emissions.

One of the primary criticisms of some prior analyses of absolute decoupling is that they ignore leakage. Specifically, the offshoring of manufacturing from high-income countries over the past three decades to countries like China has led to “illusory” drops in emissions, where the emissions associated with high-income country consumption are simply shipped overseas and no longer show up in territorial emissions accounting. There is some truth in this critique, as there was a large increase in emissions embodied in imports from developing countries between 1990 and 2005. After 2005, however, structural changes in China and a growing domestic market led to a reversal of these trends; the amount of emissions “exported” from developed countries to developing countries has actually declined over the past 15 years.

This means that, for many countries, both territorial emissions and consumption emissions (which include any emissions “exported” to other countries) have jointly declined. In fact, on average, consumption emissions have been declining slightly faster than territorial emissions since 2005 in the 32 countries we identify as experiencing absolute decoupling. Figure 2, below, shows the change in consumption emissions (teal) and GDP (red) between 2005 and 2019.  
There is a pretty wide variation in the extent to which these countries have reduced their territorial and consumption emissions since 2005. Some countries — such as the UK, Denmark, Finland, and Singapore – have seen territorial emissions fall faster than consumption emissions, while the US, Japan, Germany, and Spain (among others) have seen consumption emissions fall faster. Figure 3 shows reductions in consumption and territorial emissions for each country, with the size of the dot representing the size of the population in 2019.  
Absolute decoupling is possible. There is no physical law requiring economic growth — and broader increases in human wellbeing — to necessarily be linked to CO2 emissions. All of the services that we rely on today that emit fossil fuels — electricity, transportation, heating, food — can in principle be replaced by near-zero carbon alternatives, though these are more mature in some sectors (electricity, transportation, buildings) than in others (industrial processes, agriculture).

This is not to say that infinite economic growth is desirable (or even possible), particularly given that the global population is expected to start to shrink by the end of the 21st century (and well before that in most currently wealthy countries). There will be some tradeoffs between economic growth and climate mitigation — particularly if the world is to meet ambitious mitigation targets. But it is possible to envision a world that is prosperous, equal, and at net-zero emissions; indeed, all of the future emissions scenarios used by the Intergovernmental Panel on Climate Change (IPCC) do just that.

#### Key to solve disease.

Jackson ‘16 (Kerry, Pacific Research Institute; 12/19/16; Free Market Policies Needed To Incentivize Creation Of New Life-Saving Treatments; https://www.pacificresearch.org/article/free-market-policies-needed-to-incentivize-creation-of-new-life-saving-treatments/)

“Our strongest antibiotics don’t work and patients are left with potentially untreatable infections,” Director Dr. Tom Frieden said when the CDC issued its warning. He asked doctors, hospitals and public health officials to “work together” to “stop these infections from spreading.” The 2014 Report to the President expressed a similar concern: “The evolution of antibiotic resistance is now occurring at an alarming rate and is outpacing the development of new countermeasures capable of thwarting infections in humans. This situation threatens patient care, economic growth, public health, agriculture, economic security and national security.” For those thinking this sort of thing shouldn’t be happening when medical science is more advanced than can almost be conceived, be assured that it is. And unless there are public policy interventions, it’s likely to get worse. “More and more microorganisms will continue to gain resistance to the current drug therapies because (antimicrobial resistance, or AMR) is basic evolution,” Wayne Winegarden writes in the Pacific Research Institute’s newly-released report “Incenting the Development of Antimicrobial Medicines to Address the Problem of Drug-Resistant Infections.” The International Federation of Pharmaceutical Manufacturers says the problem is caused by “a dearth of new antibiotic medicines.” At the same time that there’s been an increase in AMR, there has been “a sharp decline in the development of new antibiotic medicines.” The group reports that only two new classes of antibiotics have been discovered in the last three decades compared to 11 in the previous 50 years. The answers to many medical problems are still not within reach of researchers. But the hazards of AMR can be diminished. Winegarden suggests we begin with public health campaigns that encourage handwashing, which he calls a highly effective and low-cost way to reduce the spread of infection. He further recommends policy that would address the problem of antibiotic overuse and greater use of vaccines to cut the incidents of infection. But Winegarden’s primary concern is establishing the correct incentives for developing new antimicrobial medicines that would be effective against AMR microorganisms. He’s specifically referring to policies “based on a thorough understanding of the disincentives that are currently inhibiting their development.” “These disincentives are well-recognized,” he writes. “Despite the medical need, and despite the generally strong return on investment for many other drug classes, the return on investment for developing new antimicrobial medicines (particularly antibiotics) is too low.” Producing a new drug is a grinding and expensive endeavor. It can take 10 to 15 years to develop a single prescription drug that is introduced to the market, and a company can spend as much as $5.5 billion on research and development for each medication that is eventually approved and prescribed. Less than 2 percent of all projects launched to create new drugs succeed. This is not an environment in which pharmaceutical companies can get too amped up about pursuing new treatments. Yet new drug approvals increased over the last decade. Don’t look for a surge of antimicrobial drugs in that pipeline, though. Winegarden says that particular drug class is among several that “face unique impediments” that serve as disincentives for innovation. To overcome the steep hill that impedes the development of new AMR drugs, lawmakers must implement policies that unleash the incentives of the free market. Policymakers also should look at the 1983 federal Orphan Drug Act and its market-oriented reforms that increased the number of drugs developed to treat rare diseases. More than 400 have been introduced to the market since the law was enacted, compared to fewer than 10 in the 1970s. Put another way, government needs to remove its anchors from the process and let the market do what it does so well. In this case, that’s restoring patients’ health, enriching innovative companies that create jobs, and inspiring biotech start-ups such as the group of Stanford undergraduates that has been capitalized to develop new antibiotics. If the proper incentives are in place, the needed treatments will follow.

#### Emissions prevent Ice Age---extinction.

Whitehouse ’12 [David; 2012; Science Adviser to the Global Warming Policy Foundation; Public Service Europe, “Could Rising CO2 Levels Help Prevent The Next Ice Age?” http://www.publicserviceeurope.com/article/1338/could-rising-co2-levels-help-prevent-the-next-ice-age]

That the trees no longer completely canopy this land is due to mankind as we cleared the forests. That the ice is no longer here is due to global warming. Without doubt, we live in an interglacial period – a warm time between ice ages. There have been many during the current great glaciation. Some have these periods have been warmer than today, many shorter than our current interglacial's duration. The return of the ice would, short of a giant meteor strike, be the biggest disaster to face humanity. Vast swathes of the northern Hemisphere would be frozen. Northern Europe, Asia, Canada and the United States would have extensive regions rendered uninhabitable. Mankind would have to move south. There would be no choice as no technology could stop the ice or allow our high populations to life amongst it. Some believe the return of the ice will not happen for thousands of years, other that the signs could be visible within decades.

But could it be that the greenhouse gasses being pumped into the atmosphere, that many believe are responsible for a recent warming of the planet, might counteract the forces bringing us a new glaciation? Could it be that greenhouse gasses might actually stave off the return of the ice and save the lives of tens of millions, if not civilisation itself? A recent study by scientists at Cambridge University and published in the Journal Nature Geoscience suggests that the carbon dioxide might extend the current interglacial until carbon dioxide levels fall. They believe that the atmospheric concentration of CO2 must be about 240 parts per million before glaciation could start.

Currently, it is about 390 ppm. In a 1999 essay, Sir Fred Hoyle said: "The renewal of ice-age conditions would render a large fraction of the world's major food-growing areas inoperable and so would inevitably lead to the extinction of most of the present human population. We must look to a sustained greenhouse effect to maintain the present advantageous world climate. This implies the ability to inject effective greenhouse gases into the atmosphere, the opposite of what environmentalists are erroneously advocating."

#### Warming unlocks Siberian ag productivity, creating a breadbasket for East Asia.

Parnell ’19 [Maarten; 2019; Founder and Managing Director of Vosbor; The Diplomat, “The Dormant Breadbasket of the Asia-Pacific,” <https://thediplomat.com/2019/02/the-dormant-breadbasket-of-the-asia-pacific/>]

Although some Siberian farmers in the south are anticipated to face production declines due to climate change, the perspectives will improve significantly for the rest of Siberia. With the growing seasons becoming longer and warmer, crop yields are anticipated to improve substantially. Moreover, abandoned cropland and forest areas further north are becoming more attractive for cultivation, with April-July temperatures now on average 1.3 to 2 degrees Celsius higher than in 1960. Nonetheless, (re)cultivation of these lands could release significant amounts of carbon stored in the soil and plants and aggravate climate change. Sustainable intensification of current agricultural lands should therefore have priority over cropland expansion. Substitution of summer fallows, efficient no-till crop rotation schemes, increased water-use-efficiency, and equipment sharing programs are the most cost-effective approaches to a sustainable intensification strategy in Siberia.

The logical destination for Siberian crop surplus is East and Southeast Asia, due to their proximity and large demand. However, in 20 17 only 3.3 percent of all Russian grain exports went to East Asia and 7.8 percent to Southeast Asia. The Russian government is acutely aware of the potential for increased Siberian agricultural exports and has actively pursued foreign policy, regulation and the development of infrastructure to that end. In 2015 it created a free-port zone in Primorsky Krai, the administrative region that borders the Pacific in the east and the Chinese border in the west. Named the Free Port of Vladivostok, its benefits include a free-customs regime for resident companies, lower corporate taxes, fast-track VAT reimbursement, and a simplified visa process for foreigners.

Vladivostok is directly linked to the Trans-Siberian Railway network, connecting the Western Siberian grain belt with the free port over more than 5,000 kilometers. This railway, however, has limited capacity and although there are plans to increase its capacity, the infrastructure network has yet to expand to accommodate this growth. The Free Port zone, which handles mainly energy, metals and mining commodities alongside containers, is also not equipped to efficiently load bulk grain and oilseed. To remedy this, a relatively minor fishing port called Zarubino, at the southern tip of the Free Port zone, was designated to become home to the first grain terminal on the Pacific coast of Russia. The project is largely supported by Chinese investors, who are interested in creating port access for the neighboring Chinese provinces Jilin and Heilongjiang, the country’s largest corn and soybean production areas. Currently, crops from these provinces need to be transported up to 1,000 km by a congested railway to the nearest Chinese port in the Bohai Bay, while Zarubino is a mere 50 km from the border with China. The terminal was to be completed by 2020 and initially slated to have an annual capacity of 40 million tonnes. Due to various setbacks, the project has yet to get off the ground.

Besides infrastructural issues, sparsely populated Siberia also suffers from a lack of skilled labor. To counter this the Russian government has actively supported foreign investment in the region. Last year for example, it has made 1 million hectares of arable land in the Far Eastern Federal District available to foreign buyers, who are normally only eligible for leasehold. Although most of the land is located in remote regions with low productivity, many Chinese buyers indicated interest. Wealthy farmers from China have been moving into the eastern part of Siberia ever since the collapse of the USSR, as centrally planned local economies imploded and agricultural subsidies disappeared. As crop production in some regions of China becomes more difficult in the face of climate change, more Chinese farmers may look north of the border for better opportunities.

Agricultural (land) investments are also attractive to institutional investors, in particular long-term investors like pension funds or sovereign wealth funds, as these investments have historically delivered stable returns, increased diversification, and outpaced inflation. Various institutional investors have committed to Russian agriculture recently, mostly through shareholdings in foreign listed groups focused on farmland acquisition and agribusiness. Among the major funds that invested in Russian farming are Sweden’s AP2 pension fund ($38 billion assets under management or AUM), Dutch pension fund PFZW ($234 billion AUM), California’s CalPERS pension fund ($365.5 billion AUM), Nordea Investment Funds, and insurer Swiss Life. Some investors have even acquired Russian farmland directly, such as New York based hedge fund Och-Ziff Capital and Harvard University’s endowment fund. The most active foreign investors are the large commodity traders and food processors, who invest not only in land and farming, but also in infrastructure (storage and export terminals) and processing (grain milling or oilseed crushing).

Investment risks remain substantial however, as reflected in the overall level of foreign investment in Russia. The risks are not specific to agriculture, but inherent to investing in Russia. Unstable regulation, red tape, corruption, and geopolitical uncertainty are some of the key concerns. More supportive economic policies and a better regulatory framework, as well as public spending on infrastructure would go a long way in improving investment climate in Russia, regardless of economic sanctions.

As surpluses in other growing regions are anticipated to decline, countries will compete for food supplies and put pressure on global prices, which will negatively affect food security worldwide. The underperforming agricultural sector of Siberia has great potential to support the growing demand of Russia’s neighbors in the Asia-Pacific. Local crop production can be increased significantly, especially through sustainable intensification. The existing infrastructure, albeit aging and insufficient for cost-competitive handling of agricultural bulk, has the potential to facilitate large agricultural exports eastward. Like Catherina the Great and her grandson Alexander I, who both successfully promoted the immigration of vast numbers of German farmers to areas that were sparsely populated and transformed them to what remain today the most productive agricultural regions of Russia and Ukraine, the current Russian government should consider policies that will make it more attractive for (foreign) investors to settle in Siberia if it earnestly wants to unlock the agricultural potential of the region. Siberia could become the breadbasket of the Asia-Pacific and boost global food security in the process.

#### Increasing Asian food supply prevents crises that escalate to World War III.

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World War III is unimaginable for many, but some experts believe that not only is this degree of global conflict imminent, but it may be instigated not by military tensions, oil and gas, or nuclear threats, but instead by, of all things, food.

As it stands, countries across the globe are enduring food crises, and the U.N.’s Food & Agriculture Organization (FAO) estimates that about 840 million people in the world are undernourished, including the one in four children under the age of 5 who is stunted because of malnutrition.

Assistant director-general of U.N. FAO Asia-Pacific Hiroyuki Konuma told Reuters that social and political unrest, civil wars, and terrorism could all be possible results of food crises, and “world security as a whole might be affected.” Such consequences could happen unless the world increases its output of food production 60% by mid-century. This includes maintaining a stable growth rate at about 1% to have an even theoretical opportunity to circumvent severe shortages. These needs are due to the growing global population, which is expected to reach 9 billion by 2050 while demand for food will rise rapidly.

Where the problems lie

Exacerbating this issue is the fact that the world is spending less on agricultural research, to the dismay of scientists who believe global food production may not sustain the increased demand. According to American Boondoggle, “The pace of investment growth has slowed from 3.63 percent per year (after inflation) during 1950–69, to 1.79 percent during 1970–89, to 0.94 percent during 1990– 2009.” Decreased growth in agricultural research and development spending has slowed across the world as a whole, but it is even slower in high-income countries.

Water scarcity is another problem, including in major food-producing nations like China, as well as climate change. Extreme weather events are having a severe effect on crops, which have been devastated in countries like Australia, Canada, China, Russia, and the U.S., namely due to floods and droughts. An Intergovernmental Panel on Climate change recently warned that climate change may result in “a 2% drop each decade of this century,” according to RT.

Rising food costs also contribute to poor food security across the world as prices remain high and volatile. Higher food costs inhibit lower socioeconomic people’s access to food, which contributes to the FAO’s disturbing figure of global malnutrition. In addition to an inability for people to feed themselves, poverty can also reduce food production, such as some African farmers being unable to afford irrigation and fertilizers to provide their regions with food.

Still another issue for decreased food production is the fact that many farmers are turning crops like soy, corn, and sugar into sources for biofuel rather than edible consumption, which means these foods are taken away from people to eat.

Could these shortages lead to a major global conflict?

Studies suggest that the food crisis could begin as early as 2030, just a short 15 years from now, particularly in areas such as East Asia and Sub-Saharan Africa. Both regions have significant problems with domestic food production.

Some experts believe that, to secure enough food resources for their populations, countries may go to war over the increasingly scarce food supply. This could be due in part to warring parties blocking aid and commercial food deliveries to areas supporting their enemies, despite the fact that such a practice breaks international humanitarian law.