# 1NC vs Peninsula RM

### 1NC – off

#### CP: The appropriation of outer space by private entities is unjust except for satellite broadband services

#### Hold the line – they gave us CP and DA in CX

### 1NC – off

#### Starlink is key to rural broadband expansion

Weinschenk 2/25 [(Carl, IT and telecom journalist for Telecompetitor, Teleco Transformation, and IT Business Edge) “Report: Starlink Looks Very Promising for Rural Broadband,” Telecompetitor, 2/25/2021] JL

SpaceX’s Starlink satellite broadband service has the potential to be a game changer for rural broadband, according to an analysis by PCMag of Starlink speeds. The analysis is based on beta tester data exclusively provided to it by Ookla Speedtest.

The site looked at data from rural, suburban and urban areas. Among its more than 10,000 users in its semi-public beta were “a perplexing” number in urban and suburban areas where a variety of high-speed options already are available. The story cites Chicago, Seattle and Minneapolis as places where there were testers, despite readily available alternatives.

The site compared download speeds against other fixed service providers in 30 counties with at least 30 samples in any month from December 30 to February 24. The counties in which the fixed providers had the biggest speed advantage over Spacelink were urban or suburban: Los Angeles and Santa Clara counties, CA; Cook County, IL; King County, WA and Washington County, MN.

It is in rural areas that Starlink shines, according to the research. The five counties in which Starlink had the biggest download speed advantage over the fixed group were rural: Vilas County, WI; Ravali County, MT; Waldo County, ME; Okanogan County, WA and Lamoile County, VT.

The number of counties in which Starlink beat the fixed providers and those in which the fixed providers beat Starlink appeared to be about equal, as was the speed differential.

“Our own analysis shows that Starlink will make the biggest difference in rural, low-density, low-population counties with few options other than lower-quality satellite services,” wrote Sascha Segan, author of the PCMag article about Startlink rural speeds.

#### Broadband is key to precision agriculture transition

ABI 19 [(American Broadband Initiative, a leading force in driving changes across Federal Agencies to identify and remove barriers to broadband access and leverage public assets and resources to expand our Nation’s broadband infrastructure capacity.) “A Case for Rural Broadband,” The United States Department of Agriculture, 4/2019] BC

HOW E-CONNECTIVITY WILL TRANSFORM THE BUSINESS OF AGRICULTURE

Across the agricultural production cycle, farmers and ranchers can implement digital technologies as other modern businesses are doing, enhancing agriculture by driving decision-making based on integrated data, automating processes to increase operational efficiency, improving productivity with tasks driven by real-time insights, augmenting the role of management in the business of farming, and creating new markets with extended geographic reach.

These patterns of digital transformation create fundamental shifts in agricultural production, developing new ways of working that make the industry more productive, attractive, and financially sustainable for farmers and ranchers. Tech companies which stand to benefit from industry transformation continue to capitalize on these shifts by developing new technologies, which according to one recent study, may help position themselves to capture a portion of an estimated $254 billion to $340 billion in global addressable digital agriculture market.13

BUSINESS MANAGEMENT shifts decisionmaking from instinct to integrated data

Precision Agriculture is transforming the way producers collect, organize, and rely on information to make key decisions. Traditionally, producers’ long-term experiences have created a competitive advantage: years of experiments have produced insights and instincts about the land they have farmed and the animals they have raised. But the volume of data that is possible

to collect today can accelerate that learning curve, helping producers learn faster and more rapidly adapt to market shifts—particularly on new fields and with new animals—and creating more nuanced insights, enabling them to act on leading indicators. This creates a disparity between producers who can utilize high-speed Internet service and those who cannot. Examples include the ability to do the following:

create decision tools to help farmers and ranchers estimate the potential profit and economic risks associated with growing one particular crop over another • decide which fertilizer is best for current soil conditions • apply pesticides in targeted areas of the field, to control pests rather than applying pesticides over the entire field • use limited water resources more effectively • respond to findings of sensors that monitor animal health and nutrition

Better choices about what, where, and when to plant, fertilize, and harvest—or breed, feed, and slaughter—can drive above-average returns by removing unrecognized inefficiencies and scaling insights.

DIGITIZATION shifts supply chain management and resource allocation from generic to precise

Precision Agriculture helps make the business of farming more efficient by minimizing inputs— such as raw materials and labor—and maximizing outputs.

For example, previous research has found that 40 percent of fields are over-fertilized, which not only inflates the cost of inputs but also results in 15 percent–20 percent yield loss suffered from improper fertilizer application.14 Precise application of inputs, such as fertilizer, herbicides, and pesticides, allows farmers to adjust inputs to location-based characteristics and use exact amounts needed, which saves money and increases sustainability due to more efficient resource stewardship. Improved fertilizer, soil, and water use can significantly improve water quality with less runoff and reduce climate gas emissions, which is important since agriculture accounts for 10-15 percent of worldwide emissions.15 Despite reductions in necessary inputs, Next Generation Precision Agriculture helps maintain or increase yields, leading to significant gains in efficiency14.

Real-time insights also improve logistics. When growing melons, for instance, real-time data can help farmers overcome challenges in storing and shipping their products. Melons should be stored in an optimal refrigeration environment to minimize spoilage, and real-time precision sensors can reduce spoilage by alerting staff to suboptimal variations in temperature and humidity, allowing the execution of remedies before major losses occur. When refrigerated storage is full or the market price is at a peak, the “Internet of Things” can provide real-time information about where trucks are located and locating customers to market products to help make the sale.

LABOR EFFICIENCY boosts productivity by automating routine processes and enabling real-time response

Connected devices equip farmers with a clear picture of their operations at any moment, making it possible to prioritize tasks more effectively and triage the most pressing issues. While routine inspection and scouting has typically been a regular part of farm management and has increased farm profitability14, connected technologies can track, sense, and flag where a producer should focus their time and attention that day. Similarly, e-connectivity has allowed rural farms to access new training resources and high-skilled labor that has not been previously available.

#### Food insecurity causes state collapse, nuclear war, and terror – extinction

DeFeo 17 [(Michael, Regional Organizing Director at Arizona Democratic Party who graduated in 2019 with a bachelor’s degree in political science from Gettysburg College) “Food Insecurity and the Threat to Global Stability and Security in the 21st Century” Inquires Journal, 2017] BC

Poor Institutional Capacity

Although the developed world experiences food insecurity, it is the lack of infrastructure and government institutions in developing countries that contribute to civil wars and state fragility. Foreign exchange shortages can provoke food and fuel scarcities that force governments to spend less on essential services and public goods. Accordingly, citizens see their medical and educational entitlements melt away. Such circumstances create breeding grounds for internal conflict.

All violent conflicts destroy land, water, and social resources for food production. Developing countries do not have massive industrial machines that can remedy such losses, therefore, the population will suffer. Food insecurity is a recruitment tool for violent extremist groups. Promising food and water to a starving population, especially in urban areas, makes recruiting young and disgruntled youth easier (Messer & Cohen, 2015). Syria had limited institutional capacity to deal with the mass displacement, and that lead to a civilian revolt and recruitment into the Islamic State.

Countries that fail to provide their people with basic services often experience gross economic inequality, and even human-rights violations, as was the case in both Syria and Sudan. Both countries are classified as Least Developed Countries (LDCs). LDCs are distinguished not just by their widespread poverty, but also by their structural weaknesses in economic, institutional, and human resources that make them unable to maintain stability during a drought. The combination of drought and political instability or violence led to famine in Somalia (another LDC) in 2011. Even with urgent humanitarian action, the country still plunged into chaos and violence (Messer & Cohen, 2015). Severe drought, like Somalia's, may result in crop failure in major food producing areas, which in turn is a significant threat to social stability and peace (Wischnath, 2014).

Sometimes droughts of exceptional severity (and the civil unrest that follows) are attributed to climate change, especially in particularly arid regions. Scholars are divided on whether climate change actually impacts civil conflict. That is why African countries like Somalia and Sudan are prime case studies. Africa has the lowest percentage of irrigated land in the world. Agriculture is the most important sector of most African countries. Very high percentages of civilians in African countries live in rural areas. Those characteristics combined with low economic and state capacity make African, particularly sub-Saharan African countries the most vulnerable to climate change and civil instability. Africa experiences more civil conflict than other parts of the world, therefore, it is possible to argue that a lack of climate variability effect on civil conflict in Africa would make it unlikely to cause civil conflict in other parts of the world (Koubi et al., 2012). Secretary-General of the United Nations, Ban Ki-moon attributed the conflict in Darfur to an ecological crisis arising “at least in part from climate change” (Ki-moon, 2007). The Fourth Report of the Intergovernmental Panel on Climate Change assessed that climate change will continue to worsen. As it does, it will increase food shortages, which may lead to conflict (AR4, 2007). The report also stated that forced displacement and rising social instability is the most likely result of food insecurity. This is almost exactly what happened in Syria. The first step towards conflict might be food riots, which often occur during a food shortage or when there is an unequal distribution of food. These are usually caused by food price increases, food speculation, transport problems, or extreme weather. In 1977, Egyptians became so desperate for food that they attacked shops, markets, and government buildings just to obtain bread and grain (Paveliuc-Olariu, 2013).

Moreover, civil war can create economic opportunities for certain groups, so they try to avoid resolving the conflict. Urban elites in Somalia profited tremendously off of internal conflict because of the absurd amount of foreign aid that was pumped into the country and then largely stolen (Shortland, Christopoulou, & Makatsoris, 2013). Once a country experiences a food shortage, it may lead to protests, riots, and violence. This all contributes to state instability, but it is not the state alone that suffers. If one country fails, it creates a crisis that could destabilize an entire region.

State Failure and the Threat to Regional Stability

Although fragile governments in developing countries are at a heightened risk for internal conflict that could topple them, that risk also threatens the country’s neighbors. After the Soviet Union collapsed in 1991, Afghanistan found itself alone in regional trade. Without a guaranteed source of cereal, the government had to turn to Iran and Pakistan for support in order to avoid its own collapse (Clarke, 2000). Unlike Afghanistan, many other developing countries have been unable to work together on food and water security. Thirteen of the twenty-two members of the Arab League rank among the most water-scarce nations on the planet. Food cannot be grown without water. The majority of the world is engaged in some sort of agreement with neighboring countries to share water supplies, but thirty-seven countries still do not share their water resources (El Hassan, 2014). Lack of cooperation can cause civil as well as interstate conflict. South Sudan legally has no share of the Nile River and the effects of that lack of water access have been mass starvation and violence.

The effects of climate change, water shortages, and mass migrations have resulted in acute food insecurity not just in Syria, but across the region (El Hassan, 2014). Food insecurity, plus an increase in the prices of staple foods have destabilized much of the area. The Arab Spring was the beginning of multiple conflicts that have affected countries like Syria, Egypt, and Libya. In Syria, food insecurity resulted in mass violence and has now created an international crisis involving multiple world powers.

Food insecurity is such a threat to entire regions because people cannot live without food and people want to live. When a region experiences food scarcity and that population feels threatened by hunger, it will relinquish dependency on any political authority and take up arms in order to ensure its well-being (Paveliuc-Olariu, 2013). This is human survivalism. It is important for developing countries in areas that are at risk for food insecurity to formulate policy that ensures aid goes to the food insecurity hotspots so as to maintain stability.

South Sudan experienced what happens when countries do not work together to feed their people. After gaining its independence from Sudan in 2011, 360,000 South Sudanese refugees returned to the country. This influx of human beings, coupled with drought conditions exacerbated economic strain and drove food prices up. The increases were the result of trade restrictions between Sudan and South Sudan. The overall reason for the food crisis, however, was the government's preoccupation with fighting a political and quasi-ethnic civil war rather than negotiating fair access to the Nile River (Tappis et al., 2013). Because of South Sudan’s weak institutions, it has done little to address the food shortage. That inability to solve the problem fuels insurgent recruitment that continues the bloodshed in South Sudan. The conflict is keeping regional rivalries alive with Uganda, Kenya, Ethiopia, and Sudan; all of whom have attempted to intervene in South Sudan militarily to bring about stability (Council on Foreign Affairs 2016). Aside from South Sudan, multiple conflicts across Africa are consuming massive amounts of diplomatic, political, and humanitarian resources in a region that faces a multitude of threats.

South Sudan, Somalia, and Syria are all failing states that are experiencing huge food shortages, humanitarian crises, and most importantly, extreme civil violence. South Sudan is mired in a civil war. Somalia is controlled by warlords and terror organizations. Syria has both of those problems. Conflict has turned these countries into “breeding grounds of instability, mass migration, and murder” rather than sovereign states with a monopoly on violence and control over their borders (Rotberg, 2002). To be sure, failing states are a concern because of their ability to destabilize entire regions, but states at risk for failure are also very important. Countries like Pakistan that are politically unstable and have food and water shortages could result in uncontrollable civil upheaval (The Fund for Peace, 2016).

Global Consequences of State Failure

Failing states and destabilized regions are not just a problem for the developing world. They are a very real concern for the United States and other developed countries as well. The Islamic State fed off of the Syrian Civil War and helped destabilize Iraq, Syria, Libya, and even Afghanistan and the Philippines. They have at also inspired terror attacks in Europe and the United States. They are a threat to both the developed and developing world. State instability allows them to recruit and train without government interference, which in turn allows them to plan attacks outside the region. An important source of income for the Islamic State has been agriculture from Iraq and Syria. While this revenue has received less media attention than oil extraction, it is still an important part of their economy (Jaafar & Woertz, 2016). It is also a key aspect of their political legitimacy because it allows them to feed their soldiers and those they control. Controlling some of the most fertile regions of the two countries has also helped the Islamic State starve off areas that have resisted them (Jaafar & Woertz, 2016). If Syria or Iraq are ever going to stabilize, those breadbaskets must be retaken and the food must reach the civilians in the cut off areas.

In the 20th century, state failure had few implications for international peace and security. Thanks to globalization, that is no longer the case. Failed states pose a threat to themselves, their neighbors, and the entire international community (Rotberg, 2002). Islamic State - inspired terror attacks in Belgium and France are a direct result of state collapse in Syria and Iraq. Preventing states from failing, rather than having to intervene militarily when they do, ought to be a top priority in the foreign policy of rich nations. Although the situations in Syria, Somalia, and South Sudan seem beyond repair, nation-building projects have had success in the past. Tajikistan, Lebanon, Cambodia, Kosovo and East Timor are all examples of relatively successful attempts to put failing states back on the right track (Rotberg, 2002). Developed countries must have the political will to ensure that people in developing countries are fed so that they remain pacified. It is often severe food insecurity that precedes ethnic or religious violence, as has been the case in South Sudan, therefore, adequate food is paramount to avoiding humanitarian crises that accompany ethnic and sectarian conflict (The Economist, 2016).

While it is true that many developed countries, especially the United States, are weary of providing so much financial aid and intervening militarily in war-torn, developing countries, it is imperative that the rich do not abandon the poor to a fate of internal destruction. Money must not be thrown blindly towards humanitarian crises and military intervention must be the last resort. Developed countries provided $1.4 billion for humanitarian aid in South Sudan in its first year of independence, but without specific conditions, that money went to kleptocrats rather than infrastructure projects or public services (The Economist, 2016).

Paying to help developing nations is expensive and will continue to be so. Afghanistan and Iraq are proof of that. But the war on terror, repeated military intervention, and humanitarian aid are expensive as well. In 2002, Robert Rotberg suggested that a new Marshall Plan was required for places like Afghanistan, the DRC, Sierra Leone, Somalia, and Sudan. If it is true that food and water security are the keys to keeping relative peace in new and developing countries and their collapse threatens the safety of the developed world, it seems logical that assisting those countries is wise.

In 1999, Susan L. Woodward argued that military leaders focus too much on force versus force combat rather than the issues of insurgency and terrorism in failed states. In 2017, military leaders have adjusted their strategies accordingly. Woodward believed that globalization made states less important, but their failure would still be felt around the world. Failed states cannot exercise their monopoly on violence and they cannot control their borders, thus threatening more than just the failed state (Woodward, 1999). Because state failure is so consequential, the United States military must continue to look into measures it can take to prevent it.

The Threat of the Future

Finally, the threats from food shortages in South Sudan, Somalia, Afghanistan, Iraq, and Syria are important to the United States and the international community at large, but there is one country that, while it is not a failing state right now, could easily become one if the wealthy nations of the world do not ensure its stability. That country is Pakistan. The Fund for Peace ranked Pakistan as the 14th most fragile state in the world in 2016, giving it a “High Alert” designation for state failure (The Fund for Peace, 2016). Its Demographic Pressure Indicator was an 8.9 - 10.2 Although it improved by one-tenth of a point last year, its decade trend is worse by seven-tenths of a point and its five-year trend is worse by four-tenths of a point, suggesting that the food situation is actually worsening overall (The Fund for Peace, 2016). If internal conflict and potential state failure at its most basic level begins with food and water insecurity, then Pakistan could become a real problem very soon.

Considering the risk of state failure, Pakistan poses the greatest threat to the rest of the world because of the existence of nuclear weapons within the country. Pakistan is not a member of the Nuclear Non-Proliferation Treaty, yet it has about 120 nuclear weapons. It also has a Shaheen 1A ballistic missile that can reach targets 550 miles away (Pakistan Defence, 2015). Should a food crisis arise in Pakistan that results in civil war and governmental collapse, those weapons could end up in the hands of a group that intends to use them maliciously as an act of terror. That prospect should be incentive enough for the developed countries to realize that they cannot and must not leave food insecure countries to devour themselves.

While it is difficult to argue that food insecurity immediately and directly causes civil conflict, there is no denying that people need food and water and will fight to survive. In South Sudan, ethnic and political armies fight one another. In Syria, rebels and government forces fight each other while also fighting the Islamic State. And in Somalia, warlords and their armies fight. The Syrian Civil War began six years ago after a water shortage forced thousands of migrants into urban centers. Developing countries tend to be most affected by climate change, poor governance, and food price increases. Therefore, they are the most prone to instability that may lead to outright violence. Without the wherewithal to handle civil conflict, these countries may become fragile or even failing states. Once that happens, they represent a threat not just in their region of influence, but the whole world. That is why the developed Western nations must pay attention and provide aid to the developing world in order to maintain stability. There will be more food crises in developing countries in the future, but if the North has the strength to continue aiding the South, perhaps it will be able to curb mass starvation and avoid the horrendous violence that consumes starving countries.

#### Turns the aff -- unproductive agriculture is the largest threat to global biodiversity

Aldred 16 [(Jessica, the deputy and production editor of theguardian.com/environment and writes on wildlife and conservation.) “Agriculture and overuse greater threats to wildlife than climate change – study”, The Guardian 8/10/2016] BC

Agriculture and the overexploitation of plants and animal species are significantly greater threats to biodiversity than climate change, new analysis shows.

Joint research published in the journal Nature on Wednesday found nearly three-quarters of the world’s threatened species faced these threats, compared to just 19% affected by climate change.

It comes a month before the International Union for Conservation of Nature (IUCN) hosts its annual summit in Hawaii to set future priorities for conservation.

The team from the University of Queensland, the Wildlife Conservation Society (WCS) and the IUCN assessed 8,688 near-threatened or threatened species on the IUCN’s “red list” against 11 threats: overexploitation, agricultural activity, urban development, invasion and disease, pollution, ecosystem modification, climate change, human disturbance, transport and energy production.

It found that 6,241 (72%) of the studied species were affected by overexploitation – logging, hunting, fishing or gathering species from the wild at rates that cannot be compensated for by reproduction or regrowth.

These included the Sumatran rhinoceros, western gorilla and Chinese pangolin – all illegally hunted for their body parts and meat – and the Bornean wren babbler, one of 4,049 species threatened by unsustainable logging.

Some 5,407 species (62%) were threatened by agriculture alone. The cheetah, African wild dog and hairy-nosed otter are among the animals most affected by crop and livestock farming, timber plantations and aquaculture.

Chart, timeline

Description automatically generated

At the same time, the analysis showed, anthropogenic climate change – including increases in storms, flooding, extreme temperatures or extreme drought and sea-level rise – is currently affecting just 19% of species listed as threatened or near-threatened, and was ranked seventh among the 11 threats.

Hooded seals are among the 1,688 species affected. These have declined by 90% in the north-eastern Atlantic Arctic over the past few decades as a result of extensive declines in regional sea ice, and the availability of sites for resting and raising pups. The common hippopotamus and leatherback turtle are also being affected by climate-related droughts and high temperatures.

The analysis comes a month before representatives from government, industry and NGOs meet in Hawaii for the annual IUCN World Conservation Congress. High on the agenda will be defining a sustainable path for translating climate and development agreements – including the 2015 Paris agreement – into conservation actions.

But the authors say it is crucial that efforts to address climate change do not overshadow more immediate priorities for the survival of the world’s flora and fauna. Delegates must focus on proposing and funding actions that deal with the biggest threats to biodiversity, they urge.

“Addressing these old foes of over-harvesting and agricultural activities are key to turning around the biodiversity extinction crisis,” said lead author, Sean Maxwell of the University of Queensland, Australia. “This must be at the forefront of the conservation agenda.”

But the authors say there are solutions to alleviate the harm caused by overexploitation and agricultural activities, such as sustainable harvest regimes, hunting regulations and no-take marine protected areas, international forums such as Cites and public education to reduce demand.

Dr James Watson, co-author of the study from the WCS and the University of Queensland, said: “History has taught us that minimising impacts from over-harvesting and agriculture requires a variety of conservation actions but these can be achieved.

“Actions such as well-managed protected areas, enforcement of hunting regulations, and managing agricultural systems in ways that allow threatened species to persist within them, all have a major role to play in reducing the biodiversity crisis. These activities need to be well funded and prioritised in areas that will reduce threat.”

#### Technological advancements in agriculture solves – they increase biodiversity and prevent environmental damage

Capgemini 18 [(Capgemini is a French multinational corporation that provides consulting, technology, professional, and outsourcing services.) “Saving the planet with digital farming – our discussion with Tobias Menne (Global Head Digital Farming, BASF)” Capgemini, 5/25/2018] BC

Digital farming matters. Why? Because farmers are tasked with feeding a growing world population, expected to reach 10 billion by 2057 according to the UN, while dealing with the consequences of climate change. To achieve that, they need to embrace the digitization of agriculture.

I recently sat down with Tobias Menne, head of Global head Digital Farming at BASF to discuss this important topic within modern agronomics. In the final blog of this two-part series, we discuss the immense potential of digital farming. What can change and will it change?

The end of information asymmetry

In the previous blog, we defined digital farming as the gathering, combining, and sharing of relevant and scalable data to optimize and transform agronomics. The immense amounts of data offer insight, understanding, and quick learnings. This way it can help to battle global food and climate challenges.

Tobias elaborates: “What digital farming offers is insight into what is happening on the field. To understand whether or not a certain weed or disease is a threat to the crop. And all this information is available through smartphones, at a very low price point.”

Digital farming is particularly revolutionary for farmers in Africa and South East Asia where over 80% of farmers are small holders. Tobias: “These farmers not only gain a lot because they generally are further away from agronomic optimum compared to larger farms in the West. They mostly benefit because digital technology removes the information asymmetry that currently plagues them.”

Take the Himalayas, for instance. Because of limited biology training and a lack of qualified people in rural areas, farmers are often unaware of the types of weeds that grow on their fields. Thanks to digital farming, this is changing rapidly.

Farming with confidence

Digitalization transforms decision-making practices in agronomics. “In the past, farmers invested heavily in labor or crop protection to improve their agronomic situation,” Tobias explains. “They still need to do that. The difference, however, is that now they can be really sure that what they are doing is the right thing. So rather than increasing investments, they simply make smarter decisions. This is why digitization is so powerful.”

“Farmers will be able to embrace new technology much more confidently than in the past. And they can better deal with new weather phenomena and new situations. Because they profit from the learnings of other farmers around them.”

“Climate change makes farm life more daring and more challenging. That requires much better information on how to farm, what actions to take. Due to climate change we see weeds entering new territories. We already observe the migration of insects, for instance. Digitalization enables us to learn quicker, to combat those new developments.”

In other words: digital farming allows adaptable farming. Farmers can anticipate new situations better and faster. A true necessity in this time of climate change.

Save the planet

Because farmers can farm with more confidence, they are also able to grow a greater variety of crops. This will increase global biodiversity.

“Farming is often criticized for its perceived low level of biodiversity,” Tobias says. “You see a lot of corn and soy, and not a lot of variation within those crops. Industrial farming is so homogeneous because farmers wanted to reduce their complexity of decision making. If we start to trust systems for good agronomic decision making, adding crops and increasing functional biodiversity will no longer drive up the complexity of farms.”

This means that niche crops like cassava, quinoa, and buckwheat will become more widespread. And that, in turn, means we will find more diverse products in our local shops.

Digital farming can decrease the negative impact of farming tremendously. Next to improved biodiversity and water quality, the use of fewer crop protection products is beneficial for the environment. Tobias gives an example:

“I’m excited about smart sprayers. In the near future, these will go over the field and identify each weed with their camera. Their nozzles only open when they detect certain weeds. This will not only reduce the amount of product used per square meter, it also allows for species of rare weeds to be preserved.”

Trust me, I’m a farmer

As consumers we want to have food that is healthy for us, that has not impacted the environment in a negative way, that ideally was grown in our vicinity, and that is tasty. More importantly, we want to trust the information farmers, distributors, and retailers provide about our food. Through transparency, digitalization can increase or rebuild that trust.

“I would love to buy the fresh produce”, Tobias says, “knowing that I am contributing to a healthy community in the areas where it was grown. At the moment, I have little opportunity to do so. Sure, I can buy Fair Trade coffee or bananas, but for other products this is really challenging. I believe we can use digital farming to create more transparency on where food comes from and how it empowers the community that produce it.”

By reducing the impact farming has on the environment, digital farming can have a positive impact on consumers’ perception of food and food production, contribute to a healthy ecosystem, and offer insight into the food production chain.

### 1NC - off

#### US leads the private space sector now but other countries sectors are growing— US private sector is key to growth

Harding 7/16 [(Luke, a Guardian foreign correspondent. His book Shadow State is published by Guardian Faber. Click here for Luke's public key) “The space race is back on – but who will win?” The Guardian, 7/16/21. <https://www.theguardian.com/science/2021/jul/16/the-space-race-is-back-on-but-who-will-win>] RR

Half a century on, space has opened up. It is less ideological and a lot more crowded. About 72 countries have space programmes, including India, Brazil, Japan, Canada, South Korea and the UAE. The European Space Agency is active too, while the UK boasts the most private space startups after the US.

Space today is also highly commercial. On Sunday Richard Branson flew to the edge of space and back again in his Virgin Galactic passenger rocket. On Tuesday, Branson’s fellow billionaire Jeff Bezos is due to travel in his own reusable craft, New Shepard, built by the Amazon founder’s company Blue Origin and launched from west Texas.

Non-state actors play an increasingly important role in space exploration. Elon Musk’s SpaceX vehicles have made numerous flights to the International Space Station (ISS), and since last year they have transported people as well as cargo. Later this year Musk is due to send his own all-civilian crew into orbit – though he isn’t going himself.

Even so, space still reflects tensions on Earth. “Astropolitics follows terrapolitics,” says Mark Hilborne, a lecturer in defence studies at King’s College London. Up there anything goes, he adds. “Space governance is a bit fuzzy. Laws are few and very old. They are not written for asteroid mining or for a time when companies dominate.”

The biggest challenge to US space supremacy comes not from Russia – heir to the Soviet Union’s pioneering space programme, which launched the Sputnik satellite and got the first human into space in the form of Yuri Gagarin – but from China.

In 2011 Congress prohibited US scientists from cooperating with Beijing. Its fear: scientific espionage. Taikonauts are banned from visiting the ISS, which has hosted astronauts from 19 countries over the past 20 years. The station’s future beyond 2028 is uncertain. Its operations may yet be extended in the face of increasing Chinese competition.

In its annual threat assessment this April, the office of the US Director of National Intelligence (DNI) described China as a “near-peer competitor” pushing for global power. It warns: “Beijing is working to match or exceed US capabilities in space to gain the military, economic, and prestige benefits that Washington has accrued from space leadership.”

The Biden administration suspects Chinese satellites are being used for non-civilian purposes. The People’s Liberation Army integrates reconnaissance and navigation data in military command and control systems, the DNI says. “Satellites are inherently dual use. It’s not like the difference between an F15 fighter jet and a 737 passenger plane,” Hilborne says.

Once China completes the Tiangong space station next year, it is likely to invite foreign astronauts to take part in missions. One goal: to build new soft-power alliances. Beijing says interest from other countries is enormous. The low Earth orbit station is part of an ambitious development strategy in the heavens rather than on land – a sort of belt and rocket initiative.

According to Alanna Krolikowski, an assistant professor at the Missouri University of Science and Technology, a “bifurcation” of space exploration is under way. In one emerging camp are states led by China and Russia, many of them authoritarian; in the other are democracies and “like-minded” countries aligned with the US.

Russia has traditionally worked closely with the Americans, even when terrestrial relations were bad. Now it is moving closer to Beijing. In March, China and Russia announced plans to co-build an international lunar research station. The agreement comes at a time when Vladimir Putin’s government has been increasingly isolated and subject to western sanctions. In June, Putin and his Chinese counterpart Xi Jinping renewed a friendship treaty. Moscow is cosying up to Beijing out of necessity, at a time of rising US-China bipolarity.

These rival geopolitical factions are fighting over a familiar mountainous surface: the moon. In 2019 a Chinese rover landed on its far side – a first. China is now planning a mission to the moon’s south pole, to establish a robotic research station and an eventual lunar base, which would be intermittently crewed.

Nasa, meanwhile, has said it intends to put a woman and a person of colour on the moon by 2024. SpaceX has been hired to develop a lander. The return to the moon – after the last astronaut, commander Eugene Cernan, said goodbye in December 1972 – would be a staging post for the ultimate “giant leap”, Nasa says: sending astronauts to Mars.

Krolikowski is sceptical that China will quickly overtake the US to become the world’s leading spacefaring country. “A lot of what China is doing is a reprisal of what the cold war space programmes did in the 1960s and 1970s,” she said. Beijing’s recent feats of exploration have as much to do with national pride as scientific discovery, she says.

But there is no doubting Beijing’s desire to catch up, she adds. “The Chinese government has established, or has plans for, programmes or missions in every major area, whether it’s Mars missions, building mega constellations of telecommunications satellites, or exploring asteroids. There is no single area of space activity they are not involved in.”

“We see a tightening of the Russia-China relationship,” Krolikowski says. “In the 1950s the Soviet Union provided a wide range of technical assistance to Beijing. Since the 1990s, however, the Russian space establishment has experienced long stretches of underfunding and stagnation. China now presents it with new opportunities.”

Russia is poised to benefit from cost sharing, while China gets deep-rooted Russian technical expertise. At least, that’s the theory. “I’m sceptical this joint space project will materialise anytime soon,” says Alexander​ Gabuev, a senior fellow at the Carnegie Moscow Centre. Gabuev says both countries are “techno-nationalist”. Previous agreements to develop helicopters and wide-bodied aircraft saw nothing actually made, he says.

The Kremlin has been a key partner in managing and resupplying the ISS. US astronauts used Russian Soyuz rockets to reach the station, taking off from a cosmodrome in Kazakhstan, after the Space Shuttle programme was phased out. But this epoch seems to be coming to an end as private companies such as SpaceX take over. “I expect US-Russian relations to get worse,” Gabuev says, adding that Americans “no longer need” Russia’s help.

Moscow’s state corporation for space activities, Roscosmos, has faced accusations of being more interested in politics than space research. Last month the newspaper Novaya Gazeta reported that Roscosmos’s executive director of manned space programmes, former cosmonaut Sergei Krikalev, had been fired. His apparent crime: questioning an official decision to shoot a film on the Russian section of the ISS.

The film, Challenge, is about a female surgeon operating on a cosmonaut in space, and has been backed and financed by Roscosmos . It stars Yulia Peresild, who is due to head to space in October with director Klim Shipenko. The launch seems timed to beat Tom Cruise, who is due to shoot his own movie on board the ISS with director Doug Liman.

Krikalev, who spent more than 800 days in space and was in orbit when the USSR collapsed, apparently told Roscomos’s chief, Dmitry Rogozin, that the film was pointless. Rogozin – its co-producer – has called on the west to drop sanctions in return for Russia’s cooperation on space projects. Putin, Rogozin’s boss, appears to not be very interested in other planets, though, and is more concerned with nature and the climate crisis these days.

“Space is one of the areas that has traditionally transcended politics. The Mir space station worked at a time of east-west tensions. There was symbolic cooperation. Whether this will continue in the future is really up for debate,” Hilborne says. “The US is very sensitive about what happens in space.”

Most observers think the US will remain the world’s pre-eminent space power, thanks to its innovative and flourishing private sector. China’s Soviet-style state programme appears less nimble. Despite ambitious timetables, and billions spent by Beijing, it is unclear when – or even if – an astronaut will return to the moon. The 2030s, perhaps? Will they be American or Chinese? Or from a third country?

It may well be that the first person to boldly go again doesn’t merely represent a nation or carry a flag. More likely, they will emerge from a lunar lander wearing a spacesuit with a SpaceX logo on the back – a giant leap not only for mankind, but for galactic marketing.

#### Continued success of private space companies is key to secure space for the US.

Macias & Sheetz 2/3 [(Amanda, covers global trade and foreign policy for CNBC. She joined CNBC’s Washington bureau in 2018 from CBS Radio. Amanda studied Broadcast Journalism and Finance at the University of Missouri. She is a Knight-Bagehot Fellow in Economics and Business Journalism at Columbia University in New York.) (Micheal, Space Reporter) “Space Force general says success of private companies like SpaceX helps U.S. secure the space domain” CNBC, 2/3/21. <https://www.cnbc.com/2021/02/03/space-force-general-america-owns-space-with-help-from-elon-musks-spacex.html>] RR

WASHINGTON – The nation’s top general leading the U.S. military mission in space said Wednesday that he is excited about Wall Street and billionaire investment in the space industry, which has sparked renewed interest in the field among Americans and strong recruitment at the Pentagon’s youngest branch.

“There is a ton of excitement across America on space in all sectors,” said Gen. John Raymond, the U.S. Space Force’s chief of operations, when asked by CNBC about the strides made by private space companies like Elon Musk’s SpaceX.

“I’ve talked about people knocking on our door wanting to come into the Space Force in numbers greater than what we have slots to fill. I’ve talked in the past about how universities are seeing more students apply for space STEM degrees, which I think is going to be great for our nation,” Raymond added.

“I’m excited about all of it, both what we’re doing here on national security and what’s going on in the commercial industry that we can leverage the advantage,” the four-star general said without specifically naming any companies.

“The U.S. has always, has long understood that we are stronger with a secure and stable space domain and all of those sectors play into that,” Raymond said.

The U.S. Space Force, the Pentagon’s youngest branch, has increasingly looked to partner with the private sector as companies and investors pour into the space industry. The Pentagon is closely watching the progress of rocket builders like Rocket Lab, Astra and Virgin Orbit in addition to SpaceX.

Raymond’s comments came on the heels of SpaceX announcing this week that it will fly its first all-civilian crew into orbit later this year, a mission known as Inspiration 4.

The landmark flight, led by billionaire Jared Isaacman, is aimed at using high-profile space tourism to raise support for St. Jude Children’s Research Hospital. Three yet-to-be-announced passengers will accompany Isaacman on the multiday journey around the Earth, with two of the seats to be decided in public online competitions this month.

SpaceX announces first space mission with all-civilian crew

Raymond also called out NASA’s Crew-1 mission, which was the first operational launch of SpaceX’s Crew Dragon spacecraft.

“If you look at what’s going on in the civil sector with the launch of U.S. astronauts, and in this last launch a Japanese astronaut from U.S. soil on a commercial launch vehicle, there’s a ton of excitement there,” he said.

Raymond did not provide a reaction to SpaceX’s Starship rocket test flight on Tuesday, which resulted in an explosion as it attempted to land.

Starship prototype SN9 launched successfully to about 33,000 feet but, like the previous prototype flight in December, the rocket smashed into the ground while attempting to land.

Private investment in space companies last year set a fresh annual record, despite industry fears that the Covid-19 pandemic would end the past decade’s momentum, according to a report by Space Capital last month. Builders of rockets and satellites brought in $8.9 billion in 2020, with venture capital and angel investors continuing to pour funds into space businesses.

#### Space privatization key to US heg— Russia and China benefit from a weakened US.

Weichert 17 [(Brandon J., a former Congressional staff member who holds a Master of Arts in Statecraft & National Security Affairs from the Institute of World Politics in Washington, D.C. He is the founder of The Weichert Report: An Online Journal of Geopolitics, and is currently completing a book on national security space policy.) “The High Ground: The Case for U.S. Space Dominance,” Science Direct, 2017. <https://www.sciencedirect.com/science/article/abs/pii/S0030438717300108>] RR

The global order is currently disordered. New states with completely different values from the United States are rising to prominence. Many of those states possess strategic cultures opposed to the American hegemony that has defined the post-Cold War order.

Yet, the United States still maintains greater power, wealth, and capabilities than the other states seeking to displace her. For the United States to maintain its hegemonic position, it must also maintain a dominant position in space. As has been noted before, space is the ultimate high ground from which a state can dominate all of the other strategic domains (land, air, sea, and cyberspace). The United States has enjoyed the benefits from dominating this region. Yet, states like China and Russia are moving forward with their own plans not only to deny America access to space, but also to dominate this realm. These states would then benefit from commanding the high ground of space at America’s expense.

Since at least the Nixon Administration, space has come to be viewed in a militarized light. By the end of the Cold War, space had not only been militarized, but many were searching for a way to weaponize it. Just as the drift toward militarization of space was inexorable, so too is the desire for weaponization. As rival states begin to hone their space skills, the United States should seek to obtain the first move advantage by capitalizing on its already sizable lead in space by weaponizing it first. The placing of weapons in orbit would not only increase the costs of attacking existing U.S. space architecture, but it would also lend itself to increasing global stability by raising the costs of aggressive behavior on belligerents. Whatever negatives the weaponization of space may have, nothing is more negative for America than to find itself losing its dominance of space to a state that has placed weapons in orbit first.

To be passive and allow temporary budgetary constraints to dictate longterm space strategy will damage irrevocably the U.S. position in orbit. Our enemies are aware of our shortsighted preference for space superiority over dominance and are moving toward degrading the American advantage in space.23 Space dominance will not only rebuff rising states from challenging the United States, but it will also lend stability to the world order. This proactive stance was the goal of Ronald Reagan’s Strategic Defense Initiative. It must be the goal of U.S. policymakers today.24

#### US leadership in this decade solves global war and results in a peaceful end to Chinese revisionism **Erickson and Collins 10/21** [(Andrew, A professor of strategy in the U.S. Naval War College’s China Maritime Studies Institute)(Gabriel, Baker Botts fellow in energy and environmental regulatory affairs at Rice University’s Baker Institute for Public Policy) “A Dangerous Decade of Chinese Power Is Here,” Foreign Policy, 10/18/2021] U.S. and allied policymakers are facing the most important foreign-policy challenge of the 21st century. **China’s power is peaking**; so is the political position of Chinese President Xi Jinping and the Chinese Communist Party’s (CCP) **domestic strength.** In the long term, China’s **likely decline** after this peak is a **good thing.** But right now, it creates a **decade of danger** from a system that increasingly realizes it only has a **short time** to fulfill some of its **most critical**, long-held **goals.**

Within the next five years, China’s leaders are likely to conclude that its deteriorating demographic profile, structural economic problems, and technological estrangement from global innovation centers are eroding its leverage to annex Taiwan and achieve other major strategic objectives. As Xi internalizes these challenges, his foreign policy is likely to become even more accepting of risk, feeding on his nearly decadelong track record of successful revisionist action against the rules-based order. Notable examples include China occupying and militarizing sub-tidal features in the South China Sea, ramping up air and maritime incursions against Japan and Taiwan, pushing border challenges against India, occupying Bhutanese and Tibetan lands, perpetrating crimes against humanity in [Xinjiang](https://www.nytimes.com/interactive/2019/11/16/world/asia/china-xinjiang-documents.html), and coercively enveloping Hong Kong.

The relatively low-hanging fruit is plucked, but Beijing is emboldened to grasp the biggest single revisionist prize: Taiwan.

Beijing’s actions over the last decade have triggered backlash, such as with the so-called AUKUS deal, but concrete constraints on China’s strategic freedom of action may not fully manifest until after 2030. It’s remarkable and dangerous that China has paid few costs for its actions over the last 10 years, even as its military capacities have rapidly grown.

Beijing will likely conclude that under current diplomatic, economic, and force postures for both “gray zone” and high-end scenarios, the 2021 to late 2020s timeframe still favors China—and is attractive for its 68-year-old leader, who seeks a historical achievement at the zenith of his career.

U.S. planners must mobilize resources, effort, and risk acceptance to maximize power and thereby deter Chinese aggression in the coming decade—literally starting now—and innovatively employ assets that currently exist or can be operationally assembled and scaled within the next several years. That will be the first step to pushing back against China during the 2020s—a decade of danger—before what will likely be a waning of Chinese power.

As Beijing aggressively seeks to undermine the international order and promotes a narrative of inevitable Chinese strategic domination in Asia and beyond, it creates a dangerous contradiction between its goals and its medium-term capacity to achieve them. China is, in fact, likely nearing the apogee of its relative power; and by 2030 to 2035, it will cross a tipping point from which it may never recover strategically. Growing headwinds constraining Chinese growth, while not publicly acknowledged by Beijing, help explain Xi’s high and apparently increasing risk tolerance. Beijing’s window of strategic opportunity is sliding shut.

China’s skyrocketing household debt levels exemplify structural economic constraints that are emerging much earlier than they did for the United States when it had similar per capita GDP and income levels. Debt is often a wet blanket on consumption growth. A 2017 analysis published by the Bank for International Settlements found that once the household debt-to-GDP ratio in a sample of 54 countries exceeded 60 percent, “the negative long-run effects on consumption tend to intensify.” China’s household debt-to-GDP ratio surpassed that empirical danger threshold in late 2020. Rising debt service burdens thus threaten Chinese consumers’ capacity to sustain the domestic consumption-focused “dual circulation” economic model that Xi and his advisors seek to build. China’s growth record during the past 30 years has been remarkable, but past exceptionalism does not confer future immunity from fundamental demographic and economic headwinds.

As debt levels continue to rise at an absolute level that has accelerated almost continuously for the past decade, China also faces a hollowing out of its working-age population. This critical segment peaked in 2010 and has since declined, with the rate from 2015 to 2020 nearing 0.6 percent annually—nearly twice the respective pace in the United States. While the United States faces demographic challenges of its own, the disparity between the respective paces of decline highlights its relative advantage compared to its chief geopolitical competitor. Moreover, the United States can choose to access a global demographic and talent dividend via immigration in a way China simply will not be able to do.

Atop surging debt and worsening demographics, China also faces resource insecurity. China’s dependence on imported food and energy has grown steadily over the past two decades. Projections from Tsinghua University make a compelling case that China’s oil and gas imports will peak between 2030 and 2035. As China grapples with power shortages, Beijing has been reminded that supply shortfalls equal to even a few percentage points of total demand can have outsized negative impacts.

Domestic resource insufficiency by itself does not hinder economic growth—as the Four Asian Tigers’ multi-decade boom attests. But China is in a different position. Japan and South Korea never had to worry about the U.S. Navy interdicting inbound tankers or grain ships. In fact, the United States was avowedly willing to use military force to protect energy flows from the Persian Gulf region to its allies. Now, as an increasingly energy-secure United States pivots away from the Middle East toward the Indo-Pacific, there is a substantial probability that energy shipping route protection could be viewed in much more differentiated terms—with oil and liquefied natural gas cargoes sailing under the Chinese flag viewed very differently than cargoes headed to buyers in other regional countries.

Each of these dynamics—demographic downshifts, rising debts, resource supply insecurity—either imminently threatens or is already actively interfering with the CCP’s long-cherished goal of achieving a “moderately prosperous society.” Electricity blackouts, real estate sector travails (like those of Evergrande) that show just how many Chinese investors’ financial eggs now sit in an unstable $52 trillion basket, and a solidifying alignment of countries abroad concerned by aggressive Chinese behavior all raise questions about Xi’s ability to deliver. With this confluence of adverse events only a year before the next party congress, where personal ambition and survival imperatives will almost drive him to seek anointment as the only Chinese “leader for life” aside from former leader Mao Zedong, the timing only fuels his sense of insecurity. Xi’s anti-corruption campaigns and ruthless removal of potential rivals and their supporters solidified his power but likely also created a quiet corps of opponents who may prove willing to move against him if events create the perception he’s lost the “mandate of heaven.” Accordingly, the baseline assumption should be that Xi’s crown sits heavy and the insecurity induced is thereby intense enough to drive high-stake, high-consequence posturing and action.

While Xi is under pressure to act, the external risks are magnified because so far, he has suffered few consequences from taking actions on issues his predecessors would likely never have gambled on. Reactions to party predations in Xinjiang and [Hong Kong](https://home.treasury.gov/policy-issues/financial-sanctions/recent-actions/20210716_33) have been restricted to diplomatic-signaling pinpricks, such as sanctioning responsible Chinese officials and entities, most of whom lack substantial economic ties to the United States. Whether U.S. restraint results from a fear of losing market access or a belief that China’s goals are ultimately limited is not clear at this time.

While the CCP issues retaliatory sanctions against U.S. officials and proclaims a triumphant outcome to its hostage diplomacy, these tactical public actions mask a growing private awareness that China’s latitude for irredentist action is poised to shrink. Not knowing exactly when domestic and external constraints will come to bite—but knowing that when Beijing sees the tipping point in its rearview mirror, major rivals will recognize it too—amplifies Xi and the party’s anxiety to act on a shorter timeline. Hence the dramatic acceleration of the last few years.

Just as China is mustering its own strategic actions, so the United States must also intensify its focus and deployment of resources. The United States has taken too long to warm up and confront the central challenge, but it retains formidable advantages, agility, and the ability to prevail—provided it goes all-in now. Conversely, if Washington fails to marshal its forces promptly, its achievements after 2030 or 2035 will matter little. Seizing the 2020s would enable Beijing to ~~cripple~~ [destroy] the free and open rules-based order and entrench its position by economically subjugating regional neighbors (including key U.S. treaty allies) to a degree that could offset the strategic headwinds China now increasingly grapples with.

Deterrence is never certain. But it offers the highest probability of avoiding the certainty that an Indo-Pacific region dominated by a CCP-led China would doom treaty allies, threaten the U.S. homeland, and likely set the stage for worse to come. Accordingly, U.S. planners should immediately mobilize resources and effort as well as accept greater risks to deter Chinese action over the critical next decade.

The greatest threat is armed conflict over Taiwan, where U.S. and allied success or failure will be fundamental and reverberate for the remainder of the century. There is a high chance of a major move against Taiwan by the late 2020s—following an extraordinary ramp-up in People’s Liberation Army capabilities and before Xi or the party state’s power grasp has ebbed or Washington and its allies have fully regrouped and rallied to the challenge.

So how should policymakers assess the potential risk of Chinese action against Taiwan reaching dangerous levels by 2027 or possibly even earlier—as emphasized in the testimonies of Adms. Philip Davidson and John Aquilino? In June, Chairman of the Joint Chiefs Gen. Mark Milley testified to the House of Representatives that Xi had “challenged the People’s Liberation Army to accelerate their modernization programs to develop capabilities to seize Taiwan and move it from 2035 to 2027,” although China does not currently have the capabilities or intentions to conduct an all-out invasion of mainland Taiwan.

U.S. military leaders’ assessments are informed by some of the world’s most extensive and sophisticated internal information. But what’s striking is open-source information available to everyone suggests similar things. Moving forward, a number of open-source indicators offer valuable “early warning lights” that can help policymakers more accurately calibrate both potential timetables and risk readings as the riskiest period of relations—from 2027 onward—approaches.

Semiconductors supply self-sufficiency. Taiwan is the “OPEC+” of semiconductors, accounting for approximately two-thirds of global chip foundry capacity. A kinetic crisis would almost certainly disrupt—and potentially even completely curtail—semiconductor supplies. China presently spends even more each year on semiconductor imports (around $380 billion) than it does on [oil](http://english.customs.gov.cn/Statics/0aba4bfd-f8ed-477c-9d16-dc3def897b7b.html), but much of the final products are destined for markets abroad. Taiwan is producing cutting-edge 5-nanometer and 7-nanometer chips, but China produces around 80 percent of the rest of the chips in the world. The closer China comes to being able to secure “good enough” chips for “inside China-only” needs, the less of a constraint this becomes.

Crude oil, grain, strategic metals stockpiles—the commercial community (Planet Labs, Ursa Space Systems, etc.) has developed substantial expertise in cost-effectively tracking inventory changes for key input commodities needed to prepare for war.

Electric vehicle fleet size—the amount of oil demand displaced by electric vehicles varies depending on miles driven, but the more of China’s car fleet that can be connected to the grid (and thus powered by blockade-resistant coal), the less political burden Beijing will face if it has to weather a maritime oil blockade imposed in response to actions it took against Taiwan or other major revisionist adventures. China’s passenger vehicle fleet, now approximately 225 million units strong, counts nearly 6.5 million electric vehicles among its ranks, the lion’s share of which are full-battery electrics. China’s State Council seeks to have 20 percent of new vehicles sold in China be electric vehicles by 2025. This target has already basically been achieved over the last few months, meaning at least 3.5 to 4 million (and eventually many more) new elective vehicles will enter China’s car fleet each year from now on.

Local concentration of maritime vessels—snap exercises with warships, circumnavigations, and midline tests with swarms of aircraft highlight the growing scale of China’s threat to [Taiwan](https://www.andrewerickson.com/2021/06/quick-look-cmsis-4-6-may-2021-conference-large-scale-amphibious-warfare-in-chinese-military-strategy-taiwan-strait-campaign-focus/). But these assets alone cannot invade the island. To capture and garrison, Beijing would need not only air, missile, naval, and special operations forces but also the ability to move lots of equipment and—at the very least—tens of thousands of personnel across the Taiwan Strait. As such, Beijing would have to amass maritime transport assets. And given the scale required, this would alter ship patterns elsewhere along China’s coast in ways detectable with artificial intelligence-facilitated imagery analysis from firms like Planet Labs (or national assets).

Only the most formidable, agile American and allied deterrence can kick the can down the road long enough for China’s slowdown to shut the window of vulnerability. Holding the line is likely to require frequent and sustained proactive enforcement actions to disincentivize full-frontal Chinese assaults on the rules-based order in the Indo-Pacific. Chinese probing behavior and provocations must be met with a range of symmetric and asymmetric responses that impose real costs, such as publishing assets owned by Chinese officials abroad, cyber interference with China’s technological social control apparatus, “hands on” U.S. Navy and Coast Guard enforcement measures against Maritime Militia-affiliated vessels in the South China Sea, intensified air and maritime surveillance of Chinese naval bases, and visas and resettlement options to Hong Kongers, Uyghurs, and other threatened Chinese citizens—including CCP officials (and their families) who seek to defect and/or leave China. U.S. policymakers must make crystal clear to their Chinese counterparts that the engagement-above-all policies that dominated much of the past 25 years are over and the risks and costs of ongoing—and future—adventurism will fall heaviest on China.

Bombastic Chinese reactions to emerging cohesive actions verify the approach’s effectiveness and potential for halting—and perhaps even reversing—the revisionist tide China has unleashed across the Asian region. Consider the recent nuclear submarine deal among Australia, the United States, and the United Kingdom. Beijing’s strong public reaction (including toleration of [nuclear threats](https://www.globaltimes.cn/page/202109/1234460.shtml) made by the state-affiliated *Global Times*) highlights the gap between its global information war touting China’s irresistible power and deeply insecure internal self-perception. Eight nuclear submarines will ultimately represent formidable military capacity, but for a bona fide superpower that believes in its own capabilities, they would not be a game-changer. Consider the U.S.-NATO reaction to the Soviet Union’s commissioning of eight Oscar I/II-class cruise missile subs during the late Cold War. These formidable boats each carried 24 SS-N-19 Granit missiles specifically designed to kill U.S. carrier battle groups, yet NATO never stooped to public threats.

With diplomatic proofs of concepts like the so-called AUKUS deal, the Quadrilateral Security Dialogue, and hard security actions like the Pacific Deterrence Initiative now falling into place, it is time to comprehensively peak the non-authoritarian world’s protective action to hold the line in the Indo-Pacific. During this decade, U.S. policymakers must understand that under Xi’s strongman rule, personal political survival will dictate Chinese behavior. Xi’s recreation of a “one-man” system is a one-way, high-leverage bet that decisions he drives will succeed.

If Xi miscalculates, a significant risk given his suppression of dissenting voices while China raises the stakes in its confrontation with the United States, the proverbial “leverage” that would have left him with outsized returns on a successful bet would instead amplify the downside, all of which he personally and exclusively signed for. Resulting tensions could very realistically undermine his status and authority, embolden internal challengers, and weaken the party. They could also foreseeably drive him to double down on mistakes, especially if those led to—or were made in the course of—a kinetic conflict. Personal survival measures could thus rapidly transmute into regional or even global threats.

If Xi triggered a “margin call” on his personal political account through a failed high-stakes gamble, it would likely be paid in blood. Washington must thus prepare the U.S. electorate and its institutional and physical infrastructure as well as that of allies and partners abroad for the likelihood that tensions will periodically ratchet up to uncomfortable levels—and that actual conflict is a concrete possibility. Si vis pacem, para bellum (“if you want peace, prepare for war”) must unfortunately serve as a central organizing principle for a variety of U.S. and allied decisions during the next decade with China.

Given these unforgiving dynamics and stakes, implications for U.S. planners are stark: Do whatever remains possible to “peak” for deterrent competition against China by the mid-to-late 2020s, and accept whatever trade-offs are available for doing so.

Nothing we might theoretically achieve in 2035 and beyond is worth pursuing at the expense of China-credible capabilities we can realistically achieve no later than the mid-to-late 2020s.

#### Justifies any American exceptionalism arguments – the US does have a unique role to play and it is to deter china

## Case

### Solvency

#### Can’t solve all of capitalism -- None of their ev is reverse causal - industrial agriculture, the defense industrial base, Amazon, Koch Industries are all examples of capitalism and colonialism - plus capitalism predates space exploration, which proves they don't control the root cause

#### The aff has zero bearing on equally capitalist public space sectors- means they don't solve spatial fixes because they can appropriate space resources, then sell them to private companies - proven by existing contracts between government entities and NewSpace

#### The aff increases emissions and burning of fossil fuels – if companies can’t profit from new space they will increase production on earth – even if the spatial fixes argument is true it doesn’t mean all aspects of a capitalist econ instantly collapse

#### Doesn’t solve all of space exploration or launches – public sector still exists or is even stronger post plan which still would have missions – if not, that proves our arguments on the Das

#### Reject broad indites about things like “neoliberal guilt” – doesn’t implicate our authors or scenarios directly

### Cap good

#### Framing issue for the cap debate – their Shammas and Holen evidence proves the link but does not justify why capitalism is unsustainable – don’t do that work for them or let them shift or read ev in the 1ar

#### 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.

#### Growth is sustainable and inevitable – unparalleled data proves tech solves, but transition doesn’t.

Bailey ’16 (Ronald; 12/16/16; B.A. in Philosophy and B.A. Economics from the University of Virginia, member of the Society of Environmental Journalists and the American Society for Bioethics and Humanities, citing a compilation of interdisciplinary research; Reason, “Is Economic Growth Environmentally Sustainable?” <http://reason.com/archives/2016/12/16/is-economic-growth-environmentally-sust1)>

Is economic growth environmentally sustainable? No, say a group of prominent ecological economists led by the Australian hydrologist James Ward. In a new PLoS ONE article—"Is Decoupling GDP Growth from Environmental Impact Possible?"—they offer an analysis inspired by the 1972 neo-Malthusian classic The Limits to Growth. They even suggest that The Limits to Growth's projections with regard to population, food production, pollution, and the depletion of nonrenewable resources are still on track. In other words, they think we're still heading for a collapse. I think **they're wrong**. But they're wrong in an instructive way. The authors describe two types of "decoupling," relative and absolute. Relative decoupling means that economic growth increases faster than rates of growth in material and energy **consumption** and **environmental impact**. Between 1990 and 2012, for example, China's **GDP rose 20-fold** while its energy use increased by a factor of four and its material use by a factor of five. Basically this entails increases in efficiency that result in using fewer resources to produce more value. Absolute decoupling is what happens when continued economic growth actually **lessens resource use** and impacts on the natural environment, that is, creating more value while using less stuff. Essentially humanity becomes richer while withdrawing from nature. To demonstrate that continued economic growth is unsustainable, the authors recycle the hoary I=PAT model devised in 1972 by the Stanford entomologist and population alarmist Paul Ehrlich and the Harvard environmental policy professor (and chief Obama science adviser) John Holdren. Human Impact on the environment is supposed to equal to Population x Affluence/consumption x Technology. All of these are presumed to intensify and worsen humanity's impact on the natural world. In Ward and company's updated version of I=PAT, the sustainability of economic growth largely depends on Technology trends. Absolute decoupling from resource consumption or pollutant emissions requires technological intensity of use and emissions to decrease by at least the same annual percentage as the economy is growing. For example, if the economy is growing at three percent per year, technological intensity must reduce 20-fold over 100 years to maintain steady levels of resource consumption or emissions. If technological intensity is faster then resource use and emissions will decline over time, which would result in greater wealth creation with ever lessening resource consumption and environmental spillovers. Once they've set up their I=PAT analysis, Ward and his colleagues assert that "for non-substitutable resources such as land, water, raw materials and energy, we argue that whilst efficiency gains may be possible, there are minimum requirements for these resources that are ultimately governed by physical realities." Among the "physical realities" they mention are limits on plant photosynthesis, the conversion efficiencies of plants into meat, the amount of water needed to grow crops, that all supposedly determine the amount of agricultural land required to feed humanity. They also cite "the upper limits to energy and material efficiencies govern minimum resource throughput required for economic production." To illustrate the operation of their version of the I=PAT equation, they apply it to a recent study that projected it would be possible for Australia's economy to grow 7-fold while simultaneously reducing resource and energy use and lowering environmental pressures through 2050. They **crank the notion** that there are nonsubstitutable physical limits on material and energy resources through their equations until 2100, and they find that eventually consumption of both rise at the same rate as economic growth. QED: Economic growth is unsustainable. Or as they report, "Permanent decoupling (absolute or relative) is impossible for essential, non-substitutable resources because the efficiency gains are ultimately governed by physical limits." **Malthus wins again!** Or does he? GDP growth—increases in the monetary value of all finished goods and services—is a crude measure for improvements in human well-being. Nevertheless, rising incomes (GDP per capita) correlate with lots of good things that nearly everybody wants, including access to more and better **food**, longer and **healthier lives**, more educational **opportunities**, and greater scope for life choices. Ward and his colleagues are clearly right that there is only so much physical stuff on the Earth, but even they know that wealth is not created simply by using more stuff. Where they go wrong (as so many Malthusians do) is by implicitly assuming that there are limits to human creativity. Interestingly, Ward and his colleagues, like Malthus before them, focus on the supposed limits to **agricultural productivity**. For example, they cite the limits to photosynthesis, which will limit the amount of food that humanity can produce. But as they acknowledge, human population may not continue to increase. In fact, **global fertility rates** have been **decelerating** for many decades now, and demographer Wolfgang Lutz calculates that world population will peak after the middle of this century and begin falling. Since the number of mouths to feed will stabilize and people can eat only so much, it is unlikely that the **biophysical limits** of agriculture on Earth will be exceeded. But it gets even better. Agricultural **productivity is improving**. Consider the biophysical limit on photosynthesis cited by the study. In fact, researchers are already making progress on installing more efficient C-4 photosynthesis into rice and wheat, which would **boost yields by** as much as **50 percent**. British researchers just announced that they had figured out how to boost photosynthetic efficiency to create a super-wheat would increase yields by 20 percent. In a 2015 article for the Breakthrough Journal, "The Return of Nature: How Technology Liberates the Environment," Jesse H. Ausubel of Rockefeller University reviews how humanity is **already decoupling** in many ways from the natural world. "A series of 'decouplings' is occurring, so that our economy no longer advances in tandem with exploitation of land, forests, water, and minerals," he writes. "American use of almost everything except information **seems to be peaking**." He notes that agricultural applications of fertilizer and water in the U.S. peaked in the 1980s while yields continued to increase. Thanks to increasing agricultural productivity, humanity is already at **"peak farmland"**; as a result, "an area the size of India or of the United States east of the Mississippi could be released globally from agriculture over the next 50 years or so." Ward is worried about biophysical limits on water use. But as Ausubel notes, U.S. **water use has peaked** and has declined **below the level of 1970**. What about meat? Ausubel notes the **greater efficiency** with which chickens and cultivated fish turn grains and plant matter into meat. In any event, the future of farming is not fields but factories. Innovators are already seeking to replace the entire dairy industry with milk, yogurt, and cheeses made by genetically modified bacteria grown in tanks. Others are figuring how to culture meat in vat. Ausubel also notes that many countries have already been through or are about to enter the "forest transition," in which forests begin to expand. Roger Sedjo, a forest economist at Resources of the Future, has projected that by the middle of this century most of world's **industrial wood** will be produced from planted forests covering a remarkably small land area, perhaps **only 5 to 10 percent** of the extent of today's global forest. Shrinking farms and ranches and expanding forests will do a lot toward turning around the alarming global reduction in wildlife. How about unsubstitutable stuff? Are we running out of that? Ausubel notes that the U.S. has apparently already achieved **absolute decoupling**—call it peak stuff—for a lot of materials, including plastics, paper, timber, phosphate, aluminum, steel, and copper. And he reports relative decoupling for **53** other **commodities**, all of which are likely heading toward absolute decoupling. Additive manufacturing is also known as 3-D printing, in which machines build up new items one layer at a time. The Advanced Manufacturing Office suggested that additive manufacturing can reduce material needs and costs by up to **90 percent**. And instead of the replacement of worn-out items, their material can **simply be recycled** through a printer to return it to good-as-new condition using only 2 to 25 percent of the energy required to make new parts. 3-D printing on demand will also eliminate storage and inventory costs, and will significantly cut transportation costs. Nanomanufacturing—building atom-by-atom—will likely engender a **fourth industrial revolution** by spurring exponential economic growth while reducing human demands for material resources. Ward and company project that Australians will be using 250 percent more energy by 2100. Is there an upper limit to energy production that implies unsustainability? In their analysis, the ecological economists apparently assume that energy supplies are limited. Why this is not clear, unless their model **implicitly assumes** a growing **consumption** of fossil fuels (and even then, the world is not close to running out of those). But there is a source of energy that, for all practical purposes, is limitless and has few deleterious environmental effects: **nuclear power**. If demand for primary energy were to double by 2050, a back-of-the-envelope calculation finds that the **entire world's energy needs** could be supplied by 6,000 conventional nuclear power plants. The deployment of fast reactors would supply "renewable" energy for thousands of years. The development of thorium reactors could also supply **thousands of years** of energy. And both could do so without harming the environment. (Waste heat at that scale would not be much of a problem.) Such power sources are in any relevant sense "decoupled" from the natural world, since their fuel cycles produce **little pollution**. Recall that GDP measures the monetary value of all finished goods and services. Finished goods will become a shrinking part of the world's economy as more people gain access to food, clothing, housing, transportation, and so forth. Already, services account for 80 percent of U.S. GDP and 80 percent of civilian employment. Instead of stuff, people will want to spend time creating and enjoying themselves. As technological progress enables economic growth, people will consume more pixels and less petroleum, more massages and less mortar, more handicrafts and less hardwood. Ultimately, Ward and his colleagues make the **same mistake as Malthus** and the Limits to Growth folks: They **extrapolate trends** without taking adequate account of human **ingenuity**. Will it be possible to grow the economy 7-fold over this century while reducing resource consumption and restoring the natural world? Yes.

#### Capitalism solves environmental crisis - industrial development, technological advances, and any alternative fails

Zitelmann 20 [(Dr. Rainer, a historian and sociologist. He is also a world-renowned author, successful businessman and real estate investor. Zitelmann has written a total of 24 books and has a doctorate in political science and sociology) “‘System Change Not Climate Change’: Capitalism And Environmental Destruction” Forbes, 7/13/2020] BC

The Price Of Growth—Destruction Of The Environment?

But isn’t there a price for this growth: environment devastation? Of course, nobody would deny that industrialization causes environmental problems. But the assertion that growth automatically leads to ever accelerating environmental degradation is simply false. Yale University’s Environmental Performance Index (EPI) uses 16 indicators to rank countries on environmental health, air quality, water, biodiversity, natural resources and pollution. These indicators have been selected to reflect both the current baseline and the dynamics of national ecosystems. One of the Index’s most striking findings is that there is a strong correlation between a state’s wealth and its environmental performance. Most developed capitalist countries achieve high environmental standards. Those countries with the worst EPI scores, such as Ethiopia, Mali, Mauritania, Chad and Niger, are all poor. They have both low investment capacity for infrastructure, including water and sanitation, and tend to have weak environmental regulatory authorities.

Contrary to prevailing perceptions, industrial development and technological advances have contributed significantly to relieving the burden on the environment. Both Indur Goklany in his book The Improving State of the World and Steven Pinker in chapter ten (“The Environment”) of his book Enlightenment Now demonstrate that we are not only living longer, healthier lives in unprecedented prosperity, but we are also doing so on a comparatively clean planet.

Researchers have confirmed that economic freedom—in other words, more capitalism—leads to higher, not lower, environmental quality.

Every year, the Heritage Foundation compiles its Index of Economic Freedom, which analyzes individual levels of economic freedom, and thus capitalism, in countries around the world. The Heritage Foundation’s researchers also measure the correlation between each country’s environmental performance and its economic freedom. The results couldn’t be clearer: the world’s most economically free countries achieve the highest environmental performance rankings with an average score of 76.1, followed by the countries that are “mostly free,” which score an average of 69.5. In stark contrast, the economically “repressed” and “mostly unfree” countries all score less than 50 for environmental performance.

Is Government The Best Solution To Environmental Problems?

Anti-capitalists frequently claim that central government is the best solution to environmental problems. And there is no doubt that state regulations to safeguard the environment are important. But state regulations, cited by anti-capitalists as a panacea for environmental issues, often achieve the opposite of what they were intended to do. Hardly any other country in the world touts its green credentials as much as Germany. According to even the most conservative estimates, Germany’s so-called “energy transition” is set to cost a total of almost €500 billion by 2025.

But the results of this massive investment is sobering, as an analysis by McKinsey reveals, “Germany is set to miss several key energy transition targets for the year 2020, and the country’s high power supply security is at risk unless new generation capacity and grid infrastructure are built in time for the coal and nuclear exit and electrification of transportation networks is accelerated.”

For decades, environmentalists in Germany focused on shutting down nuclear power plants. However, the phasing out of nuclear power has left Germany in a poor position in terms of CO2 emissions compared to other countries. It is not without good reason that Germany’s energy policy has been described as the dumbest in the world.

The latest generation of nuclear power plants are much safer than their predecessors. Despite what environmentalists might claim, impartial calculations have confirmed that it is impossible to meet the world’s energy needs from solar and wind power alone. Enlightened environmentalists are therefore now calling for nuclear power to be rightfully included in the fight against climate change. And yet, this is precisely what is being prevented in Germany by politicians—not capitalism. This example, just one of many, shows that government environmental policy is often ineffective. In some instances, it even achieves the opposite of what it was originally intended to, i.e. it exacerbates existing environmental problems.

It is also wrong to think that capitalism necessarily leads to ever greater waste of limited natural resources. Just take the smartphone for example, one of the most environmentally friendly of capitalism’s many achievements. With just one small device, a whole plethora of devices that used to consume resources in the past, such as the telephone, camera, calculator, navigation system, dictation machine, alarm clock, flashlight and many others, have been replaced. Smartphones also help to reduce the consumption of paper as many people choose not to take notes on paper and, for example, use their iPhone instead of a calendar to enter appointments.

Those who call for “system change” instead of “climate change” do not usually say which system they would prefer. All they are really sure of is that any new system should not be based on free market economics and that the state should play the decisive role. The simple fact is that socialism has failed in every country every time it has been tried—and socialism has damaged the environment more than any capitalist system. Murray Feshbach documents examples of the environmental destruction wrought by socialism in his book Ecological Disaster. Cleaning Up the Hidden Legacy of the Soviet Regime. As the book progresses through chapters such as “A Nuclear Plague,” “Dying Lakes, Rivers, and Inland Seas” and “Pollution of the Air and Land,” it becomes clear that this non-capitalist system was responsible for the greatest environmental destruction in history. Anti-capitalists may well reply that they do not want a system like the Soviet Union. And yet, they cannot name a single real-world system—at any time in the history of mankind—that provides better environmental solutions than capitalism.

#### It’s key to CCS – link-turns every impact.

Graciela ‘16 (/16 – Professor of Economics and of Statistics at Columbia University and Visiting Professor at Stanford University, and was the architect of the Kyoto Protocol carbon market (being interviewed by Marcus Rolle, freelance journalist specializing in environmental issues and global affairs, “Reversing Climate Change: Interview with Graciela Chichilnisky,” http://www.globalpolicyjournal.com/blog/01/09/2016/reversing-climate-change-interview-graciela-chichilnisky)//cmr

GC: Green capitalism is a new economic system that values the natural resources on which human survival depends. It fosters a harmonious relationship with our planet, its resources and the many species it harbors. It is a new type of market economics that addresses both equity and efficiency. Using carbon negative technology™ it helps reduce carbon in the atmosphere while fostering economic development in rich and developing nations, for example in the U S., EU, China and India. How does this work? In a nutshell Green Capitalism requires the creation of global limits or property rights nation by nation for the use of the atmosphere, the bodies of water and the planet’s biodiversity, and the creation of new markets to trade these rights from which new economic values and a new concept of economic progress emerges updating GDP as is now generally agreed is needed. Green Capitalism is needed now to help avert climate change and achieve the goals of the 2015 UN Paris Agreement, which are very ambitious and universally supported but have no way to be realized within the Agreement itself. The Carbon Market and its CDM play critical roles in the foundation of Green Capitalism, creating values to redefine GDP. These are needed to remain within the world’s “CO2 budget” and avoid catastrophic climate change. As I see it, the building blocks for Green Capitalism are then as follows; (1) Global limits nation by nation in the use of the planet’s atmosphere, its water bodies and biodiversity - these are global public goods. (2) New global markets to trade these limits, based on equity and efficiency. These markets are relatives of the Carbon Market and the SO2 market. The new market create new measures of economic values and update the concept of GDP. (3) Efficient use of Carbon Negative Technologies to avert catastrophic climate change by providing a smooth transition to clean energy and ensuring economic prosperity in rich and poor nations. These building blocks have immediate practical implications in reversing climate change and can assist the ambitious aims of Paris COP21 become a reality. MR: What is the greatest advantage of the new generation technologies that can capture CO2 from the air? GC: These technologies build carbon negative power plants, such as Global Thermostat, that clean the atmosphere of CO2 while producing electricity. Global Thermostat is a firm that is commercializing a technology that takes CO2 out of air and uses mostly low cost residual heat rather than electricity to drive the capture process, making the entire process of capturing CO2 from the atmosphere very inexpensive. There is enough residua heat in a coal power plant that it can be used to capture twice as much CO2 as the plant emits, thus transforming the power plant into a “carbon sink.” For example, a 400 MW coal plant that emits 1 million tons of CO2 per year can become a carbon sink absorbing a net amount of 1 million tons of CO2 instead. Carbon capture from air can be done anywhere and at any time, and so inexpensively that the CO2 can be sold for industrial or commercial uses such as plastics, food and beverages, greenhouses, bio-fertilizers, building materials and even enhanced oil recovery, all examples of large global markets and profitable opportunities. Carbon capture is powered mostly by low (85°C) residual heat that is inexpensive, and any source will do. In particular, renewable (solar) technology can power the process of carbon capture. This can help advance solar technology and make it more cost-efficient. This means more energy, more jobs, and it also means economic growth in developing nations, all of this while cleaning the CO2 in the atmosphere. Carbon negative technologies can literally transform the world economy. MR: One final question. You distinguish between long-run and short-run strategies in the effort to reverse climate change. Would carbon negative technologies be part of a short-run strategy? GC: Long-run strategies are quite different from strategies for the short-run. Often long-run strategies do not work in the short run and different policies and economic incentives are needed. In the long run the best climate change policy is to replace fossil fuel sources of energy that by themselves cause 45% of the global emissions, and to plant trees to restore if possible the natural sources and sinks of CO2. But the fossil fuel power plant infrastructure is about 87% of the power plant infrastructure and about $45-55 trillion globally. This infrastructure cannot be replaced quickly, certainly not in the short time period in which we need to take action to avert catastrophic climate change. The issue is that CO2 once emitted remains hundreds of years in the atmosphere and we have emitted so much that unless we actually remove the CO2 that is already there, we cannot remain long within the carbon budget, which is the concentration of CO2 beyond which we fear catastrophic climate change. In the short run, therefore, we face significant time pressure. The IPCC indicates in its 2014 5th Assessment Report that we must actually remove the carbon that is already in the atmosphere and do so in massive quantities, this century (p. 191 of 5th Assessment Report). This is what I called a carbon negative approach, which works for the short run. Renewable energy is the long run solution. Renewable energy is too slow for a short run resolution since replacing a $45-55 trillion power plant infrastructure with renewable plants could take decades. We need action sooner than that. For the short run we need carbon negative technologies that capture more carbon than what is emitted. Trees do that and they must be conserved to help preserve biodiversity. Biochar does that. But trees and other natural sinks are too slow for what we need today. Therefore, negative carbon is needed now as part of a blueprint for transformation. It must be part of the blueprint for Sustainable Development and its short term manifestation that I call Green Capitalism, while in the long run renewable sources of energy suffice, including Wind, Biofuels, Nuclear, Geothermal, and Hydroelectric energy. These are in limited supply and cannot replace fossil fuels. Global energy today is roughly divided as follows: 87% is fossil, namely natural gas, coal, oil; 10% is nuclear, geothermal, and hydroelectric, and less than 1% is solar power — photovoltaic and solar thermal. Nuclear fuel is scarce and nuclear technology is generally considered dangerous as tragically experienced by the Fukushima Daichi nuclear disaster in Japan, and it seems unrealistic to seek a solution in the nuclear direction. Only solar energy can be a long term solution: Less than 1% of the solar energy we receive on earth can be transformed into 10 times the fossil fuel energy used in the world today. Yet we need a short-term strategy that accelerates long run renewable energy, or we will defeat long-term goals. In the short term as the IPCC validates, we need carbon negative technology, carbon removals. The short run is the next 20 or 30 years. There is no time in this period of time to transform the entire fossil infrastructure — it costs $45-55 trillion (IEA) to replace and it is slow to build. We need to directly reduce carbon in the atmosphere now. We cannot use traditional methods to remove CO2 from smokestacks (called often Carbon Capture and Sequestration, CSS) because they are not carbon negative as is required. CSS works but does not suffice because it only captures what power plants currently emit. Any level of emissions adds to the stable and high concentration we have today and CO2 remains in the atmosphere for years. We need to remove the CO2 that is already in the atmosphere, namely air capture of CO2 also called carbon removals. The solution is to combine air capture of CO2 with storage of CO2 into stable materials such as biochar, cement, polymers, and carbon fibers that replace a number of other construction materials such as metals. The most recent BMW automobile model uses only carbon fibers rather than metals. It is also possible to combine CO2 to produce renewable gasoline, namely gasoline produced from air and water. CO2 can be separated from air and hydrogen separated from water, and their combination is a well-known industrial process to produce gasoline. Is this therefore too expensive? There are new technologies using algae that make synthetic fuel commercially feasible at competitive rates. Other policies would involve combining air capture with solar thermal electricity using the residual solar thermal heat to drive the carbon capture process. This can make a solar plant more productive and efficient so it can out-compete coal as a source of energy. In summary, the blueprint offered here is a private/public approach, based on new industrial technology and financial markets, self-funded and using profitable greenmarkets, with securities that utilize carbon credits as the “underlying” asset, based on the KP CDM, as well as new markets for biodiversity and water providing abundant clean energy to stave off impending and actual energy crisis in developing nations, fostering mutually beneficial cooperation for industrial and developing nations. The blueprint proposed provides the two sides of the coin, equity and efficiency, and can assign a critical role for women as stewards for human survival and sustainable development. My vision is a carbon negative economy that represents green capitalism in resolving the Global Climate negotiations and the North–South Divide. Carbon negative power plants and capture of CO2 from air and ensure a clean atmosphere together innovation and more jobs and exports: the more you produce and create jobs the cleaner becomes the atmosphere. In practice, Green Capitalism means economic growth that is harmonious with the Earth resources.

#### Capitalism is key to economic growth – solves hunger and poverty

Zitelmann 20 [(Dr.Rainer, a historian and sociologist. He is also a world-renowned author, successful businessman and real estate investor. Zitelmann has written a total of 24 books and has a doctorate in political science and sociology) “‘System Change Not Climate Change’: Capitalism And Environmental Destruction” Forbes, 7/13/2020] BC

As one argument would have it, capitalism is responsible for the destruction of the environment because capitalism is based on growth. And yes, capitalism has led to tremendous economic growth. But without this growth, an ever-expanding world population would not have been able to provide even the most basic necessities. After all, in 1800, there were just one billion people on the planet; today there are more than seven billion.

Economic Growth Helps To Combat Hunger And Poverty

It is all the more astonishing that, despite this rapid population growth, the world has not been overcome by rampant poverty. Looking back to 1800, most people in the world were extremely poor—average incomes were the same as they are in the poorest countries in Africa today and more than 90% of the global population was living in extreme poverty. The development of capitalism and economic growth reduced the proportion of extremely poor people in the world to less than 10%—despite the sevenfold increase in the global population during this same period. So growth is not a bad thing in and of itself. In fact, growth has led to a reduction in hunger and poverty.

Life expectancy at birth has increased more than twice as much in the last century as in the previous 200,000 years. The probability of a child born today reaching retirement age is higher than the probability of previous generations ever celebrating their fifth birthdays. In 1900, the average life expectancy worldwide was 31 years; today it stands at 71 years. Of the roughly 8,000 generations of Homo sapiens since our species emerged approximately 200,000 years ago, only the last four have experienced massive declines in mortality rates.

In the last 140 years there have been 106 major famines, each of which has cost more than 100,000 lives. The death toll has been particularly high in socialist countries such as the Soviet Union, China, Cambodia, Ethiopia and North Korea, killing tens of millions of people through the forced transfer of private means of production to public economies and the weaponization of hunger. On its own, the biggest socialist experiment in history, Mao’s Great Leap Forward in the late 1950s killed more than 45 million Chinese.

The number of deaths due to major famines fell to 1.4 million per year in the 1990s—not least as a result of the collapse of socialist systems worldwide and China increasingly embracing capitalism. In the first two decades of the 21st century approximately 600,000 people perished of hunger. That is equivalent to roughly 2% of the death toll from the early 20th century—despite the fact that the global population is four times larger today than it was back then.

#### Capitalism is the best weapon to combat poverty – historical correlation between economic freedom scores and extreme poverty rates prove

Ladan 19 [(Luka, the President and CEO of Zenica Public Relations and a Catalyst Policy Fellow. Prior to founding Zenica, Ladan served as Communications Director at a leading public affairs firm in Washington, D.C.) “Capitalism Remains the Best Way to Combat Extreme Poverty” Catalyst, 6/14/2019] BC

Again, America is not perfect. Poverty lingers, even here. But the status quo could be a whole lot worse: It may be difficult to become a member of the top “one percent,” but it is even harder to fall into extreme poverty.

The good fortunes of most can be traced to the free exchange of goods and services for mutual gain. While an imperfect system, capitalism remains our most effective weapon in fighting extreme poverty. As we’ve seen across continents, the freer an economy becomes, the less likely its people are to become entrapped in extreme poverty.

This can be corroborated by tracking the rise of “economic freedom,” which is related to the openness of a country’s markets and corresponding increases in living standards. Over the past 25 years, the global average economic freedom score—as calculated by the right-leaning Heritage Foundation—has increased by 3.2 percentage points, with many countries joining the ranks of at least the “moderately free.”

Indeed, global economic freedom has experienced a nearly six percent increase since 1995—after the Soviet Union’s collapse. Capitalism is more commonplace now than ever before.

And how have extreme poverty rates fared in that time? Trending down—way down.

During the early 1980s, more than 42 percent of the world’s population lived in extreme poverty (earning less than $2 a day). In the Soviet Union, for example, 20 percent of the population—over 43 million people—lived on less than 75 rubles a month (roughly $120).

Fast forward to the 21st century, and less than 10 percent of the world’s population is extremely poor—a 33 percent decrease. The left-leaning Brookings Institution estimates that someone escapes extreme poverty every 1.2 seconds.

Consider it this way: Even though the world’s population has increased by more than two billion people since 1990, the net number of extremely poor people has been slashed by nearly 1.2 billion. In today’s era of globalization, about 130,000 people rise out of poverty every single day. That’s like the entire city of New Haven, Connecticut leaving extreme poverty in a day’s time.

Or take China, which has opened many sectors of its economy in recent decades. Since 1995 alone, the Asian country’s economic freedom score increased from 52 to 58.4 points—outpacing the rest of the world. In roughly that same period of time, the Chinese economy lifted 800 million people out of extreme poverty. That’s right: 800 million Chinese people—nearly three times the U.S. population.

While still far from a “free economy,” China’s newfound openness to free-market principles is correlated with the most substantial example of poverty reduction in the history of the world. Even if correlation does not always equal causation, that accomplishment is difficult to ignore.

Granting people the freedom to voluntarily make mutually beneficial exchanges of goods and services has been the most effective anti-poverty solution to date. As more of the world allows the exercise of such freedom, expect poverty to decline even further.

### Disease good

#### Disease doesn’t cause extinction –

#### No ozone impact – other factors contribute to loss and no reason why it becoming more transmissible causes extinction because UV levels don’t impact lethality

#### Their impact evidence is bad – no reason why genomic mutations cause extinction, i.e. new COVID variants didn’t become more lethal – COVID is the benchmark, even if they warrant that diseases get worse, they haven’t won why they become existential

#### Resilience and countermeasures prevent spread – distinct from burnout

Adalja 16

Amesh Adalja is an infectious-disease physician at the University of Pittsburgh, The Atlantic, June 17, 2016, “Why Hasn't Disease Wiped out the Human Race?”, https://www.theatlantic.com/health/archive/2016/06/infectious-diseases-extinction/487514/

But when people ask me if I’m worried about infectious diseases, they’re often not asking about the threat to human lives; they’re asking about the threat to human life. With each outbreak of a headline-grabbing emerging infectious disease comes a fear of extinction itself. The fear envisions a large proportion of humans succumbing to infection, leaving no survivors or so few that the species can’t be sustained.

I’m not afraid of this apocalyptic scenario, but I do understand the impulse. Worry about the end is a quintessentially human trait. Thankfully, so is our resilience.

For most of mankind’s history, infectious diseases were the existential threat to humanity—and for good reason. They were quite successful at killing people: The 6th century’s Plague of Justinian knocked out an estimated 17 percent of the world’s population; the 14th century Black Death decimated a third of Europe; the 1918 influenza pandemic killed 5 percent of the world; malaria is estimated to have killed half of all humans who have ever lived.

Any yet, of course, humanity continued to flourish. Our species’ recent explosion in lifespan is almost exclusively the result of the control of infectious diseases through sanitation, vaccination, and antimicrobial therapies. Only in the modern era, in which many infectious diseases have been tamed in the industrial world, do people have the luxury of death from cancer, heart disease, or stroke in the 8th decade of life. Childhoods are free from watching siblings and friends die from outbreaks of typhoid, scarlet fever, smallpox, measles, and the like.

* 1. **XXX Intervening actors check**

**Zakaria 9—**Editor of Newsweek, BA from Yale, PhD in pol sci, Harvard. He serves on the board of Yale University, The Council on Foreign Relations, The Trilateral Commission, and Shakespeare and Company. Named "one of the 21 most important people of the 21st Century" (Fareed, “The Capitalist Manifesto: Greed Is Good,” 13 June 2009, http://www.newsweek.com/id/201935)

Note—Laurie Garrett=science and health writer, winner of the Pulitzer, Polk, and Peabody Prize

It certainly looks like another example of crying wolf. **After bracing ourselves for a global pandemic, we've suffered** something more like **the usual seasonal influenza**. Three weeks ago the World Health Organization declared a health emergency, warning countries to "prepare for a pandemic" and said that the only question was the extent of worldwide damage. **Senior officials prophesied that millions could be infected** by the disease. **But as of last week, the WHO had confirmed only 4,800 cases** of swine flu, with 61 people having died of it. Obviously, these low numbers are a pleasant surprise, but it does make one wonder, what did we get wrong? **Why did** the **predictions of a pandemic turn out to be so exaggerated**? Some people blame an overheated media, but it would have been difficult to ignore major international health organizations and governments when they were warning of catastrophe. I think **there is a** broader **mistake in the way we look at the world.** Once we see a problem, we can describe it in great detail, extrapolating all its possible consequences. But **we** can **rarely anticipate the human response to that crisis. Take** **swine flu. The virus** **had crucial characteristics** **that led researchers to worry that it could spread far and fast**. They described—and the media reported—what would happen if it went unchecked. **But it did not go unchecked**. **In fact, swine flu was met by an extremely vigorous response at its epicenter**, **Mexico. The Mexican government reacted quickly** and massively, quarantining the infected population, testing others, providing medication to those who needed it. **The noted expert on this subject,** Laurie **Garrett, says, "**We should all stand up and scream, **'Gracias, Mexico**!' because the Mexican people and the Mexican government have sacrificed on a level that I'm not sure as Americans we would be prepared to do in the exact same circumstances. They shut down their schools. They shut down businesses, restaurants, churches, sporting events. **They** basically paralyzed their own economy. They've suffered billions of dollars in financial losses still being tallied up, and thereby **really brought transmission to a halt." Every time one of these viruses is detected**, writers and **officials bring up the Spanish influenza** epidemic **of 1918** in which millions of people died. Indeed, during the last pandemic scare, in 2005, President George W. Bush claimed that he had been reading a history of the Spanish flu to help him understand how to respond. **But the world we live in today looks nothing like 1918. Public health-care systems are far better** and more widespread than anything that existed during the First World War. **Even Mexico, a developing country, has a first-rate public-health system**—far better than anything Britain or France had in the early 20th century.

#### Solves war

#### Large-scale diseases solve nuclear war---it’s likely now.

Barry. R. Posen 20. Ford International Professor of Political Science at MIT and Director Emeritus of the MIT Security Studies Program. 4/23/2020. “Do Pandemics Promote Peace?” https://www.foreignaffairs.com/articles/china/2020-04-23/do-pandemics-promote-peace. DOA: 9/2/2020. SIR.

As the novel coronavirus infects the globe, states compete for scientific and medical supplies and blame one another for the pandemic’s spread. Policy analysts have started asking whether such tensions could eventually erupt into military conflict. Has the pandemic increased or decreased the motive and opportunity of states to wage war? War is a risky business, with potentially very high costs. The historian Geoffrey Blainey argued in The Causes of War that most wars share a common characteristic at their outset: optimism. The belligerents usually start out sanguine about their odds of military success. When elites on both or all sides are confident, they are more willing to take the plunge—and less likely to negotiate, because they think they will come out better by fighting. Peace, by contrast, is served by pessimism. Even one party’s pessimism can be helpful: that party will be more inclined to negotiate and even accept an unfavorable bargain in order to avoid war. When one side gains a sudden and pronounced advantage, however, this de-escalatory logic can break down: the optimistic side will increase its demands faster than the pessimistic side can appease. Some analysts worry that something like this could happen in U.S.-Chinese relations as a result of the new coronavirus. The United States is experiencing a moment of domestic crisis. China, some fear, might see the pandemic as playing to its advantage and be tempted to throw its military weight around in the western Pacific. What these analysts miss is that COVID-19, the disease caused by the coronavirus, is weakening all of the great and middle powers more or less equally. None is likely to gain a meaningful advantage over the others. All will have ample reason to be pessimistic about their military capabilities and their overall readiness for war. For the duration of the pandemic, at least, and probably for years afterward, the odds of a war between major powers will go down, not up. PAX EPIDEMICA? A cursory survey of the scholarly literature on war and disease appears to confirm Blainey’s observation that pessimism is conducive to peace. Scholars have documented again and again how war creates permissive conditions for disease—in armies as well as civilians in the fought-over territories. But one seldom finds any discussion of epidemics causing wars or of wars deliberately started in the middle of widespread outbreaks of infectious disease. (The diseases that European colonists carried to the New World did weaken indigenous populations to the point that they were more vulnerable to conquest; in addition, some localized conflicts were fought during the influenza pandemic of 1919–21, but these were occasioned by major shifts in regional balances of power following the destruction of four empires in World War I.) That sickness slows the march to war iis partly due to the fact that war depends on people. When people fall ill, they can’t be counted on to perform well in combat. Military medicine made enormous strides in the years leading up to World War I, prior to which armies suffered higher numbers of casualties from disease than from combat. But pandemics still threaten military units, as those onboard U.S. and French aircraft carriers, hundreds of whom tested positive for COVID-19, know well. Sailors and soldiers in the field are among the most vulnerable because they are packed together. But even airmen are at risk, since they must take refuge from air attacks in bunkers, where the virus could also spread rapidly. Ground campaigns in urban areas pose still greater dangers in pandemic times. Much recent ground combat has been in cities in poor countries with few or no public health resources, environments highly favorable to illness. Ground combat also usually produces prisoners, any of whom can be infected. A vaccine may eventually solve these problems, but an abundance of caution is likely to persist for some time after it comes into use. Major outbreaks damage

national economies, which are the source of military power. The most important reason disease inhibits war is economic. Major outbreaks damage national economies, which are the source of military power. COVID-19 is a pandemic—by definition a worldwide phenomenon. All great and middle powers appear to be adversely affected, and all have reason to be pessimistic about their military prospects. Their economies are shrinking fast, and there is great uncertainty about when and how quickly they will start growing again. Even China, which has slowed the spread of the disease and begun to reopen its economy, will be hurting for years to come. It took an enormous hit to GDP in the first quarter of 2020, ending 40 years of steady growth. And its trading partners, burned by their dependence on China for much of the equipment needed to fight COVID-19, will surely scale back their imports. An export-dependent China will have to rely more on its domestic market, something it has been attempting for years with only limited success. It is little wonder, then, that the International Monetary Fund forecasts slower growth in China this year than at any time since the 1970s. Even after a vaccine is developed and made widely available, economic troubles may linger for years. States will emerge from this crisis with enormous debts. They will spend years paying for the bailout and stimulus packages they used to protect citizens and businesses from the economic consequences of social distancing. Drained treasuries will give them one more reason to be pessimistic about their military might. LESS TRADE, LESS FRICTION How long is the pacifying effect of pessimism likely to last? If a vaccine is developed quickly, enabling a relatively swift economic recovery, the mood may prove short-lived. But it is equally likely that the coronavirus crisis will last long enough to change the world in important ways, some of which will likely dampen the appetite for conflict for some time—perhaps up to five or ten years. After all, the world is experiencing both the biggest pandemic and the biggest economic downturn in a century. Most governments have not covered themselves with glory managing the pandemic, and even the most autocratic worry about popular support. Over the next few years, people will want evidence that their governments are working to protect them from disease and economic dislocation. Citizens will see themselves as dependent on the state, and they will be less inclined to support adventures abroad. At the same time, governments and businesses will likely try to reduce their reliance on imports of critical materials, having watched global supply chains break down during the pandemic. The result will probably be diminished trade, something liberal internationalists see as a bad thing. But for the last five years or so, trade has not helped improve relations between states but rather fueled resentment. Less trade could mean less friction between major powers, thereby reducing the intensity of their rivalries. In the Chinese context, less international trade could have positive knock-on effects. Focused on growing the domestic economy, and burdened by hefty bills from fighting the virus, Beijing could be forced to table the Belt and Road Initiative, an ambitious trade and investment project that has unnerved the foreign policy establishments of great and middle powers. The suspension of the BRI would soothe the fears of those who see it as an instrument of Chinese world domination. Interstate wars have become relatively rare since the end of World War II. The United States and the Soviet Union engaged in a four-decade Cold War, which included an intense nuclear and conventional arms race, but they never fought each other directly, even with conventional weapons. Theorists debate the reasons behind the continued rarity of great-power conflict. I am inclined to believe that the risk of escalation to a nuclear confrontation is simply too great. COVID-19 does nothing to mitigate such risks for world leaders—and a great deal to feed their reasonable pessimism about the likely outcome of even a conventional war.

#### Disease pandemics decrease the likelihood of war

Walt 20 (Stephen M. Walt is the Robert and Renée Belfer professor of international relations at Harvard University; “Will a Global Depression Trigger Another World War?”; Foreign Policy; May 13, 2020; https://foreignpolicy.com/2020/05/13/coronavirus-pandemic-depression-economy-world-war/; ERB)

By many measures, 2020 is looking to be the worst year that humankind has faced in many decades. We’re in the midst of a pandemic that has already claimed more than 280,000 lives, sickened millions of people, and is certain to afflict millions more before it ends. The world economy is in free fall, with unemployment rising dramatically, trade and output plummeting, and no hopeful end in sight. A plague of locusts is back for a second time in Africa, and last week we learned about murderous killer wasps threatening the bee population in the United States. Americans have a head-in-the-sand president who prescribes potentially lethal nostrums and ignores the advice of his scientific advisors. Even if all those things magically disappeared tomorrow—and they won’t—we still face the looming long-term danger from climate change. Given all that, what could possibly make things worse? Here’s one possibility: war. It is therefore worth asking whether the combination of a pandemic and a major economic depression is making war more or less likely. What does history and theory tell us about that question? For starters, we know neither plague nor depression make war impossible. World War I ended just as the 1918-1919 influenza was beginning to devastate the world, but that pandemic didn’t stop the Russian Civil War, the Russo-Polish War, or several other serious conflicts. The Great Depression that began in 1929 didn’t prevent Japan from invading Manchuria in 1931, and it helped fuel the rise of fascism in the 1930s and made World War II more likely. So if you think major war simply can’t happen during COVID-19 and the accompanying global recession, think again. But war could still be much less likely. The Massachusetts Institute of Technology’s Barry Posen has already considered the likely impact of the current pandemic on the probability of war, and he believes COVID-19 is more likely to promote peace instead. He argues that the current pandemic is affecting all the major powers adversely, which means it isn’t creating tempting windows of opportunity for unaffected states while leaving others weaker and therefore vulnerable. Instead, it is making all governments more pessimistic about their short- to medium-term prospects. Because states often go to war out of sense of overconfidence (however misplaced it sometimes turns out to be), pandemic-induced pessimism should be conducive to peace. Moreover, by its very nature war requires states to assemble lots of people in close proximity—at training camps, military bases, mobilization areas, ships at sea, etc.—and that’s not something you want to do in the middle of a pandemic. For the moment at least, beleaguered governments of all types are focusing on convincing their citizens they are doing everything in their power to protect the public from the disease. Taken together, these considerations might explain why even an impulsive and headstrong warmaker like Saudi Arabia’s Mohammed bin Salman has gotten more interested in winding down his brutal and unsuccessful military campaign in Yemen. Posen adds that COVID-19 is also likely to reduce international trade in the short to medium term. Those who believe economic interdependence is a powerful barrier to war might be alarmed by this development, but he points out that trade issues have been a source of considerable friction in recent years—especially between the United States and China—and a degree of decoupling might reduce tensions somewhat and cause the odds of war to recede. For these reasons, the pandemic itself may be conducive to peace. But what about the relationship between broader economic conditions and the likelihood of war? Might a few leaders still convince themselves that provoking a crisis and going to war could still advance either long-term national interests or their own political fortunes? Are the other paths by which a deep and sustained economic downturn might make serious global conflict more likely? One familiar argument is the so-called diversionary (or “scapegoat”) theory of war. It suggests that leaders who are worried about their popularity at home will try to divert attention from their failures by provoking a crisis with a foreign power and maybe even using force against it. Drawing on this logic, some Americans now worry that President Donald Trump will decide to attack a country like Iran or Venezuela in the run-up to the presidential election and especially if he thinks he’s likely to lose. This outcome strikes me as unlikely, even if one ignores the logical and empirical flaws in the theory itself. War is always a gamble, and should things go badly—even a little bit—it would hammer the last nail in the coffin of Trump’s declining fortunes. Moreover, none of the countries Trump might consider going after pose an imminent threat to U.S. security, and even his staunchest supporters may wonder why he is wasting time and money going after Iran or Venezuela at a moment when thousands of Americans are dying preventable deaths at home. Even a successful military action won’t put Americans back to work, create the sort of testing-and-tracing regime that competent governments around the world have been able to implement already, or hasten the development of a vaccine. The same logic is likely to guide the decisions of other world leaders too. Another familiar folk theory is “military Keynesianism.” War generates a lot of economic demand, and it can sometimes lift depressed economies out of the doldrums and back toward prosperity and full employment. The obvious case in point here is World War II, which did help the U.S economy finally escape the quicksand of the Great Depression. Those who are convinced that great powers go to war primarily to keep Big Business (or the arms industry) happy are naturally drawn to this sort of argument, and they might worry that governments looking at bleak economic forecasts will try to restart their economies through some sort of military adventure. I doubt it. It takes a really big war to generate a significant stimulus, and it is hard to imagine any country launching a large-scale war—with all its attendant risks—at a moment when debt levels are already soaring. More importantly, there are lots of easier and more direct ways to stimulate the economy—infrastructure spending, unemployment insurance, even “helicopter payments”—and launching a war has to be one of the least efficient methods available. The threat of war usually spooks investors too, which any politician with their eye on the stock market would be loath to do. Economic downturns can encourage war in some special circumstances, especially when a war would enable a country facing severe hardships to capture something of immediate and significant value. Saddam Hussein’s decision to seize Kuwait in 1990 fits this model perfectly: The Iraqi economy was in terrible shape after its long war with Iran; unemployment was threatening Saddam’s domestic position; Kuwait’s vast oil riches were a considerable prize; and seizing the lightly armed emirate was exceedingly easy to do. Iraq also owed Kuwait a lot of money, and a hostile takeover by Baghdad would wipe those debts off the books overnight. In this case, Iraq’s parlous economic condition clearly made war more likely. Yet I cannot think of any country in similar circumstances today. Now is hardly the time for Russia to try to grab more of Ukraine—if it even wanted to—or for China to make a play for Taiwan, because the costs of doing so would clearly outweigh the economic benefits. Even conquering an oil-rich country—the sort of greedy acquisitiveness that Trump occasionally hints at—doesn’t look attractive when there’s a vast glut on the market. I might be worried if some weak and defenseless country somehow came to possess the entire global stock of a successful coronavirus vaccine, but that scenario is not even remotely possible. If one takes a longer-term perspective, however, a sustained economic depression could make war more likely by strengthening fascist or xenophobic political movements, fueling protectionism and hypernationalism, and making it more difficult for countries to reach mutually acceptable bargains with each other. The history of the 1930s shows where such trends can lead, although the economic effects of the Depression are hardly the only reason world politics took such a deadly turn in the 1930s. Nationalism, xenophobia, and authoritarian rule were making a comeback well before COVID-19 struck, but the economic misery now occurring in every corner of the world could intensify these trends and leave us in a more war-prone condition when fear of the virus has diminished. On balance, however, I do not think that even the extraordinary economic conditions we are witnessing today are going to have much impact on the likelihood of war. Why? First of all, if depressions were a powerful cause of war, there would be a lot more of the latter. To take one example, the United States has suffered 40 or more recessions since the country was founded, yet it has fought perhaps 20 interstate wars, most of them unrelated to the state of the economy. To paraphrase the economist Paul Samuelson’s famous quip about the stock market, if recessions were a powerful cause of war, they would have predicted “nine out of the last five (or fewer).” Second, states do not start wars unless they believe they will win a quick and relatively cheap victory. As John Mearsheimer showed in his classic book Conventional Deterrence, national leaders avoid war when they are convinced it will be long, bloody, costly, and uncertain. To choose war, political leaders have to convince themselves they can either win a quick, cheap, and decisive victory or achieve some limited objective at low cost. Europe went to war in 1914 with each side believing it would win a rapid and easy victory, and Nazi Germany developed the strategy of blitzkrieg in order to subdue its foes as quickly and cheaply as possible. Iraq attacked Iran in 1980 because Saddam believed the Islamic Republic was in disarray and would be easy to defeat, and George W. Bush invaded Iraq in 2003 convinced the war would be short, successful, and pay for itself. The fact that each of these leaders miscalculated badly does not alter the main point: No matter what a country’s economic condition might be, its leaders will not go to war unless they think they can do so quickly, cheaply, and with a reasonable probability of success. Third, and most important, the primary motivation for most wars is the desire for security, not economic gain. For this reason, the odds of war increase when states believe the long-term balance of power may be shifting against them, when they are convinced that adversaries are unalterably hostile and cannot be accommodated, and when they are confident they can reverse the unfavorable trends and establish a secure position if they act now. The historian A.J.P. Taylor once observed that “every war between Great Powers [between 1848 and 1918] … started as a preventive war, not as a war of conquest,” and that remains true of most wars fought since then. The bottom line: Economic conditions (i.e., a depression) may affect the broader political environment in which decisions for war or peace are made, but they are only one factor among many and rarely the most significant. Even if the COVID-19 pandemic has large, lasting, and negative effects on the world economy—as seems quite likely—it is not likely to affect the probability of war very much, especially in the short term.

#### Pandemics promote peace AND solve war

Sebastian Mallaby 20 (Ford International Professor of Political Science at MIT and the director of MIT's Security Studies Program, 4-23-2020, "Do Pandemics Promote Peace?", Foreign Affairs, https://www.foreignaffairs.com/articles/china/2020-04-23/do-pandemics-promote-peace, accessed: 9-25-2020)//yeed

War is a risky business, with potentially very high costs. The historian Geoffrey Blainey argued in The Causes of War that most wars share a common characteristic at their outset: optimism. The belligerents usually start out sanguine about their odds of military success. When elites on both or all sides are confident, they are more willing to take the plunge—and less likely to negotiate, because they think they will come out better by fighting. Peace, by contrast, is served by pessimism. Even one party’s pessimism can be helpful: that party will be more inclined to negotiate and even accept an unfavorable bargain in order to avoid war.

When one side gains a sudden and pronounced advantage, however, this de-escalatory logic can break down: the optimistic side will increase its demands faster than the pessimistic side can appease. Some analysts worry that something like this could happen in U.S.-Chinese relations as a result of the new coronavirus. The United States is experiencing a moment of domestic crisis. China, some fear, might see the pandemic as playing to its advantage and be tempted to throw its military weight around in the western Pacific.

What these analysts miss is that COVID-19, the disease caused by the coronavirus, is weakening all of the great and middle powers more or less equally. None is likely to gain a meaningful advantage over the others. All will have ample reason to be pessimistic about their military capabilities and their overall readiness for war. For the duration of the pandemic, at least, and probably for years afterward, the odds of a war between major powers will go down, not up.

A cursory survey of the scholarly literature on war and disease appears to confirm Blainey’s observation that pessimism is conducive to peace. Scholars have documented again and again how war creates permissive conditions for disease—in armies as well as civilians in the fought-over territories. But one seldom finds any discussion of epidemics causing wars or of wars deliberately started in the middle of widespread outbreaks of infectious disease. (The diseases that European colonists carried to the New World did weaken indigenous populations to the point that they were more vulnerable to conquest; in addition, some localized conflicts were fought during the influenza pandemic of 1919–21, but these were occasioned by major shifts in regional balances of power following the destruction of four empires in World War I.)

That sickness slows the march to war is partly due to the fact that war depends on people. When people fall ill, they can’t be counted on to perform well in combat. Military medicine made enormous strides in the years leading up to World War I, prior to which armies suffered higher numbers of casualties from disease than from combat. But pandemics still threaten military units, as those onboard U.S. and French aircraft carriers, hundreds of whom tested positive for COVID-19, know well. Sailors and soldiers in the field are among the most vulnerable because they are packed together. But even airmen are at risk, since they must take refuge from air attacks in bunkers, where the virus could also spread rapidly.

Ground campaigns in urban areas pose still greater dangers in pandemic times. Much recent ground combat has been in cities in poor countries with few or no public health resources, environments highly favorable to illness. Ground combat also usually produces prisoners, any of whom can be infected. A vaccine may eventually solve these problems, but an abundance of caution is likely to persist for some time after it comes into use.

Major outbreaks damage national economies, which are the source of military power.

#### Ceasefires and peace talks – COVID proves that pandemics incentivize them to avoid disease spread which caps global escalation.

Deirdre Shesgreen 20. Foreign Affairs Reporter at USA Today. 4/28/2020. “'War and disease travel together': Why the pandemic push for a global cease-fire is gaining ground.” https://www.usatoday.com/story/news/world/2020/04/28/coronavirus-un-secretary-wants-global-cease-fire-amid-pandemic/5163972002/. DOA: 9/4/2020. SIR.

When the head of the United Nations first called for a “global cease-fire” on March 23, it seemed like a quixotic quest that would fall on the deaf ears of warring guerrillas, militant terrorists and belligerent governments across the globe. But over the past month, fighters from Colombia to Ukraine have signaled a willingness to put down their weapons as the world confronts a deadly pandemic that could devastate civilian populations and armies alike. The 15-member U.N. Security Council may vote as early as this week on a resolution that demands an “immediate cessation of hostilities in all countries on its agenda” and calls for armed groups to engage in a 30-day cease-fire, according to a draft of the measure obtained by USA TODAY. Its fate is uncertain, and experts say it comes with many caveats and exceptions – including a loophole that could allow Russia to continue bombing civilians in Syria. Right now, world powers are still quibbling over several provisions. The Trump administration has objected to any language expressing support for the World Health Organization, among other provisions – disputes that could sink or stall the effort. President Donald Trump has blasted the WHO being biased toward China and accepting Beijing's statements about the coronavirus outbreak at face value. A State Department official declined to comment on the draft, citing ongoing negotiations. The official, who was not authorized to speak on the record, said the Trump administration supports the call for a global cease-fire but wants to ensure it will not hinder U.S. counterterrorism missions. If it passes, experts say its impact could be significant – albeit not sweeping – during an otherwise bleak moment of global crisis. “This is not a piece of paper that’s going to save the planet, and it’s not even going to stop some of the nasty wars that are burning out there,” said Richard Gowan, an expert on the United Nations and peacekeeping with the International Crisis Group, a nonpartisan organization that seeks to prevent conflict. “But it’s at least something which could help ease middle-sized and smaller conflicts in countries ranging from Colombia to Sudan, where we know that armed groups are actually interested in pausing violence and talking about peace during the COVID crisis.” It could also help staunch the flow of refugees in some war-ravaged countries – and thus slow the spread of COVID-19, said Barry Posen, an international professor of political science at the Massachusetts Institute of Technology. "War and disease travel together and are usually causative," Posen said. While a global cease-fire may sound lofty and idealistic, he said, it's also quite practical, particularly in places like Syria and Yemen, where health care is scarce and civilians are extremely vulnerable to disease. "The intrusion of COVID into that situation would make what's already a horror show into an even bigger horror show," he said. "If you can do a little something to suppress these wars at the moment, you would also be doing a little something to suppress the disease." And because these conflicts are also producing refugees, it could help limit the further spread of the illness if civilians are not forced to flee conflict zones. In this handout image released by the United Nations, U.N. Secretary-General Antonio Guterres holds a virtual press conference on April 3, 2020, at UN headquarters in New York. Guterres Friday renewed his call for a global cease-fire, urging all parties to conflict to lay down arms and allow war-torn nations to combat the coronavirus pandemic. "The worst is yet to come," Guterres said, referring to countries beset with fighting like Syria, Libya and Yemen. "The COVID-19 storm is now coming to all these theatres of conflict." The United Nation's secretary-general, , has used both lofty rhetoric and harsh reality in his pitch for the cease-fire. "There should be only one fight in our world today: our shared battle against COVID-19," he said in an April 3 news briefing on his effort. French President Emmanuel Macron has also championed the cease-fire proposal. So far, about 16 armed groups and more than 100 countries have endorsed the measure, according to an informal tally kept by U.N. officials. A few examples: In Colombia, a left-wing rebel group known as the ELN agreed to a cease-fire starting April and said it would consider reviving peace talks with the government. In Yemen, one side of that brutal war – the Saudi Arabia-led coalition – agreed to a unilateral cease-fire for at least a month, to help control the spread of coronavirus in a country already ravaged by starvation and other diseases. The Houthis, backed by Iran, have not yet signed on. In Syria, the Kurdish-led Syrian Democratic Forces agreed to a cease-fire, saying its fighters would defend themselves against attacks but not engage in offensive military action. “We hope that this humanitarian truce will help to open the door for dialogue and political solution and to put an end to the war in the world and Syria,” the SDF said in a statement.