# Trips – St Marks – 1NC

## 1 (no matter what)

#### Interpretation: the aff must disclose the plan text before the round. To clarify, disclosure can occur on the 2021-22 NDCA wiki or over a verified message.

#### Violation: they didn't.

#### Standards:

#### 1. Prep and Clash—two internal links—

#### a. Neg Prep—4 minutes of prep is not enough to put together a coherent 1nc or update generics—30 minutes is necessary to learn a little about the affirmative and piece together what 1nc positions apply and cut and research their applications to the affirmative which is k2 fairness.

#### b. Aff Quality—plan text disclosure discourages cheap shot affs. If the aff isn't inherent or easily defeated by 20 minutes of research, it should lose—this will answer the 1ar's claim about innovation—with 30 minutes of prep, there's still an incentive to find a new strategic, well justified aff, but no incentive to cut a horrible, incoherent aff that the neg can't check against the broader literature.

#### 2. Rigorous Scrutiny — we were deprived of the opportunity to research and prepare a response to the case. Secrecy undermines rejoinder and prevents meaningful testing which is the only unique impact to debate.

#### Paradigm:

#### Fairness – Debate is a competitive activity governed by rules. You can’t evaluate who did better debating if the round is structurally skewed, so fairness is a gateway to substantive debate.

#### DTD – Time spent on theory cant be compensated for, the 1nc was already skewed, and its key to deterring abuse.

#### Prefer Competing interps -

#### 1. reasonability is arbitrary and invites judge intervention/

#### 2. it Causes a race to the bottom where debaters push the limit as to how reasonably abusive, they can be.

#### 3. Specifically on disclosure debates – there are certain norms that need to be met + using reasonability justifies people getting away with not disclosing

#### 4. Even if you default to reasonability – this was excessively unreasonable – literally nothing to go off of means we weren’t able to engage

#### No RVI’s -

#### 1. Chills some debaters from reading theory against abusive postions.

#### 2. incentivizes theory baiting where you can just bait theory to win.

## 3

## 1NC

#### Interpretation: The aff may not defend WTO member nations reducing intellectual property protections for a subset of medicines.

#### **Violation:**

#### Standards:

#### 1. Limits – you can pick anything from COVID vaccines to HIV/AIDS to random biotech to insulin treatments and there’s no universal disad since each one has a different function and implication for health, tech, and relations – explodes neg prep and leads to random medicine of the week affs which makes cutting stable neg links impossible.

FDA 20 [(U.S. Food and Drug Administration, federal agency of the Department of Health and Human Service) “Fact Sheet: FDA at a Glance,” 11/18/2020] JL

There are over 20,000 prescription drug products approved for marketing. FDA oversees over 6,500 different medical device product categories. There are over 1,600 FDA-approved animal drug products. There are about 300 FDA-licensed biologics products.

#### 2. TVA – read the aff as an advantage to a whole rez aff.

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## 2 (no matter what)

#### Ethics must begin a priori:

#### 1. Uncertainty – our experiences are inaccessible to others which allows people to say they don’t experience the same, however a priori principles are universally applied to all agents.

#### 2. Bindingness – I can keep asking “why should I follow this” which results in skep since obligations are predicated on ignorantly accepting rules. Only reason solves since asking “why reason?” requires reason which concedes its authority and equally proves agency as constitutive

#### That means we must universally will maxims— any non-universalizable norm justifies someone’s ability to impede on your ends.

#### Thus, the standard is consistency with the categorical imperative.

#### Prefer the standard:

#### A - freedom is the key to the process of justification of arguments. Willing that we should abide by their ethical theory presupposes that we own ourselves in the first place. Thus, it is logically incoherent to justify the neg arguments/standard without first willing that we can pursue ends free from others

#### B - Frameworks are topicality interps of the word ought so they should be theoretically justified. Prefer on resource disparities—a focus on evidence and statistics privileges debaters with the most preround prep which excludes lone-wolfs who lack huge evidence files. A debate under my framework can easily be won without any prep since huge evidence files aren’t required.

**Negate** -

#### 1 - The aff encourages free riding- that treats people as ­means to an end and takes advantage of their efforts which violates the principle of humanity

**Van Dyke 2** Raymond Van Dyke, 7-17-2018, "The Categorical Imperative for Innovation and Patenting," IPWatchdog, <https://www.ipwatchdog.com/2018/07/17/categorical-imperative-innovation-patenting/id=99178/> SJ//DA recut SJKS

Also, **allowing the free taking of ideas, content and valuable data, i.e., the fruits of individual intellectual endeavor**, would disrupt capitalism in a radical way. **The resulting more secretive approach in support of the above free-riding Statement** would be akin to a Communist environment **where the State owned everything and the citizen owned nothing, i.e., the people “consented” to this. It is, accordingly, manifestly clear that no reasonable and supportable Categorical Imperative can be made for the unwarranted theft of property, whether tangible or intangible,** apart from legitimate exigencies.

#### 2 - IPs are a necessary check on companies free-riding off associations of quality.

Wong et al 20 [Liana, Ian, and Shayerah; Analyst in International Trade and Finance; Specialist in International Trade and Finance; Specialist in International Trade and Finance; “Intellectual Property Rights and International Trade,” \*Updated\* 5/12/20; CRS; <https://www.everycrsreport.com/files/20200512_RL34292_2023354cc06b0a4425a2c5e02c0b13024426d206.pdf>] Justin

Trademark protection in the United States is governed jointly by state and federal law. The main federal statute is the Lanham Act of 1946 (Title 15 of the United States Code). Trademarks permit the seller to use a distinctive word, name, symbol, or device to identify and market a product or company. Marks can also be used to denote services from a particularly company. The trademark allows quick identification of the source of a product, and for good or ill, can become an indicator of a product's quality. If for good, the trademark can be valuable by conveying an instant assurance of quality to consumers. Trademark law serves to prevent other companies with similar merchandise from free-riding on the association of quality with the trademarked item. Thus, a trademarked good may command a premium in the marketplace because of its reputation. To be eligible for a trademark, the words or symbol used by the business must be sufficiently distinctive; generic names of commodities, for example, cannot be trademarked. Trademark rights are acquired through use or through registration with the PTO.

## 3 (vs affs that are all countries)

#### CP Text: The member nations of the World Trade Organization except for the People’s Republic of China should \_\_\_\_\_\_\_\_\_\_

#### Despite growing rivalry, US-China economic interdependence strong now. Exchange of tech know-how, collaboration science research, and massive US-China STEM pipeline improving relations – but it can easily collapse.

Hass 21[Ryan Hass (Senior Fellow - Foreign Policy, Center for East Asia Policy Studies, John L. Thornton China Center The Michael H. Armacost Chair Chen-Fu and Cecilia Yen Koo Chair in Taiwan Studies Nonresident Fellow, Paul Tsai China Center, Yale Law School), 8-12-2021, "The “new normal” in US-China relations: Hardening competition and deep interdependence," Brookings, <https://www.brookings.edu/blog/order-from-chaos/2021/08/12/the-new-normal-in-us-china-relations-hardening-competition-and-deep-interdependence/> // belle]

The intensification of U.S.-China competition has captured significant attention in recent years. American attitudes toward China have become more negative during this period, as anger has built over disruptions resulting from the COVID-19 pandemic, Beijing’s trampling of Hong Kong’s autonomy, human rights violations in Xinjiang, and job losses to China. Amidst this focus on great power competition, two broader trends in the U.S.-China relationship have commanded relatively less attention. The first has been the widening gap in America’s and China’s overall national power relative to every other country in the world. The second has been the continuing thick interdependence between the United States and China, even amidst their growing rivalry. Even on economic issues, where rhetoric and actions around decoupling command the most attention, trade and investment data continue to point stubbornly in the direction of deep interdependence. These trends will impact how competition is conducted between the U.S. and China in the coming years. SEPARATING FROM THE PACK As America’s unipolarity in the international system has waned, there has been renewed focus on the role of major powers in the international system, including the European Union, Russia, India, and Japan. Each of these powers has a major population and substantial economic weight or military heft, but as my Brookings colleague Bruce Jones has observed, none have all. Only the United States and China possess all these attributes. The U.S. and China are likely to continue amassing disproportionate weight in the international system going forward. Their growing role in the global economy is fueled largely by both countries’ technology sectors. These two countries have unique traits. These include world-class research expertise, deep capital pools, data abundance, and highly competitive innovation ecosystems. Both are benefitting disproportionately from a clustering effect around technology hubs. For example, of the roughly 4,500 artificial intelligence-involved companies in the world, about half operate in the U.S. and one-third operate in China. According to a widely cited study by PricewaterhouseCoopers, the U.S. and China are set to capture 70% of the $15.7 trillion windfall that AI is expected to add to the global economy by 2030. The United States and China have been reinvesting their economic gains to varying degrees into research and development for new and emerging technologies that will continue to propel them forward. While it is not foregone that the U.S. and China will remain at the frontier of innovation indefinitely, it also is not clear which other countries might displace them or on what timeline. Overall, China’s economy likely will cool in the coming years relative to its blistering pace of growth in recent decades, but it is not likely to collapse. DEEP INTERDEPENDENCE At the same time, bilateral competition between the United States and China also is intensifying. Even so, rising bilateral friction has not – at least not yet – undone the deep interdependencies that have built up between the two powers over decades. In the economic realm, trade and investment ties remain significant, even as both countries continue to take steps to limit vulnerabilities from the other. For example, Chinese regulators have been asserting greater control over when and where Chinese companies raise capital; Beijing’s recent probe of ride-hailing app Didi Chuxing provides but the latest example. China’s top leaders have been emphasizing the need for greater technology “self-sufficiency” and have been pouring billions of dollars of state capital into this drive. Meanwhile, U.S. officials have been seeking to limit American investments from going to Chinese companies linked to the military or surveillance sectors. The Security and Exchange Commission’s scrutiny of initial public offerings for Chinese companies and its focus on ensuring Chinese companies meet American accounting standards could result in some currently listed Chinese companies being removed from U.S. exchanges. Both countries have sought to disentangle supply chains around sensitive technologies with national security, and in the American case, human rights dimensions. U.S. officials have sought to raise awareness of the risks for American firms of doing business in Hong Kong and Xinjiang. Even so, U.S.-China trade and investment ties remain robust. In 2020, China was America’s largest goods trading partner, third largest export market, and largest source of imports. Exports to China supported an estimated 1.2 million jobs in the United States in 2019. Most U.S. companies operating in China report being committed to the China market for the long term. U.S. investment firms have been increasing their positions in China, following a global trend. BlackRock, J.P. Morgan Chase, Goldman Sachs, and Morgan Stanley have all increased their exposure in China, matching similar efforts by UBS, Nomura Holdings, Credit Suisse, and AXA. The Rhodium Group estimates that U.S. investors held $1.1 trillion in equities issued by Chinese companies, and that there was as much as $3.3 trillion in U.S.-China two-way equity and bond holdings at the end of 2020. One leg of the U.S.-China economic relationship that has atrophied in recent years has been China’s flow of investment into the United States. This has largely been a product of tightened capital controls in China, growing Chinese government scrutiny of its companies’ offshore investments, and enhanced U.S. screening of Chinese investments for national security concerns. Another area of U.S.-China interdependence has been knowledge production. As U.S.-China technology expert Matt Sheehan has observed, “With the rise of Chinese talent and capital, the exchange of technological know-how between the United States and China now takes place among private businesses and between individuals.” Leading technology companies in both countries have been building research centers in the other. Alibaba, Baidu, and Tencent have all opened research centers in the United States, just as Apple, Microsoft, Tesla, and other major American technology companies rely upon engineering talent in China. In science collaboration, The Nature Index ranks the joint research between the two countries as the world’s most academically fertile. U.S.-China scientific collaboration grew by more than 10% each year on average between 2015 and 2019. Even following the global spread of COVID-19, American and Chinese experts collaborated more during the past year than over the previous five years combined. This has led to over 100 co-authored articles in leading scientific journals and frequent joint appearances in science-focused workshops and webinars. China also is the largest source of international students in the United States. In the 2019-20 year, there were over 370,000 Chinese students in the U.S., representing 34% of international students in colleges and universities. Up until now, many of the top Chinese students have stayed in the United States following graduation and contributed to America’s scientific, technological, and economic development. It remains to be seen whether this trend will continue.

#### Plan hurts US-China relations – means China goes back on it’s promise to regulate IP violations and draws in U.S. crackdown.

Shape 21 [Steven M. Shape; registered patent attorney and electrical engineer who has represented preeminent technology companies in complex, high-stakes Intellectual Property litigation; 2-19-2021, "IP Law Looms Large Over U.S.-China Relations," No Publication, [https://www.mondaq.com/trademark/1038030/ip-law-looms-large-over-us-china-relations //](https://www.mondaq.com/trademark/1038030/ip-law-looms-large-over-us-china-relations%20//) belle]

The U.S. and China were indisputably the two largest parties in the global trade war that consumed much of the last several years. Particularly between early 2018 and late 2019, it seemed as if one could hardly go a week, if that, without hearing something about tariffs, exports, imports, steel, soybeans, then-President Donald Trump, President Xi Jinping and the like. Accusations regarding violations of Intellectual Property law were among the biggest flashpoints, and ultimately, China announced new regulations concerning IP protection in November 2019 as a conciliatory move. Nearly 14 months later, newly inaugurated President Joe Biden has yet to fully clarify his administration's stance toward China. However, it is inevitable that IP rights and their preservation will factor into negotiations between the two economic giants. A look back at the proposed reforms (and their effects) Reports from CNN at the time claimed that China's prospective IP law reforms focused on making the penalties for IP infringement more strict. It would also put the government's increasingly modernized tech infrastructure to use in the discovery and prosecution of such crimes. Beyond that, the proposal carried few specifics. Although it is unclear whether Beijing's gambit worked as the deciding factor for Washington, it certainly did not fail. The two nations agreed in principle on "Phase One" of a new trade agreement December 12, 2019, per The Washington Post, and formalized the deal about a month later. The U.S. pledged not to impose further tariffs and roll back existing import taxes in return for China's IP reforms and agreement to buy American goods. In the 14 months that followed, so much changed. COVID-19's devastating impact on human life and the global economy made it difficult to gauge the positive effects of the tariff relief or IP reform. A report by the South China Morning Post found that China did not meet its import goal for 2020, with some analysts concluding the Phase One target was unrealistic. On the IP front, a Hong Kong news provider noted that Beijing had drafted some specific guidance to protect pharmaceutical patents, trade secrets and copyrights, but it was unclear how well they were being implemented. Additionally, a January 2021 report by the U.S. Patent and Trademark Office (USPTO) found that Chinese policies which offered subsidies for certain trademark and patent applications helped motivate a glut of fraudulent and bad-faith filings in the last few years. The bigger picture of China's IP law A casual observer or someone just learning of this issue might assume that until recently, China had little or no IP laws on the books. Of course, that is not true. However, there are many factors at play complicating the matter of Chinese IP protection policies. As noted in Harvard Business Review, China is quite strict in certain aspects of IP protection: Beijing allows (and encourages) all businesses to impose non-compete agreements to help protect trade secrets and other IP assets. In addition, according to the National Law Review, two new measures were passed in 2020 specifically to combat bad-faith trademark applications, in addition to the other new guidelines being imposed by the China National Intellectual Property Administration (CNIPA) in accordance with the Phase One agreement. All that said, it would be inaccurate to describe Chinese IP law as thoroughly protective for either domestic or foreign innovators. Along with the aforementioned trademark and patent subsidies, considerable controversy stems from "forced technology transfer" policies. According to the University of Oxford's Business Law Blog, foreign companies looking to do business in China must turn over their technology to local firms or be denied the right to operate within China. This effectively means turning over the blueprints (literal or otherwise) to such technology - which is all but equivalent to surrendering the IP. It creates considerable opportunities for infringement, fraud and corruption. Also, in disputes with foreign firms, some local IP courts still markedly favor domestic organizations. Chinese government representatives often resent such accusations of bias or corruption. In their view, the deals represent friendly agreements between businesses, and courts' decisions are not politically motivated. While Oxford noted that FTT guidelines are not as pervasive now as they were a few years ago, they have yet to disappear altogether. The Biden approach: Not dissimilar, but multilateral If the new U.S. Secretary of the Treasury, Janet Yellen, is to be believed, the Biden administration will not tolerate any signs of lapses in China's IP protections. "We need to take on China's abusive, unfair and illegal practices," Yellen said to the Senate Finance Committee at her confirmation hearings. As reported by Bloomberg, she added, "[China has] been stealing intellectual property and engaging practices that give it an unfair technological advantage, including forced technology transfers. And these . are practices that we're prepared to use the full array of tools to address." Biden had expressed similar sentiments during a December interview with The New York Times. However, he also said that they would work with ally nations to "develop a coherent strategy" for addressing cases of IP infringement and other issues - a stance Yellen echoed before the Senate - instead of taking China on in a unilateral and bellicose manner. This more nuanced approach could yield greater cooperation from Beijing and help repair U.S.-China trade relations, but we will likely not know one way or the other for some time. As we saw with the trade war, conflicts between the U.S. and China can quickly escalate and have ripple effects throughout the world. It would thus be wise for all organizations doing business in China to keep themselves abreast of the country's evolving IP regulations and work with a reliable IP services provider to help establish strong protection for their intangible assets.

#### US-China war leads to extinction.

Graham T. Allison 17. Professor and director of the Harvard Kennedy School’s Belfer Center. “How America and China Could Stumble to War.” The National Interest. 4/12/2017. <https://nationalinterest.org/feature/how-america-china-could-stumble-war-20150?page=0%2C6>

In the years ahead, could a collision between American and Chinese warships in the South China Sea, a drive toward national independence in Taiwan or jockeying between China and Japan over islands on which no one wants to live spark a war between China and the United States that neither wants? It may seem hard to imagine—the consequences would be so obviously disproportionate to any gains either side could hope to achieve. Even a non-nuclear war conducted mostly at sea and in the air could kill thousands of combatants on both sides. Moreover, the economic impact of such a war would be massive. A 2016 RAND study found that, after just one year, American GDP could decline by up to 10 percent and Chinese GDP by as much as 35 percent—setbacks on par with the Great Depression. And if a war did go nuclear, both nations would be utterly destroyed. Chinese and American leaders know they cannot let that happen.¶ Unwise or undesirable, however, does not mean impossible. Wars occur even when leaders are determined to avoid them. Events or actions of others narrow their options, forcing them to make choices that risk war rather than acquiesce to unacceptable alternatives. Athens did not want war with Sparta. Kaiser Wilhelm did not seek war with Britain. Mao initially opposed Kim Il-sung’s attack on South Korea in 1950 for fear of blowback. But events often require leaders to choose between bad and worse risks. And once the military machines are in motion, misunderstandings, miscalculations and entanglements can escalate to a conflict far beyond anyone’s original intent.¶ To better understand these dangers, Washington and Beijing have developed scenarios, simulations and war games. These often begin with an unexpected incident or accident. Individuals assigned to play the hand of China or the United States take it from there. Participants in these exercises are repeatedly surprised to find how often and easily small sparks lead to large wars. Today, there are at least three plausible paths to war between the world’s two greatest powers.¶ IN WAR scenarios, analysts use basic concepts made familiar by the U.S. Forest Service. Arsonists cause only a small fraction of fires. Discarded cigarettes, smoldering campfires, industrial accidents and bolts of lightning are much more common sources. Fortunately, in the forest as well as in relations among nations, most sparks do not ignite a blaze.¶ Background conditions often determine which sparks become fires. While Smokey the Bear’s warning that “only you can prevent forest fires” teaches campers and hikers about sparks, the Forest Service posts additional warnings after long dry spells or periods of extreme heat, occasionally closing high-risk areas. Moreover, it regulates the storage of flammable chemicals, propane tanks and gas depots, becoming increasingly stringent as conditions worsen.¶ In relations between China and the United States today, relevant background conditions include geography, culture and history. “History,” Henry Kissinger observed in his first book, “is the memory of states.” China’s memory is longer than most, with the century of humiliation forming a core part of the country’s identity. Recent military engagements are also part of each state’s living memory. The Korean War and Sino-Soviet border conflict taught Chinese strategists not to back down from more powerful adversaries. Moreover, both the American and Chinese militaries acknowledge that the United States has lost, or at least failed to win, four of the five major wars it has entered since World War II.¶ The most pertinent background conditions, however, are Thucydides’s Trap and the syndromes of rising and ruling powers that China and the United States display in full. Thucydides’s Trap is the severe structural stress caused when a rising power threatens to displace a ruling one. Most contests that fit this pattern have ended badly. Over the past five hundred years, a major rising power has threatened to displace a ruling power sixteen times. In twelve of those, the result was war.¶ The rising power syndrome highlights the upstart’s enhanced sense of itself, its interests, and its entitlement to recognition and respect. The ruling power syndrome is essentially the mirror image: the established power exhibiting an enlarged sense of fear and insecurity as it faces intimations of “decline.” As in sibling rivalries, so too in diplomacy one finds a predictable progression reflected both at the dinner table and at the international conference table. A growing sense of self-importance (“my voice counts”) leads to an expectation of recognition and respect (“listen to what I have to say”) and a demand for increased impact (“I insist”). Understandably, the established power views the rising country’s assertiveness as disrespectful, ungrateful and even provocative or dangerous. Exaggerated self-importance becomes hubris; unreasonable fear, paranoia.¶ ¶ LIKE GASOLINE to a match, accelerants can turn an accidental collision or third-party provocation into war. One cluster of accelerants is captured by what Carl von Clausewitz called the “fog of war.” Extending Thucydides’s insight about war as “an affair of chances,” Clausewitz observed that “war is the realm of uncertainty. Three quarters of the factors on which action in war is based are wrapped in a fog of greater or lesser uncertainty.” This profound uncertainty can lead a commander or policymaker to act aggressively when a fuller set of facts would advise caution, and vice versa.¶ The advent of disruptive weapons that promise “shock and awe” makes the fog and uncertainty even worse. With attacks on command-and-control systems, enemies can paralyze a nation’s military command. In Desert Storm, U.S. forces demonstrated version 1.0 of this option. They destroyed Saddam Hussein’s intelligence and cut communication links to his commanders in the field. Isolated, his forces hunkered down; it was like “shooting fish in a barrel,” U.S. pilots remarked.¶ Antisatellite weapons are one accelerant that military planners expect to play a big role in any U.S.-China conflict. Long a subject of science fiction, such weapons are today a fact of life, running the gamut from kinetic ones that physically destroy their targets to quieter systems that use lasers to jam or “dazzle” satellites, rendering them inoperable. In 2007, China successfully destroyed a weather satellite, and it regularly tests its antisatellite capabilities in less dramatic fashion. Satellites provide a crucial link in almost every U.S. military endeavor, from early warning of ballistic-missile launches and providing imagery and weather forecasts to planning operations. Global positioning satellites put the “precision” in almost all the military’s precision-guided munitions and allow ships, planes and ground units to know where they are on the battlefield. The United States depends on this technology more than any of its competitors, making it a perfect target for Chinese military planners.¶ ¶ Cyberspace provides even more opportunities for disruptive technological transformations that could provide a decisive advantage, on the one hand, but might also risk uncontrolled escalation, on the other. The details of offensive cyberweapons remain heavily classified and are constantly evolving. But the public has seen glimpses of them in some cases, such as America’s cyberattack against Iran’s nuclear program or its “left-of-launch” attacks on North Korea’s missile tests. America’s primary cyberspace organizations, the National Security Agency and U.S. Cyber Command, as well as their Chinese counterparts, can now use cyberweapons to silently shut down military networks and critical civilian infrastructure like power grids. Moreover, by employing proxies and assembling an international web of compromised computers, they can disguise the origins of a cyber-operation, slowing the victim’s ability to identify the attacker.¶ Like antisatellite measures, cyberweapons could create a decisive advantage in battle by disrupting the command-and-control and targeting information on which modern militaries depend—and without bloodshed. This presents a dangerous paradox: the very action that attackers believe will tamp down conflict can appear reckless and provocative to the victims. Similarly, cyberattacks that disrupt communication would intensify the fog of war, creating confusion that multiplies the chances of miscalculation.¶ While both the United States and China now have nuclear arsenals that could survive the other’s first strike and still allow for retaliation, neither can be sure its cyber arsenals could withstand a serious cyber assault. For example, a large-scale Chinese cyberattack against the U.S. military’s networks could temporarily cripple Washington’s ability to respond in kind, or even to operate some of its critical command-and-control and surveillance systems. This creates a dangerous use-it-or-lose-it dynamic in which each side has an incentive to attack key links in the other’s computer networks before their capabilities are disabled.¶ Compared with the bluntest instruments of war, especially nuclear bombs, cyberweapons seem to offer the promise of subtlety and precision. But this promise is illusory. Increased connectivity among systems and devices creates a domino effect. Unable to determine how the hacking of one system may affect others, attackers would find it difficult to narrowly tailor the effects of their operation and avoid unintended escalation. In 2016, 180,000 Internet-connected industrial control systems were operating around the world. Along with the proliferation of the “Internet of Things,” which encompasses some ten billion devices worldwide, the number of enticing targets is growing rapidly.¶ Another accelerant might involve compromising the confidentiality of sensitive networks. Some are obvious, such as those that operate nuclear command and control. Each side, however, may perceive other actions quite differently. Take China’s “Great Firewall,” a collection of hardware and software that enables Beijing to monitor and block vast segments of online content. Washington could disable a system essential to the Great Firewall, intending it as a modest, private warning. But for Chinese leaders who regard the ability to control citizens’ access to information as vital, the operation could be misconstrued as the tip of a spear aimed at regime change.¶ Given these background conditions, potential sparks can be frighteningly mundane. Escalation can occur rapidly. The following three scenarios show just how easily the United States and China can stumble into a war that each side hopes to avoid.¶ ¶ CURRENTLY, AMERICAN and allied warships and aircraft are operating in greater proximity to their Chinese counterparts than ever before. U.S. Navy guided-missile destroyers periodically conduct freedom-of-navigation operations near Chinese-controlled islands in the disputed waters of the South China Sea.¶ Suppose that during routine operations an American destroyer passes near Mischief Reef, one of the newly constructed islands where China has built runways for aircraft and installed air and missile defenses. As the ship nears the contested site, Chinese coast guard vessels harass the destroyer, just as they did during the USS Cowpens incident in 2013. Unlike that encounter, however, the U.S. destroyer is unable to swerve in time. It collides with a Chinese ship and sinks it, killing all on board.¶ ¶ The Chinese government now has three options. The dovish course would be to avoid escalation by allowing the American destroyer to leave the area and to protest its actions through diplomatic channels. At the other end of the spectrum, it could adopt an eye-for-an-eye approach and sink the destroyer using aircraft or missiles stationed on Mischief Reef. By refusing to be the “chicken,” while also not wanting to escalate, Beijing could opt for what it believes is a middle course. As the U.S. destroyer attempts to leave the area, a PLA Navy cruiser blocks its way, insisting that the destroyer entered Chinese territorial waters and demanding that its crew surrender and face justice for the deaths of the coast-guard personnel.¶ China believes it is deescalating the situation by allowing for a diplomatic solution, akin to the deal that permitted an American crew to go free after a crash landing near Hainan Island sixteen years ago. The background conditions have changed since that incident. From a U.S. perspective, China’s reckless harassment of the destroyer caused the collision in the first place. China’s attempt to arrest American sailors in international waters would undermine the principles of the law of the sea. Surrendering would have far-reaching repercussions: if the U.S. military will not stand up to China to defend operations conducted by its own navy, what message does that send to America’s allies, including Japan and the Philippines?¶ Not willing to undermine its credibility by surrendering, the destroyer could simply sink the Chinese cruiser blocking its path. Alternatively, to avoid further bloodshed and to show a degree of sensitivity to the nationalistic pressures Chinese leaders face at home, the United States could use a show of force to get the cruiser to back down peacefully. U.S. Pacific Command in Hawaii, in consultation with leaders in Washington, could order nearby aircraft to fly to the area, send an aircraft carrier stationed in Japan toward the South China Sea, and forward-deploy B-2 bombers to Guam. American officials believe these actions will signal their seriousness without risking any further escalation.¶ Events look different to Beijing, especially amid the fog of war. As China sees it, the United States has already sunk a Chinese vessel. Now scores of American aircraft are aloft, threatening attacks on the Chinese cruiser, other naval vessels, or military installations on nearby islands. Mindful of public opinion, Chinese leaders are especially conscious that any further bloodshed inflicted by the United States would force them to retaliate aggressively.¶ But events are running beyond Beijing’s control. As U.S. fighter jets rush to the scene to assist the stranded destroyer, a Chinese antiaircraft battery panics and fires on the oncoming aircraft. The U.S. aircraft take desperate evasive action, and the destroyer begins firing on Chinese antiaircraft sites on the island. Under attack, the Chinese commander on the island bombards the destroyer with antiship missiles. The missiles hit their intended target, killing hundreds of American sailors and sinking the ship. Those who escape are now stranded in small lifeboats.¶ Chinese leaders are desperate to avoid a full-scale war with the United States, but also cannot admit that their chain of command broke down. They claim their actions were a proportionate and defensive response because the American destroyer was the aggressor. Officials in Washington are stunned that China has sunk a $3 billion vessel and killed hundreds of American sailors. Though wary of going to war with China, those in the Situation Room cannot back down: video of the ship’s wreckage and stranded U.S. sailors on cable news and social media has made that impossible. Many in Congress are calling on the administration to authorize war plans based on the doctrine formerly named Air-Sea Battle, which calls for massive air strikes against missile and radar systems on the Chinese mainland. Realizing that attacks on China’s mainland would trigger war, the president authorizes Pacific Command to instead destroy China’s military bases on disputed islands in the South China Sea. The president reasons that this is a proportionate response, since these islands were directly responsible for the sinking of the destroyer. Furthermore, eliminating these military bases will allow U.S. ships to rescue the sailors stranded nearby. Most important, such an action would target only China’s artificial islands, leaving its mainland untouched.¶ President Xi Jinping and other Chinese officials do not make this distinction. For years they have told the public that China has undisputed sovereignty over these islands. They are an integral part of China proper, and America has just attacked them. (Americans who scoff should recall that the Japanese attack on Pearl Harbor struck neither the mainland nor even a U.S. state, yet still rallied a nation to war.) Many in China are demanding that Xi order the PLA to destroy U.S. military bases in Guam, Japan and elsewhere in the Pacific. Some want China to attack the United States itself. No one is calling for China to exercise restraint. As millions of its citizens’ social-media postings are reminding the government, after its century of humiliation at the hands of sovereign powers, the ruling Communist Party has promised: “never again.”¶ Still, President Xi clings to the hope that war can be avoided, an impossibility if China begins attacking U.S. military bases in Guam or Japan, killing soldiers and civilians and triggering retaliatory attacks on the Chinese mainland. Seeking a proportionate response to the U.S. attack on China’s island bases, Xi instead approves an alternative plan: using lasers, electronic and kinetic weapons to destroy or disable all U.S. military satellites in orbit above the crisis area, and using cyberattacks to cripple American command-and-control systems throughout the Asia-Pacific. The goal is to deescalate: Xi hopes that the United States will be shocked into backing down.¶ But from the American perspective, these “blinding” attacks are indistinguishable from the first stage of a coordinated attack on the U.S. aircraft carrier and its strike group sailing from Japan—an event for which the PLA has spent decades developing its “carrier-killer” antiship ballistic missiles. The ninety-thousand-ton carrier, a floating city of 5,500 sailors that the United States describes as sovereign American territory, is simply too big to lose. The president is not willing to take the risk. On the advice of the Joint Chiefs of Staff, the president reluctantly approves the only plan ready on short notice that has a chance of saving the carrier: a war plan based on Air-Sea Battle.¶ Using those assets still operational after the Chinese attack, the United States military begins destroying China’s “kill chains,” the various satellite and surveillance systems that allow Beijing to accurately target American carriers with its antiship missiles. It also launches massive cruise missile and stealth bomber attacks on PLA missile sites and air bases on the Chinese mainland, which could at any moment be used to sink U.S. vessels anywhere within the first island chain.¶ The attacks provoke exactly what they intended to avoid. Its mainland now under attack, and the targeting systems needed to operate China’s antiship weapons about to be lost, China must use them or lose them. Xi authorizes attacks on all U.S. warships within range, including the carrier group. American aircraft and naval escorts intercept Chinese bombers and fighter jets flying to the carrier, but a swarm of DF-21D ballistic missiles—the so-called carrier killers—prove too much to handle. Enough reach their target to sink the carrier, killing most of the 5,500 sailors on board—far more than died during Pearl Harbor. The dynamics of playing chicken with cyber and space weapons over the South China Sea has transformed a tiny spark into a roaring fire.¶ ¶ IF TAIWAN were an independent nation, it would be among the most successful countries in the world. Its hardworking population of twenty-three million has developed a market economy twice the size of the Philippines, Thailand or Vietnam. Although many in Taiwan want independence, China views it as a province. Beijing is prepared to do whatever it takes to keep Taipei from asserting its sovereignty. No other country has been prepared to fight China over the matter.¶ Suppose, however, that the Chinese government were to substantially increase repression at home, including in Hong Kong, where China promised to maintain considerable autonomy and freedom when Britain returned control of the city in 1997. Enraged that the Chinese government is backtracking on its promises, residents of Hong Kong take to the streets to demand that Beijing uphold its commitment to “One Country, Two Systems.” As the protests drag on for weeks with no resolution in sight, Xi orders the military to do what it did in Tiananmen Square in 1989: crush the protests.¶ The ensuing violence shocks the Taiwanese, particularly the younger generation. Pro-independence and anti-Beijing sentiment soars. In this atmosphere, the Taiwanese president is emboldened to ramp up rhetoric emphasizing her people’s hard-won rights and democracy. Her political allies go further, insisting that what has occurred in Hong Kong proves that Taiwan can never guarantee its citizens’ freedom without becoming a sovereign, independent country. To signal disapproval of Chinese regression in Hong Kong, the American president pointedly announces his respect for the Taiwanese president’s strong stance and declares that the 1979 Taiwan Relations Act fully commits the United States to defend Taiwan against a Chinese invasion.¶ This is a major break from the long-standing U.S. policy of “strategic ambiguity” on the issue, and the Taiwanese president interprets it as tacit endorsement of a move toward independence. In an interview with the New York Times , she announces that Taiwan will apply for full membership to the UN (a move that China has long opposed) and rejects the so-called 1992 Consensus, under which both parties had agreed to the One-China concept while allowing for differing interpretations of what it actually meant. To punish Taiwan’s insubordination and scare it into backing down, China conducts an enhanced version of the Third Taiwan Strait Crisis by barraging Taiwanese waters with “tests” of ballistic and cruise missiles, severely interrupting the commercial shipping that constitutes the island’s lifeline to the world. When Taipei still refuses to withdraw its membership application, China uses other weapons, including mine-laying drones, to further disrupt shipping into and out of Taiwan.¶ As a small island nation, Taiwan imports 70 percent of its food and most of its natural resources, including energy. A sustained blockade would grind its economy to a halt and cause large-scale food shortages. Despite opposition to Taiwan’s application to join the United Nations, the United States feels obliged to prevent its strangulation. Many pro-Taiwan members of Congress are demanding that the White House send aircraft carriers to Taiwan’s aid, just as Bill Clinton did during the 1995–96 crisis. But the administration knows that China’s antiship ballistic missiles would now pose a serious threat to any U.S. carriers moving into the area, and the American public has little stomach for another war.¶ Instead, U.S. Pacific Command offers to escort commercial shipping through the affected seas, a gesture of support but not of willingness to fight. The escort campaign puts U.S. warships at risk of being sunk by the Chinese missile barrage, either deliberately or accidentally—an event that could instantly kill more than one thousand Americans and spark calls for retaliation. In this scenario, a Chinese antiship missile—ostensibly fired as part of ongoing test barrages—sinks the USS John P. Murtha , an amphibious transport dock ship acting as an escort to civilian shipping. All of the nearly eight hundred sailors and marines aboard are killed—more than the United States lost in the first year of the Iraq War.¶ China insists that the sinking was accidental; the Murtha merely got in the way of a missile fired at a random patch of ocean. It reminds Washington that America accidently bombed China’s embassy in Belgrade in 1999. But in Washington, the secretary of defense and the chairman of the joint chiefs urge the president not to be deceived by this explanation. Instead they urge him to authorize the Air-Sea Battle plan to strike PLA antiship missile-launch sites on the mainland.¶ Confronted with the sinking of the Murtha, the president accedes to pressure from military and political advisers, and agrees to preemptively strike antiship and other ballistic-missile systems on the Chinese mainland. Because China’s conventional and nuclear missiles are kept in the same locations, and their command-and-control systems are intertwined, Beijing mistakenly believes the United States is trying to eliminate its nuclear arsenal in a surprise first strike. In a desperate attempt to “deescalate by escalating”—an Orwellian doctrine that is nevertheless a pillar of Russian military strategy—China fires one of its land-based, nuclear-tipped ballistic missiles into an empty tract of ocean south of Okinawa. The nuclear threshold has been crossed. And while no lives have been lost in the strike, it is but a short step from here to all-out nuclear war.¶ ¶ THE SPARK to a Sino-American clash need not initially involve American or Chinese military forces. Instead, it might result from a confrontation with or between third-party allies. Such a scenario nearly became reality in 2010, when North Korea sank the South Korean warship Cheonan, killing forty-six South Korean sailors. China supported North Korea’s denial of involvement. Seoul, meanwhile, insisted that Pyongyang be held accountable. Ultimately, the two Koreas and their allies stepped back from the brink. But with a new set of background conditions and accelerants today, it is not clear that it would be so easy to avoid war, especially if the third parties involved were less inured to the sort of slow, grinding tensions that the Korean Peninsula has endured for decades.¶ Besides South Korea, the other major U.S. ally in China’s immediate vicinity is Japan, a country with a post–World War II history of pacifism, but whose politics have become increasingly militaristic in recent years. Conservative Japanese politicians have spoken ever more stridently about revising the pacifist constitution imposed on their country by the United States. They have also been chafing against Chinese claims of sovereignty in the East and South China Seas. In a crisis involving its historical rival Beijing, any steps Tokyo takes would certainly be shaped by these memories, and by the Japanese government’s shifting attitude toward military force.¶ A likely flashpoint is the Senkaku Islands (known in China as the Diaoyu Islands), located near valuable fishing grounds, trade routes and potential oil reserves in the East China Sea. The United States controlled the islands after World War II, before returning them to Japan in the early 1970s. That same decade, China began claiming sovereignty over the islands. Chinese ships regularly pass through these waters, raising tensions between Beijing and Tokyo and risking a collision that could set off a chain reaction.¶ Consider a scenario that provided the story line for a recent war game designed by the RAND Corporation. A group of Japanese ultranationalists set sail for the Senkakus in small civilian watercraft. On social media, they explain that they are headed for Kuba Jima, one of the smaller islands, which they intend to claim and occupy on behalf of Japan. They land and begin building unidentified structures. Taking a page out of the Chinese playbook, they live stream their activities for the world to see. China reacts swiftly, its coast guard arriving within hours with officers who arrest the Japanese dissidents and take them back to the Chinese mainland for trial. Does Japan allow them to face justice in a Chinese court? It could. Instead, rather than lose face, Japan dispatches some of its own coast-guard vessels to intercept the ship carrying the ultranationalists and prevent them from being taken to China.¶ A pileup ensues as both the PLA Navy and the Japan Maritime Self-Defense Force deploy warships and fighter planes to the area. Neither side backs down. To make matters worse, some of the Japanese vessels land amphibious troops to occupy Kuba Jima, doubling down on the nationalists’ actions. A skirmish has become a military confrontation. In an urgent call, the Japanese prime minister reminds the U.S. president that Tokyo expects Washington to uphold the seven-decade-old mutual defense treaty, noting that senior officials have repeatedly confirmed that America’s commitment applies to the Senkakus.¶ As the standoff enters its third day, the president and his National Security Council must decide: Does the United States wholeheartedly respond to Japan’s appeal, putting air power over the disputed island to protect the Japanese troops now on the ground there? Or is there a more restrained course that will satisfy the Japanese without antagonizing China and further escalating the tense naval standoff? The president opts for the latter, directing the Japan-based carrier strike group to patrol outside the range of the PLA’s land-based carrier-killer missiles, but keeping aircraft and submarines close enough to aid Japanese vessels and territory if things get ugly.¶ They do. The next morning, a Chinese destroyer collides with a Japanese fishing boat in the crowded waters off the Senkakus, and soon fighter jets from both sides are provocatively buzzing their opponent’s warships. The standoff erupts into a brief, bloody naval battle as a Japanese captain, fearing for his ship’s safety, downs one of the low-flying Chinese fighters, and the PLA Navy warships, in return, sink his vessel.¶ ¶ Both sides are at the edge of war at this point, and so is the United States, which is in a position to sink Chinese vessels with its hidden attack submarines or to send its carrier’s air wing into action. At this juncture, however, before the next decision has been made, something unexpected happens. All communications between Japanese forces on and around the Senkakus and their headquarters go dark.¶ A cyberattack has severely disrupted one of the Japanese military’s command-and-control systems. The United States and Japan immediately blame China. The attacker has even left the telltale signs of the PLA’s offensive hacking unit. There is little hesitation in Washington or at U.S. Pacific Command about what to do next. To prevent the Japanese naval force from being annihilated while it is incommunicado, U.S. submarines sink three PLA Navy warships off the Senkakus with torpedoes. China, Japan and the United States have now fired their opening shots in a three-nation war.¶ But what if it was not the PLA that launched the cyberattack after all? What if it was a carefully timed false-flag operation by Russia, seeking to draw the United States and China into a conflict in order to distract Washington from its wrestling match with Moscow over Ukraine? By the time intelligence agencies around the world learn the truth, it will be too late. The Kremlin has played its hand brilliantly.¶ From the Senkakus, the war zone spreads as China attacks more Japanese vessels elsewhere in the East China Sea. Tokyo is desperate for the United States to commit its carrier strike group to the fight. If Washington makes that call, the same point of no return may well be crossed as in the collision-at-sea scenario: the destruction of one of the crown jewels of the U.S. Navy and the loss of life of all aboard could be the tragedy that the U.S. administration is forced to avenge with widening attacks on Chinese forces in a full-scale Pacific war.¶ WAR BETWEEN the United States and China is not inevitable, but it is certainly possible. Indeed, as these scenarios illustrate, the underlying stress created by China’s disruptive rise creates conditions in which accidental, otherwise inconsequential events could trigger a large-scale conflict. That outcome is not preordained: out of the sixteen cases of Thucydides’s Trap over the last five hundred years, war was averted four times. But avoiding war will require statecraft as subtle as that of the British in dealing with a rising America a century ago, or the wise men that crafted a Cold War strategy to meet the Soviet Union’s surge without bombs or bullets. Whether Chinese and American leaders can rise to this challenge is an open question. What is certain is that the fate of the world rests upon the answer.

#### Extinction – nuke war fallout creates Ice Age and mass starvation.

Steven **Starr 15**. “Nuclear War: An Unrecognized Mass Extinction Event Waiting To Happen.” Ratical. March 2015. <https://ratical.org/radiation/NuclearExtinction/StevenStarr022815.html> TG

A war fought with 21st century strategic nuclear weapons would be more than just a great catastrophe in human history. If we allow it to happen, such a war would be a mass extinction event that [ends human history](https://ratical.org/radiation/NuclearExtinction/StarrNuclearWinterOct09.pdf). There is a profound difference between extinction and “an unprecedented disaster,” or even “the end of civilization,” because even after such an immense catastrophe, human life would go on. But extinction, by definition, is an event of utter finality, and a nuclear war that could cause human extinction should really be considered as the ultimate criminal act. It certainly would be the crime to end all crimes. The world’s leading climatologists now tell us that nuclear war threatens our continued existence as a species. Their studies predict that a large nuclear war, especially one fought with strategic nuclear weapons, would create a post-war environment in which for many years it would be too cold and dark to even grow food. Their findings make it clear that not only humans, but most large animals and many other forms of complex life would likely vanish forever in a nuclear darkness of our own making. The environmental consequences of nuclear war would attack the ecological support systems of life at every level. Radioactive fallout produced not only by nuclear bombs, but also by the destruction of nuclear power plants and their spent fuel pools, would poison the biosphere. Millions of tons of smoke would act to [destroy Earth’s protective ozone layer](https://www2.ucar.edu/atmosnews/just-published/3995/nuclear-war-and-ultraviolet-radiation) and block most sunlight from reaching Earth’s surface, creating Ice Age weather conditions that would last for decades. Yet the political and military leaders who control nuclear weapons strictly avoid any direct public discussion of the consequences of nuclear war. They do so by arguing that nuclear weapons are not intended to be used, but only to deter. Remarkably, the leaders of the Nuclear Weapon States have chosen to ignore the authoritative, long-standing scientific research done by the climatologists, research that predicts virtually any nuclear war, fought with even a fraction of the operational and deployed nuclear arsenals, will leave the Earth essentially uninhabitable.

## Case

### 1NC – Framework

#### Justifying util is an independent voter –

#### 1. Util justifies atrocities since it justifies allowing us to harm some for the benefit of others – even if they spew some pain quantifiability argument that doesn’t solve since there are still instances some get great benefit from others harm.

#### 2. Util can’t justify intrinsic wrongness – We can’t know whether our action was good until we’ve evaluated the states of affairs they’ve produced since it’s based on the outcome of the action. Probability doesn’t solve because that just allows for moral error and freezes action while attempting to calculate the perfect decision.

#### 3. Util justifies death good – the absence of pleasure is not bad since there is no life to calculate its lossed value and experience its absence but the lack of pain is actively good even if that good cannot be enjoyed by anyone because it would still have net value.

#### They read morally repugnant arguments. Thus the alternative is to drop the debater, to ensure that debate remains a space safe for all – the judge has a proximal obligation to ensure inaccessible practices don’t proliferate. Accessibility is a voting issue since all aff arguments presuppose that people feel safe in this space to respond to them.

#### Decline inevitable --- China passes the US and creates their own international order --- the US could go peacefully, ushering in multipolarity, but expansionist military spending emboldens hawks to dig their heels in, causing great power war

Layne 18 Christopher Layne, Christopher Layne is Robert M. Gates Chair in Intelligence and National Security at the George Bush School of Government and Public Service at Texas A&M University “The US–Chinese power shift and the end of the Pax Americana.” International Affairs, Volume 94. Pp. 89-111. 2018. <https://www.chathamhouse.org/sites/files/chathamhouse/images/ia/INTA94_1_6_249_Layne.pdf>

The fate of international orders is closely linked to power transition dynamics. Throughout modern international history the prevailing international order has reflected the balance of power that existed at the time of its creation. When that balance changes sufficiently, the old order will be replaced by a new one. Viewed from this perspective, what are the Pax Americana’s prospects? How will China’s rise, and America’s decline, affect the international order in the years ahead? The surprising answer given by top US security studies scholars is: ‘Not much.’ The United States, so the argument goes, can ‘lock in’ the Pax Americana’s essential features, including its rules, norms and institutions.65 John Ikenberry, Stephen Brooks and William Wohlforth are the leading proponents of the lock-in thesis. Ikenberry was the first to set out the concept, arguing in After victory that a hegemon, by building an institutionalized, rules-based international order, ‘can lock-in favorable arrangements that continue beyond the zenith of its power’.66 In other words, the international order can remain intact even after the hegemonic power that created it has lost its pre-eminent position in the international political system. On this point, Ikenberry echoes Robert Keohane’s argument in After hegemony that, once a liberal international order has been established by a hegemonic power, if the hegemon declines it is possible for a small group of Great Powers to take the place of the former hegemon and collectively manage the international system.67 That is, under certain conditions ‘hegemonic stability’ can exist even if there is no hegemonic power. In Liberal Leviathan, Ikenberry built on this logic to argue that, even if the Pax Americana were to wither completely, the LRBIO would nevertheless survive. As Ikenberry put it: ‘America’s position in the global system may decline but the international order it leads can remain the dominating logic of the twenty-first century.’68 Ikenberry’s view seems to have evolved, however. In jointly authored articles in International Security and Foreign Affairs, Brooks, Ikenberry and Wohlforth embrace hegemonic stability theory.69 That is, they contend that, like all international orders, the post-1945 international order does, in fact, require a hegemonic power to maintain it—and not just any hegemon, but the United States. The logic of their argument is that the LRBIO and the Pax Americana are one and the same, and that US pre-eminence is a necessary condition for the LRBIO. According to them, the United States must exercise ‘global leadership’—the US foreign policy establishment’s code phrase for hegemony—by acting as a security provider and geopolitical stabilizer; by maintaining an open, liberal international economy; and by promoting global cooperation through upholding and revising the post-1945 liberal order—which is both ‘institutional and normative’—created by the Pax Americana.70 They also claim that the post-1945 Pax Americana ‘allows the United States to … wrap its hegemonic rule in a rules-based order’.71 This helps to conceal the actual motives of self-interest and realpolitik that underlie American hegemony. Read together, the International Security and Foreign Affairs articles by Brooks, Ikenberry and Wohlforth make clear the authors’ view that the post-1945 LRBIO is inextricably linked to US hegemony; that is, to the Pax Americana. This is in keeping with the common understanding of hegemonic stability theory. As they see it, the post-1945 international order based on American pre-eminence ‘has served the US well for the past six decades and there is no reason to give it up now’.72 The argument has special force given that, according to the— correct—logic of their argument (and of hegemonic stability theory), if American hegemony goes, the LRBIO goes with it. In their preference for maintaining the post-1945 hegemonic American international order, Brooks, Ikenberry and Wohlforth echo the renowned late nineteenthcentury British statesman Lord Salisbury. Presiding over a hegemonic Britain that was already perceptibly declining, he famously said: ‘Whatever happens will be for the worse. Therefore, it is in our interest that as little should happen as possible.’ The post-1945 international order is (or was) a concrete manifestation of America’s hegemonic status. So, of course, the US foreign policy establishment wants as little change as possible in international politics. Why would it wish otherwise, when change would inevitably be both the cause and effect of diminishing American power and influence? The United States has every incentive for wanting to prolong the post-1945 international order. After all, for most of the last 70 years or so, the US has occupied the geopolitical penthouse (‘when America ruled the world’). From that lofty height, however, the only direction it can go is down. The lock-in strategy is seductive because it holds out (or appears to hold out) the possibility that the United States can preserve the status quo—the post-1945 international order—even as the geopolitical status quo of American hegemony is changing. Lock-in is attractive—superficially—because it assumes that China’s rise will not effect a major change in the international system. Specifically, lock-in holds that China’s rise can be managed by integrating it into the post-1945 international order, and ensuring that the exercise of Chinese power takes place within that order’s rules and institutions.73 By doing so, it is claimed, the United States can offset its declining power and ‘ensure the international order it leads can remain the dominating logic of the twenty-first century’.74 Lock-in assumes that China has no interest in overturning—or significantly modifying—the post-1945 international order in which it rose and became wealthy. Certainly, China did rise within the Pax Americana’s LRBIO. However, China did not rise to preserve that American-dominated order. For some three decades (beginning with Deng Xiaoping’s economic reforms) China took a low profile in international politics, and avoided confrontation both with the United States and with its regional neighbours. Integration into the open international economy spurred China’s rapid growth. China’s self-described ‘peaceful rise’ followed the script written by Deng Xiaoping: ‘Lie low. Hide your capabilities. Bide your time.’ However, the fact that China bandwagoned with the United States in joining the international economic order did not mean that its longer-term intention was—or is—to preserve the post-1945 international order. In joining the liberal economic order, Beijing’s goal was not simply to get rich; by integrating itself into the post-1945 international order, China was able to avoid conflict with the United States until it became wealthy enough to acquire the military capabilities necessary to compete with America for regional hegemony in east Asia.75 Judging from Xi Jinping’s policy pronouncements, China’s days of biding its time and hiding its capabilities are over. Lock-in proponents argue that even as the Sino-American military and economic balance continues to tilt increasingly in Beijing’s favour, the post-1945 international order’s rules, institutions and norms will offset America’s loss of hard power. There is historical evidence that suggests this is wishful thinking. Take the case of Britain after the Second World War. Despite the dramatic weakening of Britain’s economic and financial clout caused by its efforts in the two world wars, after 1945 British leaders believed that the United Kingdom could remain one of three major world powers. In pursuit of this goal, they formulated their own version of lock-in. As the historian John Darwin puts it, officials in London thought that by transforming the Commonwealth, Britain could transition ‘from an empire of rule to an empire of influence’.76 Specifically, they believed that ‘free from the authoritarian, acquisitive and exploitative traditions of the old version of empire’, the reconfigured Commonwealth ‘would make the British connection voluntary, democratic, and mutually beneficial’.77 The reformed Commonwealth therefore would serve as the institutional instrument of continuing British world power, within which shared values and norms would bind Britain’s former colonies and dominions to London’s leadership.78 The reasons why British policy makers bought into this vision sound an awful lot like the reasons why the presentday American proponents of lock-in think it will preserve the United States’ global leadership even as its hard power erodes. Lock-in did not work for Britain following the Second World War, and there is scant reason to think it will work for the United States in the coming years of the twenty-first century. The lock-in strategy also assumes that if the Pax Americana’s institutions are reformed, Beijing (and other non-western emerging powers) will find it more attractive to remain in the post-1945 international order than to overturn it. That assumption, however, is logically flawed: achieving lock-in by reforming the existing international order presumes that the United States can have its cake (preserving the Pax Americana) and eat it too (reforming the current international system’s legacy institutions). But, as we all know, when the cake is eaten, it’s gone. Reform—at least, any kind of reform that would appeal to China—would mean the United States yielding significant power in international institutions to accommodate Beijing. However, doing so would reduce US ability to shape outcomes, diminish Washington’s voice in international institutions, and impose constraints on US autonomy in foreign and domestic policy.79 As University of Birmingham lecturer Sevasti-Eleni Vezirgiannidou observes with respect to institutional reform: ‘It is questionable whether this will really preserve US influence or rather, on the contrary, diminish it, as the United States will have to share power in a reformed order and thus will be restricted in its ability to act unilaterally.’80 The US foreign policy establishment may talk the talk of reforming the international order (and the institutions that underpin it), but it is doubtful it will walk the walk with respect to reform, because that would mean accepting a downsized American role in international politics. On the contrary, Washington’s opposition to the AIIB indicates that the United States is not prepared to see its influence in the international order diminished. And, with respect to reforming the post-1945 international order to accommodate the reality of a risen China, this is the nub of the problem: instead of preserving the Pax Americana, reform would lead to changes in the international order that would undermine it. Of course, regardless of whether there is institutional reform, the coming decades are likely to witness major changes in the international order irrespective of America’s preferences. What will happen to the international order as China continues to rise, and America’s relative power continues to decline? As Yogi Berra, the greatest of all American philosophers (immortalized in baseball’s Hall of Fame), said: ‘Making predictions is hard. Especially about the future.’ However, one thing seems pretty certain: China is not on the verge of either of ruling the world, or becoming a global hegemon comparable to the United States after the Second World War; not yet, anyway. Thus, for the next several decades (at least) it will be neither China’s world nor America’s: international leadership will be contested.81 During this period, China can be expected to act pretty much as one would expect any Great Power to act while making the shift from rising to risen: it will use its newfound power to seek a much greater voice in managing—and shaping—the international order, and its underlying norms. For example, China will want others to acknowledge its ‘core interests’, including respect for its territorial integrity and its sovereignty. Beijing has expanded the geographic scope of its core interests beyond Tibet and Taiwan to include the South and East China Seas and Xinjiang. And, reflecting its insistence that states should refrain from intervening in others’ internal affairs, preservation of its political, economic and social systems also has been defined as a core interest.82 During the period of contested international leadership there is unlikely to be wholesale abandonment of the post-1945 international institutions. For example, as one of the five permanent members of the UN Security Council, Beijing is an acknowledged part of the Great Power club. Similarly, we should not expect to see a dramatic overhaul of the international economic system. As the world’s top-ranking exporter and trading state, China benefits hugely from economic openness. However, the state plays a much greater role in China’s economy than it does in the United States and Europe. Beijing will want rules that protect its semimercantilist economic policies and also ensure that its state-owned industries are not disadvantaged. Beijing will continue pressing for an even greater voice, both for itself and for the developing world, in institutions such as the IMF and World Bank (unless or until they are superseded by new ‘made in China’ institutions). In this respect, China will position itself as the developing world’s champion—a role for which it is well suited. Like many nations in the developing world— but unlike the United States—China has been a victim of western Great Power policies of imperialism and colonialism. As such, China has a claim to prominence in constructing a new international order that reflects the values of the developing world rather than those of the United States and the West.83 Even though the international economy will remain (more or less) open, in other respects the international system is likely to become much less liberal politically. The Chinese Communist Party’s 19th Congress demonstrated that China is not converging with the West: it is not going to become a democracy any time soon—if ever. Consequently, as China’s role in shaping the international agenda increases, democracy and human rights will become less salient. China will almost certainly try to change the norms that favour democracy promotion, ‘humani tarian’ intervention, human rights and the Responsibility to Protect. Beijing will resist norms that divide states into two camps, ranging democratic ‘good guys’ against non-democratic ‘bad guys’.84 Instead, it will offer its policy of ‘market authoritarianism’ to developing states as a better model of political, social and economic development than the US model based on the Washington Consensus. As its power continues to increase, China will seek to recast the world order in a way that not only advances its interests but also acknowledges both its enhanced power and its claims to status and prestige equal to those of the declining hegemon.85 For now, Beijing is (mostly) ‘working within the system’ to revise the post-1945 international order while simultaneously laying the groundwork for an alternative international order that eventually could displace the Pax Americana. As a 2007 report by the Center for a New American Security concluded: Rather than seeking to weaken or confront the United States directly, Chinese leaders are pursuing a subtle, multifaceted, long-term grand strategy that aims to derive as many benefits as possible from the existing international system while accumulating the economic wherewithal, military strength, and soft power resources to reinforce China’s emerging position as at least a regional great power.86 Even as it stays within the post-1945 international order, Beijing is not doing so to preserve it. In this sense, as Martin Jacques has observed, China is playing a double game. It is operating ‘both within and outside the existing international system while at the same time, in effect, sponsoring a new China-centric international system which will exist alongside the present system and probably slowly begin to usurp it’.87 The creation of the AIIB, which Beijing intends should ultimately eclipse the IMF and World Bank, is a good example of this strategy. American scholars and policy-makers believe that a lock-in strategy can be employed to head off any Chinese attempt to create a new international order, or to create a parallel order. They believe this because they have imbued the concept of a ‘rules-based, institutionalized, liberal international order’ with a talismanic quality. In so doing they have air-brushed Great Power politics out of the picture. As they see it, rules and institutions are politically neutral and, ipso facto, beneficial for all. Hence, they can be an effective substitute for declining hard power. However, rather than existing separately from the balance of power, rules, norms and institutions reflect it. Hence the world is no more likely to continue upholding the Pax Americana once US power declines than Britain’s dominions and former colonies were inclined to perpetuate the empire after the Second World War. The fate of the Pax Americana, and that of the international order, will be determined by the outcome of the Sino-American rivalry As the British scholar E. H. Carr observed, a rules-based international order ‘cannot be understood independently of the political foundation on which it rests and the political interests which it serves’.88 The post-Second World War international order is an American order that privileges US interests.89 Even the discourse of ‘liberal order’ cannot disguise this fact. Today, the ground is shifting beneath the Pax Americana’s foundations. Those who believe that lock-in can work view international politics as being, in essence, geopolitically antiseptic. For them, Great Power competition and conflict are transcended by international institutions, rules and norms. This is not how the real world works, however.90 Great Power politics is about power. Rules and institutions do not exist in a vacuum, hermetically sealed off from Great Power politics. Nor are they neutral. Rather, they reflect the distribution of power in the international system. In international politics, who rules makes the rules. In his classic study of international relations between the world wars, The Twenty years’ crisis, Carr analysed the political crisis of the 1930s caused by the breakdown of the post-First World War order symbolized by the Versailles Treaty.91 The Versailles system cracked, Carr argued, because of the widening gap between the order it represented and the actual distribution of power in Europe. Carr used the events of the 1930s to make a larger geopolitical point. International orders reflect the balance of power that exists at time of their creation. Over time, however, the relative power of states changes, and eventually the international order no longer reflects the actual distribution of power between or among the leading Great Powers. When that happens, the legitimacy of the prevailing order is called into question, and it will be challenged by the rising power(s). When the balance of power swings—or is perceived to swing—in its direction, a rising power becomes increasingly dissatisfied with the international order, and seeks to revise it. The challenger wants to change the rules embodied in the existing international order—rules written, of course, by the once dominant but now declining Great Power that created it. It also wants the allocation of prestige and status changed to reflect its newly acquired power. The incumbent hegemon, of course, wants to preserve the existing international order as is—an order that it midwifed to advance, and consolidate, its own interests. The E. H. Carr Moment presents the incumbent hegemon with a choice. It can dig in its heels and try to preserve the prevailing order—and its privileged position therein; or it can accede to the rising challenger’s demands for revision. If it chooses the former course of action, it runs the risk of war with the dissatisfied challenger. If it chooses the latter, it must come to terms with the reality of its decline, and the end of its hegemonic position. The E. H. Carr Moment is where the geopolitical rubber meets the road: the status quo power(s) must choose between accommodating or opposing the revisionist demands of the rising power(s). Liberal internationalists such as John Ikenberry argue that China will not challenge the current international order, even as the distribution of power continues to shift in its favour. This is a doubtful proposition. The geopolitical question—the E. H. Carr Moment—of our time is whether the declining hegemon in east Asia, the United States, will try to preserve a status quo that is becoming increasingly out of sync with the shifting distribution of power, or whether it can reconcile itself to a rising China’s revisionist demands that the international order in east Asia be realigned to reflect the emerging power realities. Unless the United States can adjust gracefully to this tectonic geopolitical shift, the chances of a Sino-American war are high—as they always are during power transitions.92 However, whether change comes peacefully or violently, the Pax Americana’s days are numbered.

#### Chinese leadership solves extinction.

Shen Yamei 18, Deputy Director and Associate Research Fellow of Department for American Studies, China Institute of International Studies, 1-9-2018, "Probing into the “Chinese Solution” for the Transformation of Global Governance," CAIFC, http://www.caifc.org.cn/en/content.aspx?id=4491

As the world is in a period of great development, transformation and adjustment, the international power comparison is undergoing profound changes, global governance is reshuffling and traditional governance concepts and models are confronted with challenges. The international community is expecting China to play a bigger role in global governance, which has given birth to the Chinese solution. A. To Lead the Transformation of the Global Governance System. The “shortcomings” of the existing global governance system are prominent, which can hardly ensure global development. First, the traditional dominant forces are seriously imbalanced. The US and Europe that used to dominate the global governance system have been beset with structural problems, with their economic development stalling, social contradictions intensifying, populism and secessionism rising, and states trapped in internal strife and differentiation. These countries have not fully reformed and adjusted themselves well, but rather pointed their fingers at globalization and resorted to retreat for self-insurance or were busy with their own affairs without any wish or ability to participate in global governance, which has encouraged the growth of “anti-globalization” trend into an interference factor to global governance. Second, the global governance mechanism is relatively lagging behind. Over the years of development, the strength of emerging economies has increased dramatically, which has substantially upset the international power structure, as the developing countries as a whole have made 80 percent of the contributions to global economic growth. These countries have expressed their appeal for new governance and begun policy coordination among themselves, which has initiated the transition of global governance form “Western governance” to “East-West joint governance”, but the traditional governance mechanisms such as the World Bank, IMF and G7 failed to reflect the demand of the new pattern, in addition to their lack of representation and inclusiveness. Third, the global governance rules are developing in a fragmented way, with governance deficits existing in some key areas. With the diversification and in-depth integration of international interests, the domain of global governance has continued to expand, with actors multiplying by folds and action intentions becoming complicated. As relevant efforts are usually temporary and limited to specific partners or issues, global governance driven by requests of “diversified governance” lacks systematic and comprehensive solutions. Since the beginning of this year, there have been risks of running into an acephalous state in such key areas as global economic governance and climate change. Such emerging issues as nuclear security and international terrorism have suffered injustice because of power politics. The governance areas in deficit, such as cyber security, polar region and oceans, have “reversely forced” certain countries and organizations to respond hastily. All of these have made the global governance system trapped in a dilemma and call urgently for a clear direction of advancement. B. To Innovate and Perfect the International Order. Currently, whether the developing countries or the Western countries of Europe and the US are greatly discontent with the existing international order as well as their appeals and motivation for changing the order are unprecedentedly strong. The US is the major creator and beneficiary of the existing hegemonic order, but it is now doubtful that it has gained much less than lost from the existing order, faced with the difficulties of global economic transformation and obsessed with economic despair and political dejection. Although the developing countries as represented by China acknowledge the positive role played by the post-war international order in safeguarding peace, boosting prosperity and promoting globalization, they criticize the existing order for lack of inclusiveness in politics and equality in economy, as well as double standard in security, believing it has failed to reflect the multi-polarization trend of the world and is an exclusive “circle club”. Therefore, there is much room for improvement. For China, to lead the transformation of the global governance system and international order not only supports the efforts of the developing countries to uphold multilateralism rather than unilateralism, advocate the rule of law rather than the law of the jungle and practice democracy rather than power politics in international relations, but also is an important subject concerning whether China could gain the discourse power and development space corresponding to its own strength and interests in the process of innovating and perfecting the framework of international order. C. To Promote Integration of the Eastern and Western Civilizations. Dialog among civilizations, which is the popular foundation for any country’s diplomatic proposals, runs like a trickle moistening things silently. Nevertheless, in the existing international system guided by the “Western-Centrism”, the Western civilization has always had the self-righteous superiority, conflicting with the interests and mentality of other countries and having failed to find the path to co-existing peacefully and harmoniously with other civilizations. So to speak, many problems of today, including the growing gap in economic development between the developed and developing countries against the background of globalization, the Middle East trapped in chaos and disorder, the failure of Russia and Turkey to “integrate into the West”, etc., can be directly attributed to lack of exchanges, communication and integration among civilizations. Since the 18th National Congress of CPC, Xi Jinping has raised the concept of “Chinese Dream” that reflects both Chinese values and China’s pursuit, re-introducing to the world the idea of “all living creatures grow together without harming one another and ways run parallel without interfering with one another”, which is the highest ideal in Chinese traditional culture, and striving to shape China into a force that counter-balance the Western civilization. He has also made solemn commitment that “we respect the diversity of civilizations …… cannot be puffed up with pride and depreciate other civilizations and nations”; “facing the people deeply trapped in misery and wars, we should have not only compassion and sympathy, but also responsibility and action …… do whatever we can to extend assistance to those people caught in predicament”, etc. China will rebalance the international pattern from a more inclusive civilization perspective and with more far-sighted strategic mindset, or at least correct the bisected or predominated world order so as to promote the parallel development of the Eastern and Western civilizations through mutual learning, integration and encouragement. D. To Pass on China’s Confidence. Only a short while ago, some Western countries had called for “China’s responsibility” and made it an inhibition to “regulate” China’s development orientation. Today, China has become a source of stability in an international situation full of uncertainties. Over the past 5 years, China has made outstanding contributions to the recovery of world economy under relatively great pressure of its own economic downturn. Encouraged by the “four confidences”, the whole of the Chinese society has burst out innovation vitality and produced innovation achievements, making people have more sense of gain and more optimistic about the national development prospect. It is the heroism of the ordinary Chinese to overcome difficulties and realize the ideal destiny that best explains China’s confidence. When this confidence is passed on in the field of diplomacy, it is expressed as: first, China’s posture is seen as more forging ahead and courageous to undertake responsibilities ---- proactively shaping the international agendas rather than passively accepting them; having clear-cut attitudes on international disputes rather than being equivocal; and extending international cooperation to comprehensive and dimensional development rather than based on the theory of “economy only”. In sum, China will actively seek understanding and support from other countries rather than imposing its will on others with clear-cut Chinese characteristics, Chinese style and Chinese manner. Second, China’s discourse is featured as a combination of inflexibility and yielding as well as magnanimous ---- combining the internationally recognized diplomatic principles with the excellent Chinese cultural traditions through digesting the Chinese and foreign humanistic classics assisted with philosophical speculations to make “China Brand, Chinese Voice and China’s Image get more and more recognized”. Third, the Chinese solution is more practical and intimate to people as well as emphasizes inclusive cooperation, as China is full of confidence to break the monopoly of the Western model on global development, “offering mankind a Chinese solution to explore a better social system”, and “providing a brand new option for the nations and peoples who are hoping both to speed up development and maintain independence”. II.Path Searching of the “Chinese Solution” for Global Governance Over the past years’ efforts, China has the ability to transform itself from “grasping the opportunity” for development to “creating opportunity” and “sharing opportunity” for common development, hoping to pass on the longing of the Chinese people for a better life to the people of other countries and promoting the development of the global governance system toward a more just and rational end. It has become the major power’s conscious commitment of China to lead the transformation of the global governance system in a profound way. A. To Construct the Theoretical System for Global Governance. The theoretical system of global governance has been the focus of the party central committee’s diplomatic theory innovation since the 18th National Congress of CPC as well as an important component of the theory of socialism with Chinese characteristics for a new era, which is not only the sublimation of China’s interaction with the world from “absorbing and learning” to “cooperation and mutual learning”, but also the cause why so many developing countries have turned from “learning from the West” to “exploring for treasures in the East”. In the past 5 years, the party central committee, based on precise interpretation of the world pattern today and serious reflection on the future development of mankind, has made a sincere call to the world for promoting the development of global governance system toward a more just and rational end, and proposed a series of new concepts and new strategies including engaging in major power diplomacy with Chinese characteristics, creating the human community with common destiny, promoting the construction of new international relationship rooted in the principle of cooperation and win-win, enriching the strategic thinking of peaceful development, sticking to the correct benefit view, formulating the partnership network the world over, advancing the global economic governance in a way of mutual consultation, joint construction and co-sharing, advocating the joint, comprehensive, cooperative and sustainable security concept, and launching the grand “Belt and Road” initiative. The Chinese solution composed of these contents, not only fundamentally different from the old roads of industrial revolution and colonial expansion in history, but also different from the market-driven neo-liberalism model currently advocated by Western countries and international organizations, stands at the height of the world and even mankind, seeking for global common development and having widened the road for the developing countries to modernization, which is widely welcomed by the international community. B. To Supplement and Perfect the Global Governance System. Currently, the international political practice in global governance is mostly problem-driven without creating a set of relatively independent, centralized and integral power structures, resulting in the existing global governance systemcharacterized as both extensive and unbalanced. China has been engaged in reform and innovation, while maintaining and constructing the existing systems, producing some thinking and method with Chinese characteristics. First, China sees the UN as a mirror that reflects the status quo of global governance, which should act as the leader of global governance, and actively safeguards the global governance system with the UN at the core. Second, China is actively promoting the transforming process of such recently emerged international mechanisms as G20, BRICS and SCO, perfecting them through practice, and boosting Asia-Pacific regional cooperation and the development of economic globalization. China is also promoting the construction of regional security mechanism through the Six-Party Talks on Korean Peninsula nuclear issue, Boao Forum for Asia, CICA and multilateral security dialog mechanisms led by ASEAN so as to lay the foundation for the future regional security framework. Third, China has initiated the establishment of AIIB and the New Development Bank of BRICS, creating a precedent for developing countries to set up multilateral financial institutions. The core of the new relationship between China and them lies in “boosting rather than controlling” and “public rather than private”, which is much different from the management and operation model of the World Bank, manifesting the increasing global governance ability of China and the developing countries as well as exerting pressure on the international economic and financial institution to speed up reforms. Thus, in leading the transformation of the global governance system, China has not overthrown the existing systems and started all over again, but been engaged in innovating and perfecting; China has proactively undertaken international responsibilities, but has to do everything in its power and act according to its ability. C. To Reform the Global Governance Rules. Many of the problems facing global governance today are deeply rooted in such a cause that the dominant power of the existing governance system has taken it as the tool to realize its own national interests first and a platform to pursue its political goals. Since the beginning of this year, the US has for several times requested the World Bank, IMF and G20 to make efforts to mitigate the so-called global imbalance, abandoned its commitment to support trade openness, cut down investment projects to the middle-income countries, and deleted commitment to support the efforts to deal with climate change financially, which has made the international systems accessories of the US domestic economic agendas, dealing a heavy blow to the global governance system. On the contrary, the interests and agendas of China, as a major power of the world, are open to the whole world, and China in the future “will provide the world with broader market, more sufficient capital, more abundant goods and more precious opportunities for cooperation”, while having the ability to make the world listen to its voice more attentively. With regard to the subject of global governance, China has advocated that what global governance system is better cannot be decided upon by any single country, as the destiny of the world should be in the hands of the people of all countries. In principle, all the parties should stick to the principle of mutual consultation, joint construction and co-sharing, resolve disputes through dialog and differences through consultation. Regarding the critical areas, opening to the outer world does not mean building one’s own backyard, but building the spring garden for co-sharing; the “Belt and Road” initiative is not China’s solo, but a chorus participated in by all countries concerned. China has also proposed international public security views on nuclear security, maritime cooperation and cyber space order, calling for efforts to make the global village into a “grand stage for seeking common development” rather than a “wrestling arena”; we cannot “set up a stage here, while pulling away a prop there”, but “complement each other to put on a grand show”. From the orientation of reforms, efforts should be made to better safeguard and expand the legitimate interests of the developing countries and increase the influence of the emerging economies on global governance. Over the past 5 years, China has attached importance to full court diplomacy, gradually coming to the center stage of international politics and proactively establishing principles for global governance. By hosting such important events as IAELM, CICA Summit, G20 Summit, the Belt and Road International Cooperation Forum and BRICS Summit, China has used theseplatforms to elaborate the Asia-Pacific Dream for the first time to the world, expressing China’s views on Asian security and global economic governance, discussing with the countries concerned with the Belt and Road about the synergy of their future development strategies and setting off the “BRICS plus” capacity expansion mechanism, in which China not only contributes its solution and shows its style, but also participates in the shaping of international principles through practice. On promoting the resolution of hot international issues, China abides by the norms governing international relations based on the purposes and principles of the UN Charter, and insists on justice, playing a constructive role as a responsible major power in actively promoting the political accommodation in Afghanistan, mediating the Djibouti-Eritrea dispute, promoting peace talks in the Middle East, devoting itself to the peaceful resolution of the South China Sea dispute through negotiations. In addition, China’s responsibility and quick response to international crises have gained widespread praises, as seen in such cases as assisting Africa in its fight against the Ebola epidemic, sending emergency fresh water to the capital of Maldives and buying rice from Cambodia to help relieve its financial squeeze, which has shown the simple feelings of the Chinese people to share the same breath and fate with the people of other countries. D. To Support the Increase of the Developing Countries’ Voice. The developing countries, especially the emerging powers, are not only the important participants of the globalization process, but also the important direction to which the international power system is transferring. With the accelerating shift of global economic center to emerging markets and developing economies, the will and ability of the developing countries to participate in global governance have been correspondingly strengthened. As the biggest developing country and fast growing major power, China has the same appeal and proposal for governance as other developing countries and already began policy coordination with them, as China should comply with historical tide and continue to support the increase of the developing countries’ voice in the global governance system. To this end, China has pursued the policy of “dialog but not confrontation, partnership but not alliance”, attaching importance to the construction of new type of major power relationship and global partnership network, while making a series proposals in the practice of global governance that could represent the legitimate interests of the developing countries and be conducive to safeguarding global justice, including supporting an open, inclusive, universal, balanced and win-win economic globalization; promoting the reforms on share and voting mechanism of IMF to increase the voting rights and representation of the emerging market economies; financing the infrastructure construction and industrial upgrading of other developing countries through various bilateral or regional funds; and helping other developing countries to respond to such challenges as famine, refugees, climate change and public hygiene by debt forgiveness and assistance.

#### No new 1AR primacy impacts—the 1NC strategy was premised off this impact scenario being shit and it justifies reading new advantages which skews my strategy and creates late breaking debates that are impossible to evaluate.

#### The risk of US entrapment is very high – aff evidence will rely on Cold War data or flawed methodology that mis defines entrapment

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In this chapter, building on the foundational work of Jack Snyder and Thomas J. Christensen (Snyder 1984; Christensen and Snyder 1990), we contend that the risks of entrapment for the contemporary United States are significant. More specifically, we make two arguments. First, much of the entrapment debate thus far has been a game of shadow boxing. As elaborated below, current efforts to study the frequency and risks of entrapment have virtually defined the problem away by treating entrapment as solely occurring when one ally goes to war for the sake of a partner when the first ally would prefer to avoid conflict. Although this is indeed the most concerning form of entrapment, it misses that entrapment does not necessarily manifest in an either/ or choice in which a state clearly takes a step it avowedly prefers to avoid. Instead, entrapment can also manifest in critical decisions states make when confronting an adversary that involve the timing of confrontation, the relative resources contributed to the effort, and the objectives involved. These different decisions on the road to deterrence and reassurance - and war - are crucial, as they help explain why states can be entrapped even if they agree that confronting an opponent is generally in their "national interest."

Second, all forms of entrapment are more likely to occur in today's unipolar world, and to be especially prevalent if and when unipolarity begins to wane. This is significant because evidence that entrapment is uncommon - and thus current US grand strategy sustainable - has almost exclusively been drawn from the bipolar world of the Cold War. Yet, because the two great powers in bipolar systems do not need allies to establish a workable balance, the Cold War is among the least likely of all situations for entrapment to occur (Waltz 1979).

Instead, alliances in multipolar and unipolar systems are likely to carry greater entrapment risks. Multipolar entrapment is easily understood (and much studied) - needing allies for a workable balance of power, states are entrapped into costly foreign adventures out of fears of being isolated and left strategically vulnerable. Studies of Europe's pre-World War I system make this point (Snyder 1984: 471-483; Schroeder 1972; Van Evera 1984: 96--101). Unipolarity, on the other hand, is less determinant but, on balance, we argue that it generates entrapment risks falling between unipolar and bipolar systems. Here, and although unipolarity limits a great power's need for allies for balance-of-power reasons, it reifies the need for allies to forestall the emergence of new great powers. In the process, unipolar alliances make moral hazard - the tendency for allies to adopt progressively riskier policies in contravention of the formal or informal terms of an alliance with a Stronger actor- particularly likely (Kuperman 2008). Unipolar alliances thus carry real entrapment risks, as a hegemon may need to go to war for allies to sustain its current dominance in the international system. The net result, therefore, is a situation where the United States' large power advantages over allies and prospective rivals may make it especially vulnerable to entrapment.

Together, these dynamics bolster the case for a more restrained US grand strategy and help undercut a key prop used by those advocating for primacist or "deep engagement" strategies. Alliances are not a free lunch for the United States. Although the United States' alliances may be good for many things, helping the United States avoid conflicts is not one of them. Alliances carry greater entrapment risks than often appreciated. Ultimately, even if some crises are deterred or foreclosed, the process of doing so creates new potential conflicts.

#### Fear of lost credibility incentivizes US entrapment – it’s fueling aggression towards China which risks great power war in East Asia – direct negotiation or offshore balancing solves conflict

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Since its 2010- 2011 announcement, the pivot has inserted the United States into a host of Asian political and military disputes with China involving ownership of contested maritime space and islands in the South and East China Seas. Though there may be economic resources beneath the surface around some of these locales, neither the United States nor its allies have an intrinsic interest in ownership of contested areas. Instead, the contested maritime domains are worrisome to US allies for what they suggest about China's territorial ambitions. They are therefore important to the United States for the signal American actions send to allies over American credibility. Thus, the United States has moved to back its allies in their disputes with the PRC by rhetorically portraying China as the principal aggressor, clarifying that US commitments to the allies would cover the maritime areas under dispute, and - above all - has dispatched its own military forces to enforce what the US and its allies define as the "status quo" in contravention of China's own interests (Russell 2014; White House 2014; US Pacific Command 2015;Valencia 2016; LaGrone 2015; Panda 2016).Whatever the legitimacy of these actions, their effect is to create a self-perpetuating cycle: the more the United States stands by its allies in opposing potential Chinese ambitions, the nominally more credible the American resolve to defend its allies, the more the allies are inclined to act aggressively toward China, and the greater the likelihood of a direct US- Chinese confron\*tation. In other words, treating American support for its allies as a litmus test of the alliances themselves requires the United States to take steps on behalf of its allies that risk conflict with China.

This is entrapment of the purest sort. The United States could readily provide security to its friends in East Asia, maintain Asia's political status quo, or more generally limit the rise of China without involving itself in Asian maritime disputes. To the extent that the United States simply wants to preserve East Asian stability, it could negotiate directly with the P.R.C. to settle conflicts of interest on a bilateral basis. To the extent that the United States wants to prevent China from becoming an Asian hegemon or engaging in military action beyond its borders, it could simply surge forces to the region as crises develop or build up the military forces of its clients (Itzkowitz Shifrinson and Lalwani 2014; Glaser 2015; Mirski 2013). That these options are treated as insufficient suggests entrapment at play. Even if protecting Japan, South Korea, and other regional partners is in the United States' interest, only entrapment explains the timing and form of the American response.3

#### China hegemony is actually benign unlike the US.

Leslie Fong 18, former editor of The Straits Times, 4-15-2018, "What would Chinese hegemony look like? A lot like US leadership," South China Morning Post, https://www.scmp.com/week-asia/opinion/article/2141661/what-would-chinese-hegemony-look-lot-us-leadership

Is there any evidence to suggest that China has thought, spoken and acted in a similar vein or will do so very soon? Here is where Lind, in her search for instances of unvarnished Chinese hegemony, cites the elaborate system of tribute which the Han, Tang, Song, Ming and Qing dynasties adopted. Under this system, neighbouring countries sent diplomatic missions, brought gifts and kowtowed to the Chinese Emperor in exchange for trading privileges. But there is consensus among most students of Chinese history that these tributary states accepted the system because they stood to gain more from it – rather than out of fear of retribution for not playing ball. In short, it was not gunboat diplomacy. Use of force was rare. What she also omits to mention is that the countries that paid tribute to Imperial China received far more in return for their elephants, pearls and other gifts, not just in favourable trading terms and even more lavish reciprocal presents but more important, in being granted a place in a geopolitical order that, essentially, kept interstate peace in the entire region for more than 1,500 years. Most historians are agreed that China seemed to care more about recognition of its cultural superiority and civilisational glory, than demanding political or economic subservience from the tributaries. This argument is well amplified in a paper by Professor Khong Yuen Foong of the Lee Kuan Yew School of Public Policy, in which he compares the Chinese tribute system with how the US has conducted its foreign relations. His thesis is that the way the Americans have taken is not unlike the Chinese system. This Lind also acknowledges when she says the US has used the same playbook as the Chinese. But there are key differences between what China expected of its tributaries and what the US still wants from countries accepting its hegemony. As Khong notes, the US seeks deference to it as a hegemon or power, and emulation of its ideas like liberal democracy. It imposes its values and preferred rules of engagement, if not by direct force, then through institutions like the International Monetary Fund that it dominates and directs. And its rewards for tributaries are military protection and access to its market. In contrast, the various dynasties of Imperial China, even in their heydays, never saw the need to demand tributary states emulate their system of government or other values. As Khong notes, they left it to these countries to come to their senses and copy what made China such a glorious civilisation.

#### Pursuit of hegemony leads to Sino-Russia alliance and is unsustainable.

Porter, DPhil, 19

(Patrick, ModernHistory@Oxford, ProfInternationalSecurityAndStrategy@Birmingham, Advice for a Dark Age: Managing Great Power Competition, The Washington Quarterly, 42:1, 7-25)

Even the United States cannot prudently take on every adversary on multiple fronts. The costs of military campaigns against these adversaries in their backyards, whether in the Baltic States or Taiwan, would outstrip the losses that the U.S. military has sustained in decades. Short of all-out conflict, to mobilize for dominance and risk escalation on multiple such fronts would court several dangers. It would overstretch the country. The U.S. defense budget now approaches $800 billion annually, not including deficit-financed military operations. This is a time of ballooning deficits, where the Congressional Budget Office warns that “the prospect of large and growing debt poses substantial risks for the nation.”27 If in such conditions, current expenditure is not enough to buy unchallengeable military preponderance—and it may not be—then the failure lies not in the failure to spend even more. Neither is the answer to sacrifice the quality of civic life at home to service the cause of preponderance abroad. The old “two war standard,” a planning construct whereby the United States configures its forces to conduct two regional conflicts at once, would be unsustainably demanding against more than one peer competitor, or potentially with a roster of major and minor adversaries all at once.28 After all, the purpose of American military power is ultimately to secure a way of life as a constitutional republic. To impose ever-greater debts on civil society and strip back collective provision at home, on the basis that the quality of life is expendable for the cause of hegemony, is perversely to set up power-projection abroad as the end, when it should be the means. The problem lies, rather, in the inflexible pursuit of hegemony itself, and the failure to balance commitments with scarce resources. To attempt to suppress every adversary simultaneously would drive adversaries together, creating hostile coalitions. It also may not succeed. Counterproliferation in North Korea is difficult enough, for instance, but the task becomes more difficult still if U.S. enmity with China drives Beijing to refuse cooperation over enforcing sanctions on Pyongyang. Concurrent competitions would also split American resources, attention and time. Exacerbating the strain on scarce resources between defense, consumption and investment raises the polarizing question of whether preponderance is even worth it, which then undermines the domestic consensus needed to support it. At the same time, reduced investment in infrastructure and education would damage the economic foundations for conducting competition abroad in the first place. Taken together, indiscriminate competition risks creating the thing most feared in traditional U.S. grand strategy: a hostile Eurasian alliance leading to continuous U.S. mobilization against hostile coalitions, turning the U.S. republic into an illiberal garrison state. If the prospect for the United States as a great power faces a problem, it is not the size of the defense budget, or the material weight of resources at the U.S. disposal, or popular reluctance to exercise leadership. Rather, the problem lies in the scope of the policy that those capabilities are designed to serve. To make the problem smaller, Washington should take steps to make the pool of adversaries smaller.

#### A strong Sino-Russian alliance combined with expanded US military presence ensures joint retaliation — that escalates to the use of nuclear force

Klare 18 – Professor of peace and world security studies at Hampshire College. (Michael T., “The Pentagon Is Planning a Three-Front ‘Long War’ Against China and Russia,” April 4, 2018, https://fpif.org/the-pentagon-is-planning-a-three-front-long-war-against-china-and-russia/)//sy

In relatively swift fashion, American military leaders have followed up their claim that the U.S. is in a new long war by sketching the outlines of a containment line that would stretch from the Korean Peninsula around Asia across the Middle East into parts of the former Soviet Union in Eastern Europe and finally to the Scandinavian countries. Under their plan, American military forces — reinforced by the armies of trusted allies — should garrison every segment of this line, a grandiose scheme to block hypothetical advances of Chinese and Russian influence that, in its global reach, should stagger the imagination. Much of future history could be shaped by such an outsized effort. Questions for the future include whether this is either a sound strategic policy or truly sustainable. Attempting to contain China and Russia in such a manner will undoubtedly provoke countermoves, some undoubtedly difficult to resist, including cyber attacks and various kinds of economic warfare. And if you imagined that a war on terror across huge swaths of the planet represented a significant global overreach for a single power, just wait. Maintaining large and heavily-equipped forces on three extended fronts will also prove exceedingly costly and will certainly conflict with domestic spending priorities and possibly provoke a divisive debate over the reinstatement of the draft. However, the real question — unasked in Washington at the moment — is: Why pursue such a policy in the first place? Are there not other ways to manage the rise of China and Russia’s provocative behavior? What appears particularly worrisome about this three-front strategy is its immense capacity for confrontation, miscalculation, escalation, and finally actual war rather than simply grandiose war planning. At multiple points along this globe-spanning line — the Baltic Sea, the Black Sea, Syria, the South China Sea, and the East China Sea, to name just a few — forces from the U.S. and China or Russia are already in significant contact, often jostling for position in a potentially hostile manner. At any moment, one of these encounters could provoke a firefight leading to unintended escalation and, in the end, possibly all-out combat. From there, almost anything could happen, even the use of nuclear weapons. Clearly, officials in Washington should be thinking hard before committing Americans to a strategy that will make this increasingly likely and could turn what is still long-war planning into an actual long war with deadly consequences.

#### Heg decline inevitable and good – outweighs Brands on recency – COVID, Iraq, financial crisis, and Trump, and China is stability-oriented.

Karabell, PhD IR@Harvard, 07-13-20

(Karabell, Zachary (Founder of Progress Network@New America, President@River Twice Research, Contributing Editor@Politico, Snr. Advisor@Business for Social Responsibility, PhD IR/History@Harvard, with a focus on US-USSR relations during the Cold War). “The Anti-American Century,” Foreign Policy Magazine, July 13, 2020. https://foreignpolicy.com/2020/07/13/anti-american-century-united-states-order//SHL)

The remainder of the century saw the United States bestride the world as the dominant power, sometimes for better and often for worse. But Luce was correct that it was the American Century (or at least half-century). As of 2020, though, the 21st century has become “the Anti-American Century,” an identity already well-advanced before the pandemic but certainly accelerated and cemented by it. The Anti-American Century may turn out to be aggressively hostile to the United States, but for now it is anti-American mostly in the sense of being antithetical to the American Century. The three pillars of American strength—military, economic, and political—that defined the last century have each been undermined if not obliterated. In this moment, those failures may seem like profound negatives. In his most recent book, the writer Robert Kagan laments that, without American leadership around the world, the jungle will grow back. In the United States’ absence, Beijing may be able to define a less liberal world order. In terms of domestic politics, the left and the right are oddly united in their despair at the erosion of the American Century, as the left bemoans the failure of the American experiment in an age of racial divisions and government ineptitude and the right defends to the hilt “Make America Great Again” redux.

Yet the dawn of the Anti-American Century may be precisely what both the world and the United States need to meet the particular challenges of today. A world of nearly 7.8 billion people demands multiple nodes of support, not one hegemon or two jockeying for power. And a United States of great affluence and great deficiencies needs to accept that it is not ordained to lead and that its past results are, as investors like to disclaim, no guarantee of future success. The first step to solving a problem is acknowledging that you have one; failure to do so—to believe only that one’s country is uniquely powerful and destined by history and culture for greatness—is a recipe for a fall. At the dawn of the new millennium, a scant 20 years ago that feels like an eternity, the United States was able to say to itself and the world that it had found a uniquely potent formula for how to manage democracy. It pointed to its role as a global superpower and its resilient and flourishing economy. It asserted that it had excelled in advanced research, education, and innovation and stood as an example to countries everywhere. All that was never nearly as true as Americans wished it to be, but those strengths were, relative to much of the world, undeniable. The pandemic has exposed structural fissures in the United States. It has also underscored that a country whose central government is constrained not just by the three-branch structure of the federal government but also by substantial local and state autonomy is not particularly well suited to marshaling a forceful national effort that isn’t an actual war. But the tut-tutting and eye-rolling abroad about the anemic U.S. response to the COVID-19 pandemic (“The world is taking pity on us,” went the line in one prominent column and in many other since) is simply the next iteration of a process that has been unfolding for two decades.

The first pillar of the American Century to be knocked aside was military. The U.S. invasion of Afghanistan after 9/11 enjoyed considerable support internationally as a justified response to the Taliban’s sheltering of al Qaeda and Osama bin Laden. But the subsequent invasion of Iraq in March 2003 with a paucity of international support followed by a bungled occupation and years of guerrilla war against American troops evoked the Vietnam War. Initial misgivings were exponentially magnified by revelations of American-sanctioned torture in Iraq, at the Guantánamo Bay detention facility, and at various sites around the world, in clear contravention of the Geneva Conventions that the United States had long defended. Add to that revelations of spying on domestic citizens in the name of national security and the war on terrorism, and many of the pieties of American strength crumbled. The United States emerged by 2008 from its Iraq imbroglio with its military still second to none in size and capacity but with its image severely undermined.

The second pillar to crumble was economic. One of the central conceits of Luce’s American Century was that the unique virtues of the American economic system would act as a powerful rebuke of communism. And even after the fall of the Soviet Union, the flourishing American economy was a magnet for talent and innovation, with U.S. technology firms defining the first internet boom of the 1990s and then the next wave in the 2000s. Meanwhile, the Washington Consensus that coalesced in the 1980s about how to structure free markets was the blueprint for post-1989 reconstruction of Eastern Europe and Russia. It was also used as a loose framework by both the International Monetary Fund and the World Bank in their efforts to push countries around the world to drop trade barriers, end state-run businesses, and open up their capital accounts to global flows. While some countries, especially Russia, suffered mightily from this medicine, the sheer economic power of the United States left little alternative for most nations. China was the notable exception, and its size and the widespread perception that it would eventually move toward the U.S. model after joining the World Trade Organization allowed it to evolve along its own path. China’s economic success eroded American dominance, but it was the financial crisis of 2008-2009 that truly knocked away the economic pillar. For years, the question in investors’ minds had been: “When would the bad loans on the books of China’s state-owned banks lead to a crash in China?” It turned out that it wasn’t China’s banks that were the problem; it was banks in the United States. And they were a contagion that went global. The U.S.-led financial system survived, but the economic reputation of the United States—the prestige that Luce understood as a key element of its power—was devastated.

The final pillar was democracy. For decades, the United States could boast that it was the oldest and most established democracy in the world, with a singular system for preserving individual freedoms and harnessing collective energies. It routinely nudged and sometimes coerced allies and adversaries to open up and democratize. That in no way precluded dealing with dictators, but the presumption was that democracy was the best bulwark against autocracy and the best path to affluence. The United States, whatever its flaws, got democracy about as right as anyone. It was never quite the “strongest democracy” according to those who measured such things: The Scandinavian countries led there. But it was undoubtedly the strongest of the large and dynamic democracies, which combined with its other two pillars created the American Century. Then Donald Trump was elected president. Already by 2016, American democracy was showing signs of strain. Public faith and participation in government had so declined as to put the system on notice. But the election of Trump severely eroded the ability of Americans to say either to themselves or to the world that their process was uniquely able to withstand the pressures of populism and nascent authoritarianism that Americans for decades had preached against. Arguably, Trump has done much less damage than his many critics aver, and that may indeed reflect a domestic system of checks and balances that makes it devilishly difficult for any one president to commit major abuses of power. But the strength of American democracy in the world was also as a symbol and a beacon, one that drew immigrants and talent because of the opportunities that the United States offered and nurtured. On that score, the Trump administration dramatically eroded the United States’ global standing. Yes, the image of the United States also suffered mightily in the 1970s, with the humiliation of Vietnam and the revelations of American anti-democratic policies in much of what was then known as the Third World. It is possible that had the economic revival of the 1980s not happened, the American Century would have ended then. It didn’t, but then came the pandemic. Much as Chinese Premier Zhou Enlai once famously said of the legacy of the French Revolution that it was too soon to make final judgments, it is premature to start ranking nations conclusively by how well they met a pandemic that is still raging. It is clear, however, that what may be American strengths in other contexts are in this moment a panoply of weaknesses: decentralized domestic governance, highly contested politics, and immense cultural variations across states and regions. All of those inoculate Americans against autocracy and government overreach but leave the country vulnerable to national crises that require a unified response. Coming in the midst of the Trump administration, the American pandemic response has utterly crushed the image of the United States as an ambassador for good governance and democracy—and with it, the last pillar of the American Century.

Many in both the United States and throughout the world may believe that the end of the American Century is tragic, but the dawn of the Anti-American Century holds the promise of better times for the globe and the opportunity for Americans to finally confront their country’s structural problems. After all, unless one believes that the United States has a monopoly on the desire for peace, individual rights, and prosperity, 7.8 billion people and nearly 200 nations large and small are just as capable as Americans of acting in those collective interests. To believe otherwise is to hold that the only formula for international stability and prosperity is an endless continuation of the American Century. That inevitably leads to the question of China and its status as an emerging global power, especially as the United States retreats or is forced to. True, China defines rights differently than the United States, and many outside of China may not find that template an appealing one. But the Chinese template remains a Chinese one, propagated by a government that seems quite interested in keeping the global peace even while asserting its power. And whatever one thinks of China’s future, it remains true that you’d have to think that the United States is somehow a freakish and exceptional nation alone committed to peace and prosperity to believe firmly that the end of the American Century spells a backward step for humanity. As for the United State domestically, decades of global preeminence have not done Americans well at home in recent years. Standards of living have stagnated and not kept pace with those in numerous other countries. Racism persists. None of the countries that have excelled at education, health care, and standards of living are as large or complicated as the United States, but even by its own standards, the country has fallen short of what it once achieved. It spends massively on education, infrastructure, poverty alleviation, health care, and defense—but it does not manage to spend smartly. Yes, material life is better now for almost everyone than it was 50 years ago; people live longer, have more health care, eat better, are more educated, live in safer cities and towns, but that is true everywhere in the world. The United States cannot toot its own horn here. The simple fact is that success and strength—military, political, economic, and to that add cultural—are not birthrights. The United States doesn’t get to be great or powerful just because it used to be, although it certainly can help to have a head start. If the country was ever truly exceptional, it was exceptional because successive generations worked and fought and struggled to make it so, not because those generations patted themselves on the back. There have been acute moments of hubris and overreach during the decades of the American Century, but never has the disconnect between what the United States is and what Americans say it is been so profound. Out of this moment, therefore, is the promise not of American exceptionalism but American humility, a moment of recognition that, to move forward, the United States has to let go of the American Century, say goodbye to exceptionalism, and accept that it is a normal country like any other, just richer and with a massive military arsenal and multiple wells of strength and multiple areas of self-delusion. The end of the American Century offers the opportunity to look at where the country falls short and start fixing what is broken. Whether Americans will seize that opportunity, who knows. But this is not a tragedy; it is the beginning of something new.

#### Empirics go neg – most qualified studies disprove hegemonic stability theories.

Fettweis 17 –Christopher J. Fettweis is an American political scientist and the Associate Professor of Political Science at Tulane University. “Unipolarity, Hegemony, and the New Peace, Security Studies” 26:3, 423-451; EG)

Even the most ardent supporters of the hegemonic-stability explanation do not contend that US influence extends equally to all corners of the globe. The United States has concentrated its policing in what George Kennan used to call “strong points,” or the most important parts of the world: Western Europe, the Pacific Rim, and Persian Gulf.64 By doing so, Washington may well have contributed more to great power peace than the overall global decline in warfare. If the former phenomenon contributed to the latter, by essentially providing a behavioral model for weaker states to emulate, then perhaps this lends some support to the hegemonic-stability case.65 During the Cold War, the United States played referee to a few intra-West squabbles, especially between Greece and Turkey, and provided Hobbesian reassurance to Germany’s nervous neighbors. Other, equally plausible explanations exist for stability in the first world, including the presence of a common enemy, democracy, economic interdependence, general war aversion, etc. The looming presence of the leviathan is certainly among these plausible explanations, but only inside the US sphere of influence. Bipolarity was bad for the nonaligned world, where Soviet and Western intervention routinely exacerbated local conflicts. Unipolarity has generally been much better, **but whether or not this was due to US action is again unclear.** Overall US interest in the affairs of the Global South has dropped markedly since the end of the Cold War, as has the level of violence in almost all regions. There is less US intervention in the political and military affairs of Latin America compared to any time in the twentieth century, for instance, and also less conflict. Warfare in Africa is at an all-time low, as is relative US interest outside of counterterrorism and security assistance.66 **Regional peace and stability exist where there is US active intervention, as well as where there is not**. No direct relationship seems to exist across regions. If intervention can be considered a function of direct and indirect activity, of both political and military action, a regional picture might look like what is outlined in Table 1. These assessments of conflict are by necessity relative, because there has not been a “high” level of conflict in any region outside the Middle East during the period of the New Peace. Putting aside for the moment that important caveat, some points become clear. The great powers of the world are clustered in the upper right quadrant, where US intervention has been high, but conflict levels low. **US intervention is imperfectly correlated with stability, however. Indeed, it is conceivable that the relatively high level of US interest and activity has made the security situation in the Persian Gulf and broader Middle East worse.** In recent years, substantial hard power investments (Somalia, Afghanistan, Iraq), moderate intervention (Libya), and reliance on diplomacy (Syria) have been equally ineffective in stabilizing states torn by conflict. While it is possible that the region is essentially unpacifiable and no amount of police work would bring peace to its people, it remains hard to make the case that the US presence has improved matters. **In this “strong point,” at least, US hegemony has failed to bring peace.** In much of the rest of the world, the United States has not been especially eager to enforce any particular rules. Even rather incontrovertible evidence of genocide has not been enough to inspire action. Washington’s intervention choices have at best been erratic; Libya and Kosovo brought about action, but much more blood flowed uninterrupted in Rwanda, Darfur, Congo, Sri Lanka, and Syria. The US record of peacemaking is not exactly a long uninterrupted string of successes. During the turn-of-the-century conventional war between Ethiopia and Eritrea, a highlevel US delegation containing former and future National Security Advisors (Anthony Lake and Susan Rice) made a half-dozen trips to the region, but was unable to prevent either the outbreak or recurrence of the conflict. Lake and his team shuttled back and forth between the capitals with some frequency, and President Clinton made repeated phone calls to the leaders of the respective countries, offering to hold peace talks in the United States, all to no avail.67 The war ended Table 1. Post-Cold War US intervention and violence by region. High Violence Low Violence High US Intervention Middle East Europe South and Central Asia Pacific Rim North America Low US Intervention Africa South America Former Soviet Union in late 2000 when Ethiopia essentially won, and it controls the disputed territory to this day. The Horn of Africa is hardly the only region where states are free to fight one another today without fear of serious US involvement. Since they are choosing not to do so with increasing frequency, something else is probably affecting their calculations. Stability exists even in those places where the potential for intervention by the sheriff is minimal. Hegemonic stability can only take credit for influencing those decisions that would have ended in war without the presence, whether physical or psychological, of the United States. It seems hard to make the case that the relative peace that has descended on so many regions is primarily due to the kind of heavy hand of the neoconservative leviathan, or its lighter, more liberal cousin. Something else appears to be at work.

#### Best data proves unipolar systems are four times more war-prone than multipolar alternatives

Nuno P. Monteiro 12, Assistant Professor of Political Science at Yale University, “Unrest Assured: Why Unipolarity is Not Peaceful,” International Security, Winter 2012, Vol. 36, No. 3, p. 9-40

How well, then, does the argument that unipolar systems are peaceful account for the first two decades of unipolarity since the end of the Cold War? Table 1 presents a list of great powers divided into three periods: 1816 to 1945, multipolarity; 1946 to 1989, bipolarity; and since 1990, unipolarity.46 Table 2 presents summary data about the incidence of war during each of these periods. Unipolarity is the most conflict prone of all the systems, according to at least two important criteria: the percentage of years that great powers spend at war and the incidence of war involving great powers. In multipolarity,18 percent of great power years were spent at war.In bipolarity, the ratio is 16 percent**.** In unipolarity, however, a remarkable 59 percent of great power years until now were spent at war. This is by far the highest percentage in all three systems. Furthermore, during periods of multipolarity and bipolarity**,** the probability that war involving a great power would break out in any given year was, respectively, 4.2 percent and 3.4 percent. Under unipolarity, it is 18.2 percent—or more than four times higher.47 These figures provide no evidence that unipolarity is peaceful.48

## NUKE WAR

#### Isolated island populations repopulate Earth after radiation and nuclear winter – bunkers and submarines expand the likelihood of survival.

Turchin and Green 18 (Alexey Turchin – Scientist for the Foundation Science for Life Extension in Moscow, Russia, Founder of Digital Immortality Now, author of several books and articles on the topics of existential risks and life extension. Brian Patrick Green – Director of technology ethics at the Markkula Center for Applied Ethics, teaches AI ethics in the Graduate School of Engineering at Santa Clara University. <MKIM> “Islands as refuges for surviving global catastrophes”. September 2018. DOA: 7/20/19. https://www.emerald.com/insight/content/doi/10.1108/FS-04-2018-0031/full/html?fullSc=1&mbSc=1&fullSc=1)

Different types of possible catastrophes suggest different scenarios for how survival could happen on an island. What is important is that the island should have properties which protect against the specific dangers of particular global catastrophic risks. Specifically, different islands will provide protection against different risks, and their natural diversity will contribute to a higher total level of protection: **Quarantined island survives pandemic** . An island could impose effective quarantine if it is sufficiently remote and simultaneously able to protect itself, possibly using military ships and air defense. **Far northern aboriginal people survive an ice age**. Many far northern people have adapted to survive in extremely cold and dangerous environments, and under the right circumstances could potentially survive the return of an ice age. However, their cultures are endangered by globalization. If these people become dependent on the products of modern civilization, such as rifles and motor boats, and lose their native survival skills, then their likelihood of surviving the collapse of the outside world would decrease. Therefore, preservation of their survival skills may be important as a defense against the risks connected with **extreme cooling**. Remote polar island with high mountains survives brief global warming of median surface temperatures, up to 50˚C. There is a theory that the climates of planets similar to the Earth could have several semi-stable temperature levels (Popp et al., 2016). If so, because of climate change, the Earth could transition to a second semi-stable state with a median global temperature of around 330 K, about 60˚C, or about 45˚C above current global mean temperatures. But even in this climate, **some regions of Earth could still be survivable for humans**, such as the Himalayan plateau at elevations above 4,000 m, but below 6,000 (where oxygen deficiency becomes a problem), or on polar islands with mountains (however, global warming affects polar regions more than equatorial regions, and northern island will experience more effects of climate change, including thawing permafrost and possible landslides because of wetter weather). In the tropics, the combination of increased humidity and temperature may increase the wet bulb temperature above 36˚C, especially on islands, where sea moisture is readily available. In such conditions, proper human perspiration becomes impossible (Sherwood and Huber, 2010), and there will likely be increased mortality and morbidity because of tropical diseases. If temperatures later returned to normal – either naturally or through climate engineering – **the rest of the Earth could be repopulated**. ‘‘Swiss Family Robinsons’’ survive on a tropical island, unnoticed by a military robot ‘‘mutiny’’. Most AI researchers ignore medium-term AI risks, which are neither near-term risks, like unemployment, nor remote risks, like AI superintelligence. But a large drone army – if one were produced – could receive a wrong command or be infected by a computer virus, leading it to attack people indiscriminately. Remote islands without robots could provide protection in this case, allowing survival until such a drone army ran out of batteries, fuel, ammunition or other supplies: Primitive tribe survives civilizational collapse. The inhabitants of **North Sentinel Island**, near the Andaman Islands in the Indian Ocean, are hostile and uncontacted. **The Sentinelese survived the 2004 Indian Ocean tsunami apparently unaffected** (Voanews, 2009), and if the rest of humanity disappear, **they might well continue their existence without change.** Tropical Island survives extreme global nuclear winter and glaciation event. Were a **nuclear**, bolide impactor or volcanic “**winter**” scenario to unfold, these islands would remain surrounded by Warm Ocean, and local volcanism or other energy sources might provide heat, energy and food. Such island refuges may have helped life on Earth survive during the **“Snowball Earth”** event in Earth’s distant past (Hoffman et al., 1998). Remote island base for project “Yellow submarine”. Some catastrophic risks such as a gamma ray burst, a global nuclear war with high radiological contamination or multiple pandemics might be best survived **underwater in nuclear submarines** (Turchin and Green, 2017). However, after a catastrophe, the submarine with survivors would eventually need a place to dock, and an island with some prepared amenities would be a reasonable starting point for rebuilding civilization. Bunker on remote island. For risks which include multiple or complex catastrophes, such as a bolide impact, extreme volcanism, tsunamis, multiple pandemics and nuclear war with radiological contamination, **island refuges could be strengthened with bunkers**. Richard Branson survived hurricane Irma on his own island in 2017 by seeking refuge in his concrete wine cellar (Clifford, 2017). Bunkers on islands would have higher survivability compared to those close to population centers, as they will be neither a military target nor as accessible to looters or unintentionally dangerous (e.g. infected) refugees. These bunkers could potentially be connected to water sources by underwater pipes, and passages could provide cooling, access and even oxygen and food sources

#### Rigorous climate simulations prove that hydrophilic black carbon would cause to atmospheric precipitation – results in a rainout effect that quickly reverses nuclear cooling.

Reisner et al. 18 (Jon Reisner – Climate and atmospheric scientist at the Los Alamos National Laboratory. Gennaro D’Angelo – Climate scientist at the Los Alamos National Laboratory, Research scientist at the SETI institute, Associate specialist at the University of California, Santa Cruz, NASA Postdoctoral Fellow at the NASA Ames Research Center, UKAFF Fellow at the University of Exeter. Eunmo Koo - Scientist at Applied Terrestrial, Energy, and Atmospheric Modeling (ATEAM) Team, in Computational Earth Science Group (EES-16) in Earth and Environmental Sciences Division and Co-Lead of Parallel Computing Summer Research Internship (PCSRI) program at the Los Alamos National Laboratory, former Staff research associate at UC Berkeley. Wesley Even - Computational scientist in the Computational Physics and Methods Group at Los Alamos National Laboratory. Matthew Hecht – Atmospheric scientist at the Los Alamos National Laboratory. Elizabeth Hunke - Lead developer for the Los Alamos Sea Ice Model (CICE) at the Los Alamos National Laboratory responsible for development and incorporation of new parameterizations, model testing and validation, computational performance, documentation, and consultation with external model users on all aspects of sea ice modeling, including interfacing with global climate and earth system models. Darin Comeau – Climate scientist at the Los Alamos National Laboratory. Randy Bos - Project leader at the Los Alamos National Laboratory, former Weapons Effects program manager at Tech-Source. James Cooley – Computational scientist at the Los Alamos National Laboratory specializing in weapons physics, emergency response, and computational physics. <MKIM> “Climate impact of a regional nuclear weapons exchange:An improved assessment based on detailed source calculations”. 3/16/18. DOA: 7/13/19. <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2017JD027331>)

\*BC = Black Carbon

The no-rubble simulation produces a significantly more intense fire, with more fire spread, and consequently a significantly stronger plume with larger amounts of BC reaching into the upper atmosphere than the simulation with rubble, illustrated in Figure 5. While the no-rubble simulation **represents the worst-case scenario** involving vigorous fire activity, **only a relatively small amount of carbon makes its way into the stratosphere** during the course of the simulation. But while small compared to the surface BC mass, stratospheric BC amounts from the current simulations are significantly higher than what would be expected from burning vegetation such as trees (Heilman et al., 2014), e.g., the higher energy density of the building fuels and the initial fluence from the weapon produce an intense response within HIGRAD with initial updrafts of order 100 m/s in the lower troposphere. Or, in comparison to a mass fire, wildfires will burn only a small amount of fuel in the corresponding time period (roughly 10 minutes) that a nuclear weapon fluence can effectively ignite a large area of fuel producing an impressive atmospheric response. Figure 6 shows vertical profiles of BC multiplied by 100 (number of cities involved in the exchange) from the two simulations. The total amount of BC produced is in line with previous estimates (about 3.69 Tg from no-rubble simulation); however, the majority of BC resides **below the stratosphere** (3.46 Tg below 12 km) and can be **readily impacted by scavenging from precipitation** either via pyro-cumulonimbus produced by the fire itself (not modeled) or other synoptic weather systems. While the impact on climate of these more realistic profiles will be explored in the next section, it should be mentioned that **these estimates are** still **at the high end**, considering the inherent simplifications in the combustion model that lead to **overestimating BC production**. 3.3 Climate Results Long-term climatic effects critically depend on the initial injection height of the soot, with larger quantities reaching the upper troposphere/lower stratosphere inducing a greater cooling impact because of longer residence times (Robock et al., 2007a). Absorption of solar radiation by the BC aerosol and its subsequent radiative cooling tends to heat the surrounding air, driving an initial upward diffusion of the soot plumes, an effect that depends on the initial aerosol concentrations. **Mixing and sedimentation** tend to **reduce this process**, and low altitude emissions are also significantly impacted by precipitation if aging of the BC aerosol occurs on sufficiently rapid timescales. But once at stratospheric altitudes, aerosol dilution via coagulation is hindered by low particulate concentrations (e.g., Robock et al., 2007a) and lofting to much higher altitudes is inhibited by gravitational settling in the low-density air (Stenke et al., 2013), resulting in more stable BC concentrations over long times. Of the initial BC mass released in the atmosphere, most of which is emitted below 9 km, **70% rains out within the first month** and 78%, or about 2.9 Tg, is removed within the first two months (Figure 7, solid line), with the remainder (about 0.8 Tg, dashed line) being transported above about 12 km (200 hPa) within the first week. This outcome differs from the findings of, e.g., Stenke et al. (2013, their high BC-load cases) and Mills et al. (2014), who found that most of the BC mass (between 60 and 70%) is lifted in the stratosphere within the first couple of weeks. This can also be seen in Figure 8 (red lines) and in Figure 9, which include results from our calculation with the initial BC distribution from Mills et al. (2014). In that case, only 30% of the initial BC mass rains out in the troposphere during the first two weeks after the exchange, with the remainder rising to the stratosphere. In the study of Mills et al. (2008) this percentage is somewhat smaller, about 20%, and smaller still in the experiments of Robock et al. (2007a) in which the soot is initially emitted in the upper troposphere or higher. In Figure 7, the e-folding timescale for the removal of tropospheric soot, here interpreted as the time required for an initial drop of a factor e, is about one week. This result compares favorably with the “LT” experiment of Robock et al. (2007a), considering 5 Tg of BC released in the lower troposphere, in which 50% of the aerosols are removed within two weeks. By contrast, the initial e-folding timescale for the removal of stratospheric soot in Figure 8 is about 4.2 years (blue solid line), compared to about 8.4 years for the calculation using Mills et al. (2014) initial BC emission (red solid line). The removal timescale from our forced ensemble simulations is close to those obtained by Mills et al. (2008) in their 1 Tg experiment, by Robock et al. (2007a) in their experiment “UT 1 Tg”, and © 2018 American Geophysical Union. All rights reserved. by Stenke et al. (2013) in their experiment “Exp1”, in all of which 1 Tg of soot was emitted in the atmosphere in the aftermath of the exchange. Notably, the e-folding timescale for the decline of the BC mass in Figure 8 (blue solid line) is also close to the value of about 4 years quoted by Pausata et al. (2016) for their long-term “intermediate” scenario. In that scenario, which is also based on 5 Tg of soot initially distributed as in Mills et al. (2014), the factor-of2 shorter residence time of the aerosols is caused by particle growth via coagulation of BC with organic carbon. Figure 9 shows the BC mass-mixing ratio, horizontally averaged over the globe, as a function of atmospheric pressure (height) and time. The BC distributions used in our simulations imply that the upward transport of particles is substantially less efficient compared to the case in which 5 Tg of BC is directly injected into the upper troposphere. The semiannual cycle of lofting and sinking of the aerosols is associated with atmospheric heating and cooling during the solstice in each hemisphere (Robock et al., 2007a). During the first year, the oscillation amplitude in our forced ensemble simulations is particularly large during the summer solstice, compared to that during the winter solstice (see bottom panel of Figure 9), because of the higher soot concentrations in the Northern Hemisphere, as can be seen in Figure 11 (see also left panel of Figure 12). Comparing the top and bottom panels of Figure 9, the BC reaches the highest altitudes during the first year in both cases, but the concentrations at 0.1 hPa in the top panel can be 200 times as large. Qualitatively, the difference can be understood in terms of the air temperature increase caused by BC radiation emission, which is several tens of kelvin degrees in the simulations of Robock et al. (2007a, see their Figure 4), Mills et al. (2008, see their Figure 5), Stenke et al. (2013, see high-load cases in their Figure 4), Mills et al. (2014, see their Figure 7), and Pausata et al. (2016, see one-day emission cases in their Figure 1), due to high BC concentrations, but it amounts to only about 10 K in our forced ensemble simulations, as illustrated in Figure 10. Results similar to those presented in Figure 10 were obtained from the experiment “Exp1” performed by Stenke et al. (2013, see their Figure 4). **In that scenario as well, somewhat less that 1 Tg of BC remained in the atmosphere after the initial rainout**. As mentioned before, the BC aerosol that remains in the atmosphere, lifted to stratospheric heights by the rising soot plumes, undergoes sedimentation over a timescale of several years (Figures 8 and 9). This mass represents the effective amount of BC that can force climatic changes over multi-year timescales. In the forced ensemble simulations, it is about 0.8 Tg after the initial rainout, whereas it is about 3.4 Tg in the simulation with an initial soot distribution as in Mills et al. (2014). Our more realistic source simulation involves the worstcase assumption of no-rubble (along with other assumptions) and hence serves as an upper bound for the impact on climate. As mentioned above and further discussed below, our scenario induces perturbations on the climate system similar to those found in previous studies in which the climatic response was driven by roughly 1 Tg of soot rising to stratospheric heights following the exchange. Figure 11 illustrates the vertically integrated mass-mixing ratio of BC over the globe, at various times after the exchange for the simulation using the initial BC distribution of Mills et al. (2014, upper panels) and as an average from the forced ensemble members (lower panels). All simulations predict enhanced concentrations at high latitudes during the first year after the exchange. In the cases shown in the top panels, however, these high concentrations persist for several years (see also Figure 1 of Mills et al., 2014), whereas the forced ensemble simulations indicate that the BC concentration starts to decline after the first year. In fact, in the simulation represented in the top panels, mass-mixing ratios larger than about 1 kg of BC © 2018 American Geophysical Union. All rights reserved. per Tg of air persist for well over 10 years after the exchange, whereas they only last for 3 years in our forced simulations (compare top and middle panels of Figure 9). After the first year, values drop below 3 kg BC/Tg air, whereas it takes about 8 years to reach these values in the simulation in the top panels (see also Robock et al., 2007a). Over crop-producing, midlatitude regions in the Northern Hemisphere, the BC loading is reduced from more than 0.8 kg BC/Tg air in the simulation in the top panels to 0.2-0.4 kg BC/Tg air in our forced simulations (see middle and right panels). The more rapid clearing of the atmosphere in the forced ensemble is also signaled by the soot optical depth in the visible radiation spectrum, which drops below values of 0.03 toward the second half of the first year at mid latitudes in the Northern Hemisphere, and everywhere on the globe after about 2.5 years (without never attaining this value in the Southern Hemisphere). In contrast, the soot optical depth in the calculation shown in the top panels of Figure 11 becomes smaller than 0.03 everywhere only after about 10 years. The two cases show a similar tendency, in that the BC optical depth is typically lower between latitudes 30º S-30º N than it is at other latitudes. This behavior is associated to the persistence of stratospheric soot toward high-latitudes and the Arctic/Antarctic regions, as illustrated by the zonally-averaged, column-integrated mass-mixing ratio of the BC in Figure 12 for both the forced ensemble simulations (left panel) and the simulation with an initial 5 Tg BC emission in the upper troposphere (right panel). The spread in the globally averaged (near) surface temperature of the atmosphere, from the control (left panel) and forced (right panel) ensembles, is displayed in Figure 13. For each month, the plots show the largest variations (i.e., maximum and minimum values), within each ensemble of values obtained for that month, relative to the mean value of that month. The plot also shows yearly-averaged data (thinner lines). The spread is comparable in the control and forced ensembles, with average values calculated over the 33-years run length of 0.4-0.5 K. This spread is also similar to the internal variability of the globally averaged surface temperature quoted for the NCAR Large Ensemble Community Project (Kay et al., 2015). These results imply that surface air temperature differences, between forced and control simulations, which lie within the spread may not be distinguished from effects due to internal variability of the two simulation ensembles. Figure 14 shows the difference in the globally averaged surface temperature of the atmosphere (top panel), net solar radiation flux at surface (middle panel), and precipitation rate (bottom panel), computed as the (forced minus control) difference in ensemble mean values. The sum of standard deviations from each ensemble is shaded. Differences are qualitatively significant over the first few years, when the anomalies lie near or outside the total standard deviation. Inside the shaded region, differences may not be distinguished from those arising from the internal variability of one or both ensembles. The surface solar flux (middle panel) is the quantity that appears most affected by the BC emission, with qualitatively significant differences persisting for about 5 years. The precipitation rate (bottom panel) is instead affected only at the very beginning of the simulations. The red lines in all panels show the results from the simulation applying the initial BC distribution of Mills et al. (2014), where the period of significant impact is much longer owing to the higher altitude of the initial soot distribution that results in longer residence times of the BC aerosol in the atmosphere. When yearly averages of the same quantities are performed over the IndiaPakistan region, the differences in ensemble mean values lie within the total standard deviations of the two ensembles. The results in Figure 14 can also be compared to the outcomes of other previous studies. In their experiment “UT 1 Tg”, Robock et al. (2007a) found that, when only 1 Tg of soot © 2018 American Geophysical Union. All rights reserved. remains in the atmosphere after the initial rainout, temperature and precipitation anomalies are about 20% of those obtained from their standard 5 Tg BC emission case. Therefore, the largest differences they observed, during the first few years after the exchange, were about - 0.3 K and -0.06 mm/day, respectively, comparable to the anomalies in the top and bottom panels of Figure 14. Their standard 5 Tg emission case resulted in a solar radiation flux anomaly at surface of -12 W/m2 after the second year (see their Figure 3), between 5 and 6 time as large as the corresponding anomalies from our ensembles shown in the middle panel. In their experiment “Exp1”, Stenke et al. (2013) reported global mean surface temperature anomalies not exceeding about 0.3 K in magnitude and precipitation anomalies hovering around -0.07 mm/day during the first few years, again consistent with the results of Figure 14. In a recent study, Pausata et al. (2016) considered the effects of an admixture of BC and organic carbon aerosols, both of which would be emitted in the atmosphere in the aftermath of a nuclear exchange. In particular, they concentrated on the effects of coagulation of these aerosol species and examined their climatic impacts. The initial BC distribution was as in Mills et al. (2014), although the soot burden was released in the atmosphere over time periods of various lengths. Most relevant to our and other previous work are their one-day emission scenarios. They found that, during the first year, the largest values of the atmospheric surface temperature anomalies ranged between about -0.5 and -1.3 K, those of the sea surface temperature anomalies ranged between -0.2 and -0.55 K, and those of the precipitation anomalies varied between -0.15 and -0.2 mm/day. All these ranges are compatible with our results shown in Figure 14 as red lines and with those of Mills et al. (2014, see their Figures 3 and 6). As already mentioned in Section 2.3, the net solar flux anomalies at surface are also consistent. This overall agreement suggests that the **inclusion of organic carbon aerosols, and** ensuing **coagulation** with BC, **should not dramatically alter the climatic effects** resulting from our forced ensemble simulations. Moreover, aerosol growth would likely **shorten the residence time of the BC particulate in the atmosphere** (Pausata et al., 2016), possibly **reducing the duration of these effects.**

### 1NC – Laundry List

#### Extinction is inevitable from future technology — nanotech, our simulation gets shut down, AI, biotech, particle accelerators, and black swans.

Bruce **Sterling 18**, 6-1-20**18**, "When Nick Bostrom says “Bang”," WIRED, https://www.wired.com/beyond-the-beyond/2018/06/nick-bostrom-says-bang/

4.1 Deliberate misuse of nanotechnology In a mature form, molecular nanotechnology will enable the construction of bacterium-scale self-replicating mechanical robots that can feed on dirt or other organic matter [22-25]. Such replicators could eat up the biosphere or destroy it by other means such as by poisoning it, burning it, or blocking out sunlight. A person of malicious intent in possession of this technology might cause the extinction of intelligent life on Earth by releasing such nanobots into the environment.[9] The technology to produce a destructive nanobot seems considerably easier to develop than the technology to create an effective defense against such an attack (a global nanotech immune system, an “active shield” [23]). It is therefore likely that there will be a period of vulnerability during which this technology must be prevented from coming into the wrong hands. Yet the technology could prove hard to regulate, since it doesn’t require rare radioactive isotopes or large, easily identifiable manufacturing plants, as does production of nuclear weapons [23]. Even if effective defenses against a limited nanotech attack are developed before dangerous replicators are designed and acquired by suicidal regimes or terrorists, there will still be the danger of an arms race between states possessing nanotechnology. It has been argued [26] that molecular manufacturing would lead to both arms race instability and crisis instability, to a higher degree than was the case with nuclear weapons. Arms race instability means that there would be dominant incentives for each competitor to escalate its armaments, leading to a runaway arms race. Crisis instability means that there would be dominant incentives for striking first. Two roughly balanced rivals acquiring nanotechnology would, on this view, begin a massive buildup of armaments and weapons development programs that would continue until a crisis occurs and war breaks out, potentially causing global terminal destruction. That the arms race could have been predicted is no guarantee that an international security system will be created ahead of time to prevent this disaster from happening. The nuclear arms race between the US and the USSR was predicted but occurred nevertheless. 4.2 Nuclear holocaust[winter] The US and Russia still have huge stockpiles of nuclear weapons. But would an all-out nuclear war really exterminate humankind? Note that: (i) For there to be an existential risk it suffices that we can’t be sure that it wouldn’t. (ii) The climatic effects of a large nuclear war are not well known (there is the possibility of a nuclear winter). (iii) Future arms races between other nations cannot be ruled out and these could lead to even greater arsenals than those present at the height of the Cold War. The world’s supply of plutonium has been increasing steadily to about two thousand tons, some ten times as much as remains tied up in warheads ([9], p. 26). (iv) Even if some humans survive the short-term effects of a nuclear war, it could lead to the collapse of civilization. A human race living under stone-age conditions may or may not be more resilient to extinction than other animal species. 4.3 We’re living in a simulation and it gets shut down A case can be made that the hypothesis that we are living in a computer simulation should be given a significant probability [27]. The basic idea behind this so-called “Simulation argument” is that vast amounts of computing power may become available in the future (see e.g. [28,29]), and that it could be used, among other things, to run large numbers of fine-grained simulations of past human civilizations. Under some not-too-implausible assumptions, the result can be that almost all minds like ours are simulated minds, and that we should therefore assign a significant probability to being such computer-emulated minds rather than the (subjectively indistinguishable) minds of originally evolved creatures. And if we are, we suffer the risk that the simulation may be shut down at any time. A decision to terminate our simulation may be prompted by our actions or by exogenous factors. While to some it may seem frivolous to list such a radical or “philosophical” hypothesis next the concrete threat of nuclear holocaust, we must seek to base these evaluations on reasons rather than untutored intuition. Until a refutation appears of the argument presented in [27], it would intellectually dishonest to neglect to mention simulation-shutdown as a potential extinction mode. 4.4 Badly programmed superintelligence When we create the first superintelligent entity [28-34], we might make a mistake and give it goals that lead it to annihilate humankind, assuming its enormous intellectual advantage gives it the power to do so. For example, we could mistakenly elevate a subgoal to the status of a supergoal. We tell it to solve a mathematical problem, and it complies by turning all the matter in the solar system into a giant calculating device, in the process killing the person who asked the question. (For further analysis of this, see [35].) 4.5 Genetically engineered biological agent With the fabulous advances in genetic technology currently taking place, it may become possible for a tyrant, terrorist, or ~~lunatic~~ to create a doomsday virus, an organism that combines long latency with high virulence and mortality [36]. Dangerous viruses can even be spawned unintentionally, as Australian researchers recently demonstrated when they created a modified mousepox virus with 100% mortality while trying to design a contraceptive virus for mice for use in pest control [37]. While this particular virus doesn’t affect humans, it is suspected that an analogous alteration would increase the mortality of the human smallpox virus. What underscores the future hazard here is that the research was quickly published in the open scientific literature [38]. It is hard to see how information generated in open biotech research programs could be contained no matter how grave the potential danger that it poses; and the same holds for research in nanotechnology. Genetic medicine will also lead to better cures and vaccines, but there is no guarantee that defense will always keep pace with offense. (Even the accidentally created mousepox virus had a 50% mortality rate on vaccinated mice.) Eventually, worry about biological weapons may be put to rest through the development of nanomedicine, but while nanotechnology has enormous long-term potential for medicine [39] it carries its own hazards. 4.6 Accidental misuse of nanotechnology (“gray goo”) The possibility of accidents can never be completely ruled out. However, there are many ways of making sure, through responsible engineering practices, that species-destroying accidents do not occur. One could avoid using self-replication; one could make nanobots dependent on some rare feedstock chemical that doesn’t exist in the wild; one could confine them to sealed environments; one could design them in such a way that any mutation was overwhelmingly likely to cause a nanobot to completely cease to function [40]. Accidental misuse is therefore a smaller concern than malicious misuse [23,25,41]. However, the distinction between the accidental and the deliberate can become blurred. While “in principle” it seems possible to make terminal nanotechnological accidents extremely improbable, the actual circumstances may not permit this ideal level of security to be realized. Compare nanotechnology with nuclear technology. From an engineering perspective, it is of course perfectly possible to use nuclear technology only for peaceful purposes such as nuclear reactors, which have a zero chance of destroying the whole planet. Yet in practice it may be very hard to avoid nuclear technology also being used to build nuclear weapons, leading to an arms race. With large nuclear arsenals on hair-trigger alert, there is inevitably a significant risk of accidental war. The same can happen with nanotechnology: it may be pressed into serving military objectives in a way that carries unavoidable risks of serious accidents. In some situations it can even be strategically advantageous to deliberately make one’s technology or control systems risky, for example in order to make a “threat that leaves something to chance” [42]. 4.7 Something unforeseen We need a catch-all category. It would be foolish to be confident that we have already imagined and anticipated all significant risks. Future technological or scientific developments may very well reveal novel ways of destroying the world. Some foreseen hazards (hence not members of the current category) which have been excluded from the list of bangs on grounds that they seem too unlikely to cause a global terminal disaster are: solar flares, supernovae, black hole explosions or mergers, gamma-ray bursts, galactic center outbursts, supervolcanos, loss of biodiversity, buildup of air pollution, gradual loss of human fertility, and various religious doomsday scenarios. The hypothesis that we will one day become “illuminated” and commit collective suicide or stop reproducing, as supporters of VHEMT (The Voluntary Human Extinction Movement) hope [43], appears unlikely. If it really were better not to exist (as Silenus told king Midas in the Greek myth, and as Arthur Schopenhauer argued [44] although for reasons specific to his philosophical system he didn’t advocate suicide), then we should not count this scenario as an existential disaster. The assumption that it is not worse to be alive should be regarded as an implicit assumption in the definition of Bangs. Erroneous collective suicide is an existential risk albeit one whose probability seems extremely slight. (For more on the ethics of human extinction, see chapter 4 of [9].) 4.8 Physics disasters The Manhattan Project bomb-builders’ concern about an A-bomb-derived atmospheric conflagration has contemporary analogues. There have been speculations that future high-energy particle accelerator experiments may cause a breakdown of a metastable vacuum state that our part of the cosmos might be in, converting it into a “true” vacuum of lower energy density [45]. This would result in an expanding bubble of total destruction that would sweep through the galaxy and beyond at the speed of light, tearing all matter apart as it proceeds. Another conceivability is that accelerator experiments might produce negatively charged stable “strangelets” (a hypothetical form of nuclear matter) or create a mini black hole that would sink to the center of the Earth and start accreting the rest of the planet [46]. These outcomes seem to be impossible given our best current physical theories. But the reason we do the experiments is precisely that we don’t really know what will happen. A more reassuring argument is that the energy densities attained in present day accelerators are far lower than those that occur naturally in collisions between cosmic rays [46,47]. It’s possible, however, that factors other than energy density are relevant for these hypothetical processes, and that those factors will be brought together in novel ways in future experiments. The main reason for concern in the “physics disasters” category is the meta-level observation that discoveries of all sorts of weird physical phenomena are made all the time, so even if right now all the particular physics disasters we have conceived of were absurdly improbable or impossible, there could be other more realistic failure-modes waiting to be uncovered. The ones listed here are merely illustrations of the general case.

### 1NC – Industrial Collapse Good

#### Nuke war wouldn’t cause extinction – but - industrial civilization wouldn’t recover.

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Imagine that the world as we know it ends tomorrow. There’s a global catastrophe: a pandemic virus, an asteroid strike, or perhaps a nuclear holocaust. The vast majority of the human race perishes. Our civilisation collapses. The post-apocalyptic survivors find themselves in a devastated world of decaying, deserted cities and roving gangs of bandits looting and taking by force. Bad as things sound, that’s not the end for humanity. We bounce back. Sooner or later, peace and order emerge again, just as they have time and again through history. Stable communities take shape. They begin the agonising process of rebuilding their technological base from scratch. But here’s the question: how far could such a society rebuild? Is there any chance, for instance, that a post-apocalyptic society could reboot a technological civilisation? Let’s make the basis of this thought experiment a little more specific. Today, we have already consumed the most easily drainable crude oil and, particularly in Britain, much of the shallowest, most readily mined deposits of coal. Fossil fuels are central to the organisation of modern industrial society, just as they were central to its development. Those, by the way, are distinct roles: even if we could somehow do without fossil fuels now (which we can’t, quite), it’s a different question whether we could have got to where we are without ever having had them. So, would a society starting over on a planet stripped of its fossil fuel deposits have the chance to progress through its own Industrial Revolution? Or to phrase it another way, what might have happened if, for whatever reason, the Earth had never acquired its extensive underground deposits of coal and oil in the first place? Would our progress necessarily have halted in the 18th century, in a pre-industrial state? It’s easy to underestimate our current dependence on fossil fuels. In everyday life, their most visible use is the petrol or diesel pumped into the vehicles that fill our roads, and the coal and natural gas which fire the power stations that electrify our modern lives. But we also rely on a range of different industrial materials, and in most cases, high temperatures are required to transform the stuff we dig out of the ground or harvest from the landscape into something useful. You can’t smelt metal, make glass, roast the ingredients of concrete, or synthesise artificial fertiliser without a lot of heat. It is fossil fuels – coal, gas and oil – that provide most of this thermal energy. In fact, the problem is even worse than that. Many of the chemicals required in bulk to run the modern world, from pesticides to plastics, derive from the diverse organic compounds in crude oil. Given the dwindling reserves of crude oil left in the world, it could be argued that the most wasteful use for this limited resource is to simply burn it. We should be carefully preserving what’s left for the vital repertoire of valuable organic compounds it offers. But my topic here is not what we should do now. Presumably everybody knows that we must transition to a low-carbon economy one way or another. No, I want to answer a question whose interest is (let’s hope) more theoretical. Is the emergence of a technologically advanced civilisation necessarily contingent on the easy availability of ancient energy? Is it possible to build an industrialised civilisation without fossil fuels? And the answer to that question is: maybe – but it would be extremely difficult. Let’s see how. We’ll start with a natural thought. Many of our alternative energy technologies are already highly developed. Solar panels, for example, represent a good option today, and are appearing more and more on the roofs of houses and businesses. It’s tempting to think that a rebooted society could simply pick up where we leave off. Why couldn’t our civilisation 2.0 just start with renewables? Well, it could, in a very limited way. If you find yourself among the survivors in a post-apocalyptic world, you could scavenge enough working solar panels to keep your lifestyle electrified for a good long while. Without moving parts, photovoltaic cells require little maintenance and are remarkably resilient. They do deteriorate over time, though, from moisture penetrating the casing and from sunlight itself degrading the high-purity silicon layers. The electricity generated by a solar panel declines by about 1 per cent every year so, after a few generations, all our hand-me-down solar panels will have degraded to the point of uselessness. Then what? New ones would be fiendishly difficult to create from scratch. Solar panels are made from thin slices of extremely pure silicon, and although the raw material is common sand, it must be processed and refined using complex and precise techniques – the same technological capabilities, more or less, that we need for modern semiconductor electronics components. These techniques took a long time to develop, and would presumably take a long time to recover. So photovoltaic solar power would not be within the capability of a society early in the industrialisation process. Perhaps, though, we were on the right track by starting with electrical power. Most of our renewable-energy technologies produce electricity. In our own historical development, it so happens that the core phenomena of electricity were discovered in the first half of the 1800s, well after the early development of steam engines. Heavy industry was already committed to combustion-based machinery, and electricity has largely assumed a subsidiary role in the organisation of our economies ever since. But could that sequence have run the other way? Is there some developmental requirement that thermal energy must come first? On the face of it, it’s not beyond the bounds of possibility that a progressing society could construct electrical generators and couple them to simple windmills and waterwheels, later progressing to wind turbines and hydroelectric dams. In a world without fossil fuels, one might envisage an electrified civilisation that largely bypasses combustion engines, building its transport infrastructure around electric trains and trams for long-distance and urban transport. I say ‘largely’. We couldn’t get round it all together. When it comes to generating the white heat demanded by modern industry, there are few good options but to burn stuff. While the electric motor could perhaps replace the coal-burning steam engine for mechanical applications, society, as we’ve already seen, also relies upon thermal energy to drive the essential chemical and physical transformations it needs. How could an industrialising society produce crucial building materials such as iron and steel, brick, mortar, cement and glass without resorting to deposits of coal? You can of course create heat from electricity. We already use electric ovens and kilns. Modern arc furnaces are used for producing cast iron or recycling steel. The problem isn’t so much that electricity can’t be used to heat things, but that for meaningful industrial activity you’ve got to generate prodigious amounts of it, which is challenging using only renewable energy sources such as wind and water. An alternative is to generate high temperatures using solar power directly. Rather than relying on photovoltaic panels, concentrated solar thermal farms use giant mirrors to focus the sun’s rays onto a small spot. The heat concentrated in this way can be exploited to drive certain chemical or industrial processes, or else to raise steam and drive a generator. Even so, it is difficult (for example) to produce the very high temperatures inside an iron-smelting blast furnace using such a system. What’s more, it goes without saying that the effectiveness of concentrated solar power depends strongly on the local climate. No, when it comes to generating the white heat demanded by modern industry, there are few good options but to burn stuff. But that doesn’t mean the stuff we burn necessarily has to be fossil fuels. Let’s take a quick detour into the pre-history of modern industry. Long before the adoption of coal, charcoal was widely used for smelting metals. In many respects it is superior: charcoal burns hotter than coal and contains far fewer impurities. In fact, coal’s impurities were a major delaying factor on the Industrial Revolution. Released during combustion, they can taint the product being heated. During smelting, sulphur contaminants can soak into the molten iron, making the metal brittle and unsafe to use. It took a long time to work out how to treat coal to make it useful for many industrial applications. And, in the meantime, charcoal worked perfectly well. And then, well, we stopped using it. In retrospect, that’s a pity. When it comes from a sustainable source, charcoal burning is essentially carbon-neutral, because it doesn’t release any new carbon into the atmosphere – not that this would have been a consideration for the early industrialists. But charcoal-based industry didn’t die out altogether. In fact, it survived to flourish in Brazil. Because it has substantial iron deposits but few coalmines, Brazil is the largest charcoal producer in the world and the ninth biggest steel producer. We aren’t talking about a cottage industry here, and this makes Brazil a very encouraging example for our thought experiment. The trees used in Brazil’s charcoal industry are mainly fast-growing eucalyptus, cultivated specifically for the purpose. The traditional method for creating charcoal is to pile chopped staves of air-dried timber into a great dome-shaped mound and then cover it with turf or soil to restrict airflow as the wood smoulders. The Brazilian enterprise has scaled up this traditional craft to an industrial operation. Dried timber is stacked into squat, cylindrical kilns, built of brick or masonry and arranged in long lines so that they can be easily filled and unloaded in sequence. The largest sites can sport hundreds of such kilns. Once filled, their entrances are sealed and a fire is lit from the top. The skill in charcoal production is to allow just enough air into the interior of the kiln. There must be enough combustion heat to drive out moisture and volatiles and to pyrolyse the wood, but not so much that you are left with nothing but a pile of ashes. The kiln attendant monitors the state of the burn by carefully watching the smoke seeping out of the top, opening air holes or sealing with clay as necessary to regulate the process. Brazil shows how the raw materials of modern civilisation can be supplied without reliance on fossil fuels Good things come to those who wait, and this wood pyrolysis process can take up to a week of carefully controlled smouldering. The same basic method has been used for millennia. However, the ends to which the fuel is put are distinctly modern. Brazilian charcoal is trucked out of the forests to the country’s blast furnaces where it is used to transform ore into pig iron. This pig iron is the basic ingredient of modern mass-produced steel. The Brazilian product is exported to countries such as China and the US where it becomes cars and trucks, sinks, bathtubs, and kitchen appliances. Around two-thirds of Brazilian charcoal comes from sustainable plantations, and so this modern-day practice has been dubbed ‘green steel’. Sadly, the final third is supplied by the non-sustainable felling of primary forest. Even so, the Brazilian case does provide an example of how the raw materials of modern civilisation can be supplied without reliance on fossil fuels. Another, related option might be wood gasification. The use of wood to provide heat is as old as mankind, and yet simply burning timber only uses about a third of its energy. The rest is lost when gases and vapours released by the burning process blow away in the wind. Under the right conditions, even smoke is combustible. We don’t want to waste it. Better than simple burning, then, is to drive the thermal breakdown of the wood and collect the gases. You can see the basic principle at work for yourself just by lighting a match. The luminous flame isn’t actually touching the matchwood: it dances above, with a clear gap in between. The flame actually feeds on the hot gases given off as the wood breaks down in the heat, and the gases combust only once they mix with oxygen from the air. Matches are fascinating when you look at them closely. Wartime gasifier cars could achieve about 1.5 miles per kilogram. Today’s designs improve upon this To release these gases in a controlled way, bake some timber in a closed container. Oxygen is restricted so that the wood doesn’t simply catch fire. Its complex molecules decompose through a process known as pyrolysis, and then the hot carbonised lumps of charcoal at the bottom of the container react with the breakdown products to produce flammable gases such as hydrogen and carbon monoxide. The resultant ‘producer gas’ is a versatile fuel: it can be stored or piped for use in heating or street lights, and is also suitable for use in complex machinery such as the internal combustion engine. More than a million gasifier-powered cars across the world kept civilian transport running during the oil shortages of the Second World War. In occupied Denmark, 95 per cent of all tractors, trucks and fishing boats were powered by wood-gas generators. The energy content of about 3 kg of wood (depending on its dryness and density) is equivalent to a litre of petrol, and the fuel consumption of a gasifier-powered car is given in miles per kilogram of wood rather than miles per gallon. Wartime gasifier cars could achieve about 1.5 miles per kilogram. Today’s designs improve upon this. But you can do a lot more with wood gases than just keep your vehicle on the road. It turns out to be suitable for any of the manufacturing processes needing heat that we looked at before, such as kilns for lime, cement or bricks. Wood gas generator units could easily power agricultural or industrial equipment, or pumps. Sweden and Denmark are world leaders in their use of sustainable forests and agricultural waste for turning the steam turbines in power stations. And once the steam has been used in their ‘Combined Heat and Power’ (CHP) electricity plants, it is piped to the surrounding towns and industries to heat them, allowing such CHP stations to approach 90 per cent energy efficiency. Such plants suggest a marvellous vision of industry wholly weaned from its dependency on fossil fuel. Is that our solution, then? Could our rebooting society run on wood, supplemented with electricity from renewable sources? Maybe so, if the population was fairly small. But here’s the catch. These options all presuppose that our survivors are able to construct efficient steam turbines, CHP stations and internal combustion engines. We know how to do all that, of course – but in the event of a civilisational collapse, who is to say that the knowledge won’t be lost? And if it is, what are the chances that our descendants could reconstruct it? In our own history, the first successful application of steam engines was in pumping out coal mines. This was a setting in which fuel was already abundant, so it didn’t matter that the first, primitive designs were terribly inefficient. The increased output of coal from the mines was used to first smelt and then forge more iron. Iron components were used to construct further steam engines, which were in turn used to pump mines or drive the blast furnaces at iron foundries. And of course, steam engines were themselves employed at machine shops to construct yet more steam engines. It was only once steam engines were being built and operated that subsequent engineers were able to devise ways to increase their efficiency and shrink fuel demands. They found ways to reduce their size and weight, adapting them for applications in transport or factory machinery. In other words, there was a positive feedback loop at the very core of the industrial revolution: the production of coal, iron and steam engines were all mutually supportive. In a world without readily mined coal, would there ever be the opportunity to test profligate prototypes of steam engines, even if they could mature and become more efficient over time? How feasible is it that a society could attain a sufficient understanding of thermodynamics, metallurgy and mechanics to make the precisely interacting components of an internal combustion engine, without first cutting its teeth on much simpler external combustion engines – the separate boiler and cylinder-piston of steam engines? It took a lot of energy to develop our technologies to their present heights, and presumably it would take a lot of energy to do it again. Fossil fuels are out. That means our future society will need an awful lot of timber. An industrial revolution without coal would be, at a minimum, very difficult In a temperate climate such as the UK’s, an acre of broadleaf trees produces about four to five tonnes of biomass fuel every year. If you cultivated fast-growing kinds such as willow or miscanthus grass, you could quadruple that. The trick to maximising timber production is to employ coppicing – cultivating trees such as ash or willow that resprout from their own stump, becoming ready for harvest again in five to 15 years. This way you can ensure a sustained supply of timber and not face an energy crisis once you’ve deforested your surroundings. But here’s the thing: coppicing was already a well-developed technique in pre-industrial Britain. It couldn’t meet all of the energy requirements of the burgeoning society. The central problem is that woodland, even when it is well-managed, competes with other land uses, principally agriculture. The double-whammy of development is that, as a society’s population grows, it requires more farmland to provide enough food and also greater timber production for energy. The two needs compete for largely the same land areas. We know how this played out in our own past. From the mid-16th century, Britain responded to these factors by increasing the exploitation of its coal fields – essentially harvesting the energy of ancient forests beneath the ground without compromising its agricultural output. The same energy provided by one hectare of coppice for a year is provided by about five to 10 tonnes of coal, and it can be dug out of the ground an awful lot quicker than waiting for the woodland to regrow. It is this limitation in the supply of thermal energy that would pose the biggest problem to a society trying to industrialise without easy access to fossil fuels. This is true in our post-apocalyptic scenario, and it would be equally true in any counterfactual world that never developed fossil fuels for whatever reason. For a society to stand any chance of industrialising under such conditions, it would have to focus its efforts in certain, very favourable natural environments: not the coal-island of 18th-century Britain, but perhaps areas of Scandinavia or Canada that combine fast-flowing streams for hydroelectric power and large areas of forest that can be harvested sustainably for thermal energy. Even so, an industrial revolution without coal would be, at a minimum, very difficult. Today, use of fossil fuels is actually growing, which is worrying for a number of reasons too familiar to rehearse here. Steps towards a low-carbon economy are vital. But we should also recognise how pivotal those accumulated reservoirs of thermal energy were in getting us to where we are. Maybe we could have made it the hard way. A slow-burn progression through the stages of mechanisation, supported by a combination of renewable electricity and sustainably grown biomass, might be possible after all. Then again, it might not. We’d better hope we can secure the future of our own civilisation, because we might have scuppered the chances of any society to follow in our wake.

#### Can’t rebuild industrial civilization.

John **Jacobi 17**. Leads an environmentalist research institute and collective, citing Fred Hoyle, British astronomer, formulated the theory of stellar nucleosynthesis, coined the term “big bang,” recipient of the Gold Medal of the Royal Astronomical Society, professor at the Institute of Astronomy, Cambridge University. 05-27-17. “Industrial Civilization Could Not Be Rebuilt.” The Wild Will Project. <https://www.wildwill.net/blog/2017/05/27/industrial-civilization-not-rebuilt/>

A suggestion, for the sake of thought: If industrial civilization collapsed, it probably could not be rebuilt. Civilization would exist again, of course, but industry appears to be a one-time experiment. The astronomist Fred Hoyle, exaggerating slightly, writes: It has often been said that, if the human species fails to make a go of it here on Earth, some other species will take over the running. In the sense of developing high intelligence this is not correct. We have, or soon will have, exhausted the necessary physical prerequisites so far as this planet is concerned. With coal gone, oil gone, high-grade metallic ores gone, no species however competent can make the long climb from primitive conditions to high-level technology. This is a one-shot affair. If we fail, this planetary system fails so far as intelligence is concerned. The same will be true of other planetary systems. On each of them there will be one chance, and one chance only. Hoyle overstates all the limits we actually have to worry about, but there are enough to affirm his belief that industry is a “one-shot affair.” In other words, if industry collapsed then no matter how quickly scientific knowledge allows societies to progress, technical development will hit a wall because the builders will not have the needed materials. For example, much of the world’s land is not arable, and some of the land in use today is only productive because of industrial technics developed during the agricultural revolution in the 60s, technics heavily dependent on oil. Without the systems that sustain industrial agriculture much current farm land could not be farmed; agricultural civilizations cannot exist there, at least until the soil replenishes, if it replenishes. And some resources required for industrial progress, like coal, simply are not feasibly accessible anymore. Tainter writes: . . . major jumps in population, at around A.D. 1300, 1600, and in the late eighteenth century, each led to intensification in agriculture and industry. As the land in the late Middle Ages was increasingly deforested to provide fuel and agricultural space for a growing population, basic heating, cooking, and manufacturing needs could no longer be met by burning wood. A shift to reliance on coal began, gradually and with apparent reluctance. Coal was definitely a fuel source of secondary desirability, being more costly to obtain and distribute than wood, as well as being dirty and polluting. Coal was more restricted in its spatial distribution than wood, so that a whole new, costly distribution system had to be developed. Mining of coal from the ground was more costly than obtaining a quantity of wood equivalent in heating value, and became even more costly as the 54 most accessible reserves of this fuel were depleted. Mines had to be sunk ever deeper, until groundwater flooding became a serious problem. Today, most easily accessible natural coal reserves are completely depleted. Thus, societies in the wake of our imagined collapse would not be able to develop fast enough to reach the underground coal. As a result of these limits, rebuilding industry would take at least thousands of years — it took 10,000 years the first time around. By the time a civilization reached the point where it could do something about industrial scientific knowledge it probably would not have the knowledge anymore. It would have to develop its sciences and technologies on its own, resulting in patterns of development that would probably look similar to historical patterns. Technology today depends on levels of complexity that must proceed in chronological stages. Solar panels, for example, rely on transportation infrastructure, mining, and a regulated division of labor. And historically the process of developing into a global civilization includes numerous instances of technical regression. The natives of Tasmania, for example, went from a maritime society to one that didn’t fish, build boats, or make bows and arrows. Rebuilding civilization would also be a bad idea. Most, who are exploited by rather than benefit from industry, would probably not view a rebuilding project as desirable. Even today, though citizens of first-world nations live physically comfortable lives, their lives are sustained by the worse off lives of the rest of the world. “Civilization . . . has operated two ways,” Paine writes, “to make one part of society more affluent, and the other more wretched, than would have been the lot of either in a natural state.” Consider the case of two societies in New Zealand, the Maori and the Moriori. Both are now believed to have originated out of the same mainland society. Most stayed and became the Maori we know, and some who became the Moriori people settled on the Chatham Islands in the 16th century. Largely due to a chief named Nunuku-whenua, the Moriori had a strict tradition of solving inter-tribal conflict peacefully and advocating a variant of passive resistance; war, cannibalism, and killing were completely outlawed. They also renounced their parent society’s agricultural mode of subsistence, relying heavily on hunting and gathering, and they controlled their population growth by castrating some male infants, so their impact on the non-human environment around them was minimal. In the meantime, the Maori continued to live agriculturally and developed into a populated, complex, hierarchical, and violent society. Eventually an Australian seal-hunting ship informed the Maori of the Moriori’s existence, and the Maori sailed to the Chathams to explore: . . . over the course of the next few days, they killed hundreds of Moriori, cooked and ate many of the bodies, and enslaved all the others, killing most of them too over the next few years as it suited their whim. A Moriori survivor recalled, “[The Maori] commenced to kill us like sheep . . . [We] were terrified, fled to the bush, concealed ourselves in holes underground, and in any place to escape our enemies. It was of no avail; we were discovered and eaten – men, women, and children indiscriminately.” A Maori conqueror explains, “We took possession . . . in accordance with our customs and we caught all the people. Not one escaped. Some ran away from us, these we killed, and others we killed – but what of that? It was in accordance with our custom.” Furthermore, we can deduce from the ubiquitous slavery in all the so-called “great civilizations” like Rome or Egypt that any attempt to rebuild a similar civilization will involve slavery. And to rebuild industry, something similar to colonization and the Trans-Atlantic Slave Trade would probably have to occur once again. After all, global chattel slavery enabled the industrial revolution by financing it, extracting resources to be accumulated at sites of production, and exporting products through infrastructure that slavery helped sustain. So, if industrial society collapsed, who would be doing the rebuilding? Not anyone most people like. It is hard to get a man to willingly change his traditional way of life; even harder when his new life is going into mines. And though history demonstrates that acts like those of the Maori or slave traders are not beyond man’s will or ability, certainly most in industrial society today would not advocate going through the phases required to reach the industrial stage of development.

### 1NC – Space Col

#### Space col causes inter-colony wars and war with ETs---extinction.

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3.3 Extraterrestrial life The scientific understanding of the origins of humankind and of life on Earth thus far paints a clear picture: We are the “products” of biological evolution, just as all other life forms on Earth. Furthermore, we know that life can come into existence where there was no life before, through so-called abiogenetic mechanisms. These basic facts lead to a clear conclusion: It is very improbable that life on Earth is a once-in-a-universe event; it is highly probable that life has come into existence elsewhere in the universe as well. We do not know whether extraterrestrial life currently exists, and whether there is any extraterrestrial life in our vicinity (as far as we know, there is none in our Solar System). In theory, our galaxy might be full of life and even highly intelligent and technologically advanced life, but, as the famous Fermi paradox posits32, there is no trace of any extraterrestrial intelligence. Be that as it may, it is possible that there is extraterrestrial life beyond Earth, and it is possible that we will come into contact with extraterrestrial life due to colonization activity. What should our moral attitude towards extraterrestrial life look like? The moral issue of our attitudes towards extraterrestrial life can be divided into three classes of problems, according to the type of life we are dealing with: Primitive non-sentient life. Primitive sentient life. Non-primitive sentient life. Primitive non-sentient life are life forms that resemble microbial life forms on Earth, such as bacteria. Extraterrestrial microbial life can be of great instrumental value, specifically to humans, but also in a more general sense. That is a strong argument in favor of studying and preserving extraterrestrial microbial life33; we should not go out of our way to destroy microbial life, because that life might be very useful. The main moral issue about primitive non-sentient life, however, is not the question of instrumental value, but rather the question of intrinsic value: Is there a moral obligation for humans not to manipulate or even end extraterrestrial microbial life forms? This problem is, in all likelihood, the most pressing moral issue about extraterrestrial life and space colonization and one that deserves greater practical attention34. A common argument in favor of the intrinsic value position is that of conation or goal-orientedness35 36: Because even microbial life forms act vaguely rational (they have goals and behave so as to achieve their goals), their existence has some intrinsic value. The problem with this moral argument is that it can easily lead to the conclusion of strong conservationism, whereby any habitable planet or moon should remain uncolonized, lest we interfere with microbes that we might have failed to detect37. In addition, if we accept a strong version of the intrinsic value argument, we already have immense moral problems: On Earth, we do not particularly care for any microbial life form on intrinsic grounds, and we even actively fight some of them. Primitive sentient life are life forms that are not as intelligent as humans, but that are sentient, in the sense of being able to experience positive or negative affective states. Even though sentience is not a perfectly precise concept38, and even though we lack the means for truly assessing qualia (subjective experiences) of life forms other than humans39, it is almost certain that we humans are not the only life form capable of experiencing pain and pain-related suffering and that many animals on our planet are sentient as well40. Sentient extraterrestrial life forms require a different moral stance than non-sentient life forms. Imagine, for example, that two human space ship are about to land on an exoplanet. As the space ships are landing, the exhaust from their engines heats up the ground. Space ship A is landing on a nest of insect-like non-sentient life forms, frying them alive in the process. Space ship B is landing on a herd of bunny-like sentient creatures, frying them alive in the process. Both outcomes are unfortunate, but undoubtedly, killing the sentient bunny-like creatures must be morally worse than killing the non-sentient insect-like creatures, because the bunnies experienced enormous pain while they were being killed. Our moral stance towards sentient primitive extraterrestrial life will have to take sentience into account. Avoiding suffering in sentient extraterrestrial life should be a universal rule of space colonization. Somewhat obviously, such a rule would also prohibit treating sentient extraterrestrial life forms as food (But it is highly improbable that humans would have to routinely rely on extraterrestrial sentient life forms as sources of nutrition, even though we would be technologically advanced enough to engage in intersolar space colonization. We are in the process of overcoming traditional agriculture today41; reverting to traditional agriculture on future extrasolar colonies would amount to an extraordinarily improbable and inefficient anachronism.). Non-primitive sentient life are life forms that are sentient and possess a general intelligence at least as great as our own (It is possible that highly intelligent life forms might be non-sentient, but at least on Earth, sentience seems to correlate with intelligence.). The moral challenge of this type of extraterrestrial life is the same as with primitive sentient life, and there are additional moral problems to consider. If there are intelligent life forms beyond Earth, their levels of technological development will have great variance; some life forms will be intelligent, but not yet developed, whereas others will be intelligent and much more technologically advanced than we are. Intelligent life forms that are less technologically developed than we are present us with a moral problem: Should we interact with such civilizations and try to help them develop faster and overcome problems? This moral problem has perhaps most famously been explored in the television show Star Trek with its “Prime Directive”: The fictional United Federation of Planets is never to interfere with a technologically undeveloped civilization in order to avoid doing damage (Alas, the protagonists of Star Trek end up violating the Prime Directive time and again; doing so makes for a good story.). More generally, the problem of non-interference can be described as a reversed Zoo hypothesis42, whereby it is not extraterrestrial civilizations treating Earth like a conservation project, but us humans pondering whether we should treat extraterrestrial civilizations as conservation projects. A strong argument in favor of non-interference is the risk of both causing bad outcomes, both in the short- as well as in the long-term. Interacting with less developed civilizations might inadvertently do more harm than good, and it might steer the affected civilizations away from a path to development that might be beneficial to humankind in the long run. On the other hand, however, not investing a small amount of resources to greatly improve lives and reduce suffering seems morally dubious. If an extraterrestrial civilization that is going through a historical era similar to our Middle Ages is confronted with some catastrophic disease like our Black Death pandemic, not helping that civilization fight that pandemic seems cruel; not least because the cost for helping that civilization would almost certainly be trivially low. 3.4 Cosmic suffering Imagine that humankind has successfully mastered phase II colonization (colonization beyond our Solar System). All the problems described in the previous sections and subsections have long been successfully solved, and humankind is progressing steadily and peacefully. Then, something happens. At some point and for some reason, future humans decide that they do not want to merely engage in space colonization, but to do more: Actively seed the universe with (non-human) life43. Given the technological development of future humankind, it is relatively easy to send out non-sentient primitive life forms across the galaxy. Unfortunately, something horrible happens: The primitive microbial life-forms sent out into the cosmos mutate into aggressive bacteria that attack any life form they encounter, including sentient life – and in doing so, they cause tremendous pain and agony in the organisms they attack. The benevolent idea of spreading life has quickly turned into unimaginable suffering of trillions of sentient beings across the galaxy. Colonizing humans have thus created suffering on a cosmic, or astronomical, scale44. Cosmic suffering is the risk of creating suffering on a scale that is either not possible or not as probable without space colonization. There are many potential scenarios in which successful space colonization results in cosmic suffering. For example, the general problem of the repugnant conclusion discussed further above can also be regarded as an example of this class of risks. Cosmic suffering is a severe problem because it is contingent on, or at least made more likely by, successful space colonization. The conceptually challenging aspect of cosmic suffering is the correlation of cosmic suffering with the degree of space colonization: The greater the level of space colonization, the greater the risks of cosmic suffering become. This is the opposite of the relationship between space colonization and existential risks: The greater the level of space colonization, the lower existential risks become – this is one of the main motivations for space colonization, after all. In other words, successful space colonization decreases the probability that something goes wrong for humankind in terms of existential risks, but it increases the probability that something goes wrong in terms of suffering for the whole universe. 4. Security challenges In the above discussions of political and moral challenges, it is presumed that the problems and challenges that arise do so in a generally peaceful system of colonization. However, peace in the sense of a lack of armed conflict is not guaranteed with space colonization. On the contrary: Space colonization might produce new kinds of security challenges. 4.1 Inter-colonial war Violence and war have been decreasing over the course of our civilization’s history45 46 47. The decrease in violent armed conflict has coincided with an increase in cultural, political, and economic interconnectedness. Even though major armed conflicts are not yet a thing of the past48, humankind will probably continue on its current trajectory of peace. With space colonization, however, the trend of growing closer together might reverse because of increasing fragmentation, and with that reversal, peaceful cooperation might again give way to armed conflict. Some amount of human fragmentation due to space colonization is almost inevitable. One of the strongest biases we humans have is the intergroup bias49: We tend to separate people into ingroups and outgroups, and we generally favor our own ingroup over any outgroup. Our ingroup favoritism is often the source of collective identity: We identify with our home city and think it is better than other cities; we identify with our favorite football team and think it is better than other teams; we identify with our country of origin and think it is better than other countries. In a future in which humans have successfully mastered type I colonization (colonization within our Solar System) and perhaps even type II colonization (intersolar colonization), belonging to one habitat rather than another will almost certainly also be a source of collective identity. Humans born and raised on Venus would probably have more positive general attitudes towards Venus than towards Earth. That is not a problem in and of itself, but it can become a problem: If humankind is very successful at space colonization and manages to establish colonies across the galaxy, the ingroup dynamics within colonies and regions of colonies might grow so much that the perceived benefits of armed conflict increase, and the perceived costs decrease. In part, this might be due to the infrahumanization (or dehumanization) bias50: Our intergroup bias can have the effect of perceiving members of the outgroup as less human than members of our own ingroup. The problem of intergroup bias and armed conflict could be compounded by real biological differences in the long-term future. In the long term, different colonies of humans might adopt different stances on human enhancement technology and embrace different kinds of enhancement technologies. These differential paths of human enhancement might result in technology-induced quasi-speciation, whereby different strands of humans have increasingly distinct biological traits. The ultimate result of such a development might be a strong fragmentation of humankind and an increasing arms race in order to defend against the outgroup of all the (former) humans that are different from the ingroup (former) humans51. 4.2 Extraterrestrial (existential) risks Space colonization will increase the probability of discovering and coming into contact with extraterrestrial intelligence, either biological or artificial (in the sense of hypothetical advanced artificial general intelligence52). That prospect poses some moral challenges, as argued in subsection 3.3. However, it might also pose a security challenge if an extraterrestrial intelligence more technologically advanced than humankind has goals and preferences that go against the goals and preferences of humankind. In general, there are three categories of attitudes an extraterrestrial intelligence can have towards humankind53. First, an extraterrestrial intelligence can be benevolent. A benevolent extraterrestrial intelligence is one that would change its goals and preferences upon learning of humankind. Humankind is a benevolent intelligence: If we, for example, came into contact with an extraterrestrial civilization, we would obviously take the goals and preferences of that civilization into account and update our own goals and preferences, since we are morally advanced enough to do so. Second, an extraterrestrial intelligence can be apathetic. An apathetic extraterrestrial intelligence is one that does not at all change its goals and preferences upon learning of humankind. An apathetic intelligence would neither try to accommodate humankind, nor would it react in some non-friendly way. It would not care at all. The attitude of an apathetic intelligence is similar to the attitude we humans have when it comes to some random microbial life form on Earth: We might understand that that life form exists, but we do not care either way. Third, an extraterrestrial intelligence can be hostile. Hostility in a general sense means that an intelligence reacts to learning of humankind by regarding its own goals and preferences as categorically more important than humankind’s. A hostile extraterrestrial intelligence is not necessarily a security threat to humankind; hostility in this context does not mean hostility in the Hollywood kind but hostility in the sense of active disregard of humankind’s goals and preferences. That, however, might still represent a tremendous security risk. For example, a hostile intelligence might prefer humankind not to exist because our mere existence is perceived as a slight discomfort to the extraterrestrial intelligence. Hostile extraterrestrial intelligence thus represents a form of existential risk.

## WARMING

#### No extinction – it takes 12 degrees without adaptation

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The most likely levels of global warming are very unlikely to cause human extinction.15 The existential risks of climate change instead stem from tail risk climate change – the low probability of extreme levels of warming – and interaction with other sources of risk. It is impossible to say with confidence at what point global warming would become severe enough to pose an existential threat. Research has suggested that warming of 11-12°C would render most of the planet uninhabitable,16 and would completely devastate agriculture.17 This would pose an extreme threat to human civilisation as we know it.18 Warming of around 7°C or more could potentially produce conflict and instability on such a scale that the indirect effects could be an existential risk, although it is extremely uncertain how likely such scenarios are.19 Moreover, the timescales over which such changes might happen could mean that humanity is able to adapt enough to avoid extinction in even very extreme scenarios. The probability of these levels of warming depends on eventual greenhouse gas concentrations. According to some experts, unless strong action is taken soon by major emitters, it is likely that we will pursue a medium-high emissions pathway.20 If we do, the chance of extreme warming is highly uncertain but appears non-negligible. Current concentrations of greenhouse gases are higher than they have been for hundreds of thousands of years,21 which means that there are significant unknown unknowns about how the climate system will respond. Particularly concerning is the risk of positive feedback loops, such as the release of vast amounts of methane from melting of the arctic permafrost, which would cause rapid and disastrous warming.22 The economists Gernot Wagner and Martin Weitzman have used IPCC figures (which do not include modelling of feedback loops such as those from melting permafrost) to estimate that if we continue to pursue a medium-high emissions pathway, the probability of eventual warming of 6°C is around 10%,23 and of 10°C is around 3%.24 These estimates are of course highly uncertain. It is likely that the world will take action against climate change once it begins to impose large costs on human society, long before there is warming of 10°C. Unfortunately, there is significant inertia in the climate system: there is a 25 to 50 year lag between CO2 emissions and eventual warming,25 and it is expected that 40% of the peak concentration of CO2 will remain in the atmosphere 1,000 years after the peak is reached.26 Consequently, it is impossible to reduce temperatures quickly by reducing CO2 emissions. If the world does start to face costly warming, the international community will therefore face strong incentives to find other ways to reduce global temperatures.

#### Best science proves no warming impact.

Idso et al.18 (Craig, Geography@ArizonaState, David Legates, Climatology@Delaware, ProfClimatology@Deleware, Fred Singer, Physics@Princeton, ProfEnviroScience@Virginia, Climate Change Reconsidered II: Fossil Fuels, NIPCC, Ch.2, p. 108-109, Chapter Contributors: Joseph Bast, FormerPresident@HeartlandInstitute, Patrick Frank, PhD Chemistry@Stanford, Kenneth Haapala, MS Econ, President@Science+EnvironmentalPolicyProject, Jay Lehr, PhD Hyrdrology@Arizona, Patrick Moore, Co-Founder@Greenpeace, PhD Ecology@UniversityBrittishColumbia, Willie Soon, PhD AerospaceEngineering@USC, Chapter Reviewers: Charles Anderson, PhD Biology@Stanford, AssocProfBiolofy@PennState, Dennis Avery, DirectorFoodSecurity@Hudson, FormerUSDeptAg, Timothy Ball, PhD Climatology@QueenMary, FormerProfGeography@Winnipeg, David Bowen, PhD Geology@UCBoulder, ProfGeology@MontanaState, David Burton, MA CompSci@UTAustin, Mark Campbell, PhD Chemistry@JohnsHopkins, ProfChemistry@USNavalAcademy, David Deming, PhD PublicPolicy@Harvard, ProfPublicPolicy@Harvard, Rex Fleming, PhD AtmosphericScience@Michigan, Lee Gerhard, PhD Geology@Kansas, François Gervais, PhD Physics@UniversityNewOreleans, ProfPhysics@FrançoisRabelaisUniversity, Laurence Gould, ProfPhysics@UniversityHatford, PhD Physics@Temple, Kesten Green, PhD Managment@VictoriaManagmentSchool, Hermann Harde, PhD Engineering@UniversityOfKaiserslautern, Howard Hayden, PhD Physics@DenverUniversity, Ole Humlum, PhD GlacialGeomorphology@UniversityCopenhagen, ProfGeography@Oslo, Richard Keen, PhD Climatology@Colorado, ProfAtmosphericScience@Colorado, William Kininmonth, MSc@Colorado, FormerHead@AustralianBureauOfMeteorologyNationalClimateCenter, Anthony Lupo, PhD AtmosphericScience@Purdue, ProfAtmosphericScience@Missouri, Robert Murphy, PhD Chemistry@MIT, ProfPharmacology@Colorado, David Nebert, MD@UniversityOregon, ProfEnvironmentalHealth@Cincinati, Norman Page, PhD Geology@Illinois, Frederick Palmer, JD@Arizona, Gath Paltridge, PhD AtmosphericPhysics@UniversityMelbourne, ChiefResearchScientist@CSIRODivisionAtmosphericResearch, Jim Petch, PhD Geography@KingsCollegeLondon, Jan-Erik Solheim, MA PoliSci@Oslo, FormerExecDirectorUNEnvironmentProgram, Peter Stilbs, PhD Chemistry@RoyalInstituteTechnology, Roger Tattersol, BA History+PhilosophyOfScience@Leeds, Frank Tipler, PhD Physics@Maryland, ProfPhysics@Tulane, Ftitz Vahrenholt, PhD Chemistry@Munster, Art Viterito, PhD Climatology@Denver, ProfGeography@Maryland, Lance Wallace, PhD Physics@CUNY)

Methodology The Scientific Method is a series of requirements imposed on scientists to ensure the integrity of their work. The IPCC has not followed established rules that guide scientific research. Appealing to consensus may have a place in science, but not as a means of shutting down debate. Uncertainty in science is unavoidable but must be acknowledged. Many declaratory and predictive statements about the global climate are not warranted by science. Observations Surface air temperature is governed by energy flow from the Sun to Earth and from Earth back into space. Whatever diminishes or intensifies this energy flow can change air temperature. Levels of carbon dioxide and methane in the atmosphere are governed by processes of the carbon cycle. Exchange rates and other climatological processes are poorly understood. The geological record shows temperatures and CO2 levels in the atmosphere have not been stable, making untenable the IPCC’s assumption that they would be stable in the future in the absence of human emissions. Water vapor is the dominant greenhouse gas owing to its abundance in the atmosphere and the wide range of spectra in which it absorbs radiation. Carbon dioxide (CO2) absorbs energy only in a very narrow range of the longwave infrared spectrum. Controversies Reconstructions of average global surface temperature differ depending on the methodology used. The warming of the twentieth and early twenty-first centuries has not been shown to be beyond the bounds of natural variability. General circulation models (GCMs) are unable to accurately depict complex climate processes. They do not accurately hindcast or forecast the climate effects of human-related greenhouse gas emissions. Estimates of equilibrium climate sensitivity (the amount of warming that would occur following a doubling of atmospheric CO2 level) range widely. The IPCC’s estimate is higher than many recent estimates. Solar irradiance, magnetic fields, UV fluxes, and cosmic rays are poorly understood and may have greater influence on climate than general circulation models currently assume. Climate Impacts There is little evidence that the warming of the twentieth and early twenty-first centuries has caused a general increase in severe weather events. Meteorological science suggests a warmer world will see milder weather patterns. Arctic ice is losing mass, but melting commenced before there was a human impact on climate and is not unprecedented. Antarctica is either gaining ice mass or is unchanged. Best available data show sea-level rise is not accelerating. Local and regional sea levels continue to exhibit typical natural variability. The link between warming and drought is weak, and by some measures drought decreased over the twentieth century. Changes in the hydrosphere of this type are regionally highly variable and show a closer correlation with multidecadal climate rhythmicity than they do with global temperature. Plants have responded positively to rising temperatures and carbon dioxide levels in the atmosphere, a trend that is likely to continue beyond the twenty-first century. Why Scientists Disagree Climate is an interdisciplinary subject requiring insights from many fields of study. Very few scholars have mastery of more than one or two of these disciplines. Fundamental uncertainties arise from insufficient observational evidence and disagreements over how to interpret data and how to set the parameters of models. Many scientists trust the Intergovernmental Panel on Climate Change (IPCC) to objectively report the latest scientific findings on climate change, but it has failed to produce balanced reports and has allowed its findings to be misrepresented to the public. Climate scientists, like all humans, can have tunnel vision. Bias, even or especially if unconscious, can be especially pernicious when data are equivocal and allow multiple interpretations, as in climatology. Appeals to Consensus Surveys and abstract-counting exercises that are said to show a “scientific consensus” on the causes and consequences of climate change invariably ask the wrong questions or the wrong people. No survey data exist that support claims of consensus on important scientific questions. Some survey data, petitions, and peer-reviewed research show deep disagreement among scientists on issues that must be resolved before the man-made global warming hypothesis can be accepted. Some 31,000 scientists have signed a petition saying “there is no convincing scientific evidence that human release of carbon dioxide, methane, or other greenhouse gases is causing or will, in the foreseeable future, cause catastrophic heating of the Earth’s atmosphere and disruption of the Earth’s climate.” Prominent climate scientists have said repeatedly that there is no consensus on the most important issues in climate science.

### 1NC - CO2 Ag

#### Co2 key to food, biodiversity, and halting land conversion.

Carter et al. 14 (Dr. Robert M. Carter, Emeritus Fellow, Institute of Public Affairs, Dr. S. Fred Singer, Science and Environmental Policy Project, Dr. Craig D. Idso, Dr. Sherwood B. Idso, Center for the Study of Carbon Dioxide and Global Change, and, CLIMATE CHANGE RECONSIDERED II: BIOLOGICAL IMPACTS, Nongovernmental International Panel on Climate Change, 2014, p. 473-475. Gender edited

The key findings of this chapter are listed below. • Rising atmospheric CO2 and warming temperatures, both of which IPCC claims constitute a significant threat to the biosphere, benefited agriculture in the ancient past and in the twentieth century. • Empirical studies suggest a future warming of the climate coupled with rising atmospheric CO2 levels will boost global agricultural production and help meet the food needs of the planet’s growing population. • When model-based studies fully account for the growth-enhancing and water-conserving benefits of atmospheric CO2 enrichment, they project significant gains for future agricultural production. • The vigor of the terrestrial biosphere has been increasing with time, revealing a great greening of the planet that extends across the globe. • Satellite-based analyses of net terrestrial primary productivity (NPP) reveal an increase of around 6– 13% since the 1980s. • There is no empirical evidence to support the model-based claim that future carbon uptake will diminish on a global scale due to rising temperatures. • Earth’s land surfaces were a net source of CO2- carbon to the atmosphere until about 1940. From 1940 onward, the terrestrial biosphere has become, in the mean, an increasingly greater sink for CO2- carbon. • Over the past 50 years, global carbon uptake has doubled from 2.4 ± 0.8 billion tons in 1960 to 5.0 ± 0.9 billion tons in 2010. • The observed greening of the Earth has occurred in spite of the many real and imagined assaults on the planet’s vegetation over this time period, including fires, disease, outbreaks of pests, deforestation, and climatic changes (primarily in temperature and precipitation). • The atmosphere’s rising CO2 content—which IPCC considers to be the chief culprit behind its concerns about the future of the biosphere—is most likely the primary cause of the observed greening trends. • In the future, plants should be able to adjust their physiology to accommodate a warming of the magnitude and rate of rise typically predicted by climate models to accompany the projected future increase in atmospheric CO2 content. • The rise in the air’s CO2 concentration and its antitranspiration effect, which improves plant wateruse efficiency, are enhancing and will continue to enhance the vegetative productivity of Africa. • The rise of the air’s CO2 concentration and temperature to their highest values of the past century enhanced the terrestrial vegetative productivity of all parts of Asia, including deserts, forests, grasslands, and the Tibetan Plateau. • Evergreen vegetation, woody plants, and other plant life have increased across Australia over the past 200 years as a result of CO2 enrichment. • Over the last two decades of the twentieth century, Europe as a whole became greener and much of it is seeing an increase in woodlands due to the recent rise in atmospheric CO2, which has tended to offset the detrimental effects of climate change in the region. • Opposite the forecasts promulgated by the models used by IPCC, land-based plants of the Arctic and near-Arctic regions of North America are thriving, thanks in large part to the ongoing rise in the atmosphere’s CO2 concentration and global warming. • Late twentieth-century increases in air temperature and atmospheric CO2 concentration did not negatively affect plant communities in the eastern United States. Rather, the temperature and CO2 increases significantly enhanced local and regional productivity, and there is little reason to think such enhancements will not continue throughout the foreseeable future. • The late twentieth-century rise in temperature and atmospheric CO2 concentrations improved the productivity of plant communities in the central region of the United States, notwithstanding model-based concerns to the contrary. • The late twentieth-century rise in temperature and atmospheric CO2 improved the productivity of plant communities in the western region of the United States, notwithstanding model-based projections of unprecedented ecological disaster due to rising temperatures and drought. • Warmer temperatures and higher CO2 concentrations are resulting in net primary productivity increasing across tropical South America, overcoming the effects of deforestation, forest fires, and incursions by human civilization into natural areas. • It is likely the greening of the planet will continue in the future, even if the largest temperature increases predicted by the models occur, because the optimum temperature for plant growth and development typically rises with increasing levels of atmospheric CO2. This response, coupled with expected increases in plant photosynthetic rates from the rise in the air’s CO2 concentration, is more than enough to compensate for any temperature-induced plant stress caused by global warming. • Real-world observations reveal plants have many ways of adjusting to changes in climate in addition to their ability to spread from places of rising warmth to cooler habitats, and these observations suggest the planet’s current assemblage of plants is likely to be around a good deal longer than many theoretical models have predicted. • A major cause of biodiversity reductions is not rising atmospheric CO2 concentrations, but instead the direct encroachment of [hu]man[s] upon the world of nature. Anthropogenic global warming, to whatever extent it exists, is helping plants overcome these assaults and thrive despite the growing human presence. • As good as things currently are for world agriculture, and as much better as they are expected to become as the atmospheric CO2 content continues to rise, there may be additional substantial room for both natural selection and bioengineering to remove the constraints of low CO2 adaptation in several important agricultural crops and thereby create novel genotypes able to exploit high CO2 conditions to their—and our— advantage. • The ongoing rise in atmospheric CO2 content is likely exerting significant selection pressure on Earth’s naturally occurring terrestrial plants, which should improve their performance in the face of various environmental stressors via the process of microevolution. Plants may be much better prepared than most scientists once thought to meet whatever climatic challenges, including global warming, the future may pose for them. • Evidence continues to accumulate for substantial heritable variation of ecologically important plant traits, including root allocation, drought tolerance, and nutrient plasticity, which suggests rapid evolution based on epigenetic variation alone should be possible.

#### Co2 key to ag and habitat diversity—their impacts are hype.

Goklany 15. (Dr. Indur M. Goklany, PhD MSU, is a science and technology policy analyst for the United States Department of the Interior, where he holds the position of Assistant Director of Programs, Science and Technology Policy. CARBON DIOXIDE The good news. <http://www.thegwpf.org/content/uploads/2015/10/benefits.pdf>)

Summary 1. This paper addresses the question of whether, and how much, increased carbon dioxide concentrations have benefited the biosphere and humanity by stimulating plant growth, warming the planet and increasing rainfall. 2. Empirical data confirms that the biosphere’s productivity has increased by about 14% since 1982, in large part as a result of rising carbon dioxide levels. 3. Thousands of scientific experiments indicate that increasing carbon dioxide concentrations in the air have contributed to increases in crop yields. 4. These increases in yield are very likely to have reduced the appropriation of land for farming by 11–17% compared with what it would otherwise be, resulting in more land being left wild. 5. Satellite evidence confirms that increasing carbon dioxide concentrations have also resulted in greater productivity of wild terrestrial ecosystems in all vegetation types. 6. Increasing carbon dioxide concentrations have also increased the productivity of many marine ecosystems. 7. In recent decades, trends in climate-sensitive indicators of human and environmental wellbeing have improved and continue to do so despite claims that they would deteriorate because of global warming. 8. Compared with the benefits from carbon dioxide on crop and biosphere productivity, the adverse impacts of carbon dioxide – on the frequency and intensity of extreme weather, on sea level, vector-borne disease prevalence and human health – have been too small to measure or have been swamped by other factors. 9. Models used to influence policy on climate change have overestimated the rate of warming, underestimated direct benefits of carbon dioxide, overestimated the harms from climate change and underestimated human capacity to adapt so as to capture the benefits while reducing the harms. 10. It is very likely that the impact of rising carbon dioxide concentrations is currently net beneficial for both humanity and the biosphere generally. These benefits are real, whereas the costs of warming are uncertain. Halting the increase in carbon dioxide concentrations abruptly would deprive people and the planet of the benefits of carbon dioxide much sooner than they would reduce any costs of warming.

#### Most likely cause of global conflict, but solving it is a dampener.

Lehane 17 [Sinéad Lehane is research manager for Future Directions International’s Global Food and Water Crises Research program. Her current research projects include Australia’s food system and water security in the Tibetan Plateau region. Shaping Conflict in the 21st Century—The Future of Food and Water Security. February 2, 2017. www.hidropolitikakademi.org/shaping-conflict-in-the-21st-century-the-future-of-food-and-water-security.html]

In his book, The Coming Famine, Julian Cribb writes that the wars of the 21st century will involve failed states, rebellions, civil conflict, insurgencies and terrorism. All of these elements will be triggered by competition over dwindling resources, rather than global conflicts with clearly defined sides. More than 40 countries experienced civil unrest following the food price crisis in 2008. The rapid increase in grain prices and prevailing food insecurity in many states is linked to the outbreak of protests, food riots and the breakdown of governance. Widespread food insecurity is a driving factor in creating a disaffected population ripe for rebellion. Given the interconnectivity of food security and political stability, it is likely food will continue to act as a political stressor on regimes in the Middle East and elsewhere. Addressing Insecurity Improving food and water security and encouraging resource sharing is critical to creating a stable and secure global environment. While food and water shortages contribute to a rising cycle of violence, improving food and water security outcomes can trigger the opposite and reduce the potential for conflict. With the global population expected to reach 9 billion by 2040, the likelihood of conflict exacerbated by scarcity over the next century is growing. Conflict is likely to be driven by a number of factors and difficult to address through diplomacy or military force. Population pressures, changing weather, urbanization, migration, a loss of arable land and freshwater resources are just some of the multi-layered stressors present in many states. Future inter-state conflict will move further away from the traditional, clear lines of military conflict and more towards economic control and influence.

### 1NC - Ice Age

#### Ice age coming but warming stops it – most recent ev.

Martin 20 [Sean Martin, 2-7-2020, "Ice age shock: ‘Timing is right for the next ice age to come around soon’," Express.co.uk, https://www.express.co.uk/news/science/1239246/ice-age-long-range-weather-forecast-climate-change-weather-warning, accessed 9-5-2020]LHSBC

Over millions of years, Earth goes through ice ages and then warm periods depending on the planet’s rotation around the Sun. Currently, it is in a warmer period – although it is important to note that it is exacerbated by global warming and not an explanation for the unnaturally [warming planet](https://www.express.co.uk/latest/climate-change).∂ However, a climate scientist has said Earth should be gearing up to go through another ice age soon.∂ There have been at least five major ice ages on Earth throughout its history, with the last one ending roughly 12,800 years ago.∂ These ice ages lasted for hundreds of thousands of years and saw temperatures drop sharply across the globe – cold enough to stop snow from melting and causing glaciers to form.∂ Professor James Renwick from the School of Geography, Environment, and Earth Sciences at the University of Wellington has said the planet should be going through a cooler period in due time.∂ He wrote in an article for the Conversation: “The timing is right for the next ice age to come around soon.∂ “For the past two and a half million years, the Earth has experienced regular ice ages, related to slow changes to earth’s orbit around the sun and changes in the earth’s axis of rotation (Milankovitch cycles).∂ “We are currently in one of the warm periods (interglacials) between ice ages and the present interglacial should be ending about now.”∂ However, Prof Renwick added: “There is a catch”.∂ Due to human activity and the pumping of greenhouse gasses into the atmosphere, the next ice age has been seriously delayed.∂ Carbon dioxide traps heat within the atmosphere, which is preventing the planet from going into another cooling cycle.∂ This is yet further evidence that human activity is destroying the fragile ecosystem of the planet.∂ Prof Renwick said: “Ice ages didn’t happen for millions of years because there was too much carbon dioxide in the air.∂ “The change in sunlight associated with the ice age cycles is quite subtle and takes thousands of years to make a difference to temperatures and to ice gain or loss.∂ “When atmospheric carbon dioxide is above about 300 parts per million, the infrared warming effect is so strong it drowns out the more subtle Milankovitch cycles and there are no ice ages.∂ “Coming out of the Pliocene period just under three million years ago, carbon dioxide levels dropped low enough for the ice age cycles to commence.∂ “Now, carbon dioxide levels are over 400 parts per million and are likely to stay there for thousands of years, so the next ice age is postponed for a very long time.

#### Ice age causes extinction.

Chapman 08 (Phil, geophysicist and astronautical engineer, bachelor of science degree in Physics and Mathematics from Sydney University, a master of science degree in Aeronautics and Astronautics from the Massachusetts Institute of Technology, “Sorry to ruin the fun, but an ice age cometh,” 4/23/08, The Australian, <http://www.theaustralian.com.au/news/sorry-to-ruin-the-fun-but-an-ice-age-cometh/story-e6frg73o-1111116134873>)

What is scary about the picture is that there is only one tiny sunspot. Disconcerting as it may be to true believers in global warming, the average temperature on Earth has remained steady or slowly declined during the past decade, despite the continued increase in the atmospheric concentration of carbon dioxide, and now the global temperature is falling precipitously. All four agencies that track Earth's temperature (the Hadley Climate Research Unit in Britain, the NASA Goddard Institute for Space Studies in New York, the Christy group at the University of Alabama, and Remote Sensing Systems Inc in California) report that it cooled by about 0.7C in 2007. This is the fastest temperature change in the instrumental record and it puts us back where we were in 1930. If the temperature does not soon recover, we will have to conclude that global warming is over. There is also plenty of anecdotal evidence that 2007 was exceptionally cold. It snowed in Baghdad for the first time in centuries, the winter in China was simply terrible and the extent of Antarctic sea ice in the austral winter was the greatest on record since James Cook discovered the place in 1770. It is generally not possible to draw conclusions about climatic trends from events in a single year, so I would normally dismiss this cold snap as transient, pending what happens in the next few years. This is where SOHO comes in. The sunspot number follows a cycle of somewhat variable length, averaging 11 years. The most recent minimum was in March last year. The new cycle, No.24, was supposed to start soon after that, with a gradual build-up in sunspot numbers. It didn't happen. The first sunspot appeared in January this year and lasted only two days. A tiny spot appeared last Monday but vanished within 24 hours. Another little spot appeared this Monday. Pray that there will be many more, and soon. The reason this matters is that there is a close correlation between variations in the sunspot cycle and Earth's climate. The previous time a cycle was delayed like this was in the Dalton Minimum, an especially cold period that lasted several decades from 1790. Northern winters became ferocious: in particular, the rout of Napoleon's Grand Army during the retreat from Moscow in 1812 was at least partly due to the lack of sunspots. That the rapid temperature decline in 2007 coincided with the failure of cycle No.24 to begin on schedule is not proof of a causal connection but it is cause for concern. It is time to put aside the global warming dogma, at least to begin contingency planning about what to do if we are moving into another little ice age, similar to the one that lasted from 1100 to 1850. There is no doubt that **the next little ice age would be much worse than the previous one and much more harmful than anything warming may do.** There are many more people now and we have become dependent on a few temperate agricultural areas, especially in the US and Canada. Global warming would increase agricultural output, but global cooling will decrease it. Millions will starve if we do nothing to prepare for it (such as planning changes in agriculture to compensate), and millions more will die from cold-related diseases. There is also another possibility, remote but much more serious. The Greenland and Antarctic ice cores and other evidence show that for the past several million years, severe glaciation has almost always afflicted our planet. The bleak truth is that, under normal conditions, most of North America and Europe are buried under about 1.5km of ice. This bitterly frigid climate is interrupted occasionally by brief warm interglacials, typically lasting less than 10,000 years. The interglacial we have enjoyed throughout recorded human history, called the Holocene, began 11,000 years ago, so the ice is overdue. We also know that glaciation can occur quickly: the required decline in global temperature is about 12C and it can happen in 20 years. The next descent into an ice age is inevitable but may not happen for another 1000 years. On the other hand, it must be noted that the cooling in 2007 was even faster than in typical glacial transitions. If it continued for 20 years, the temperature would be 14C cooler in 2027. By then, most of the advanced nations would have ceased to exist, vanishing under the ice, and the rest of the world would be faced with a catastrophe beyond imagining. Australia may escape total annihilation but would surely be overrun by millions of refugees. Once the glaciation starts, it will last 1000 centuries, an incomprehensible stretch of time. If the ice age is coming, there is a small chance that we could prevent or at least delay the transition, if we are prepared to take action soon enough and on a large enough scale. For example: We could gather all the bulldozers in the world and use them to dirty the snow in Canada and Siberia in the hope of reducing the reflectance so as to absorb more warmth from the sun. We also may be able to release enormous floods of methane (a potent greenhouse gas) from the hydrates under the Arctic permafrost and on the continental shelves, perhaps using nuclear weapons to destabilise the deposits. We cannot really know, but my guess is that the odds are at least 50-50 that we will see significant cooling rather than warming in coming decades. The probability that we are witnessing the onset of a real ice age is much less, perhaps one in 500, but not totally negligible. All those urging action to curb global warming need to take off the blinkers and give some thought to what we should do if we are facing global cooling instead. It will be difficult for people to face the truth when their reputations, careers, government grants or hopes for social change depend on global warming, but the fate of civilisation may be at stake. In the famous words of Oliver Cromwell, "I beseech you, in the bowels of Christ, think it possible you may be mistaken."

### 1NC - REM

#### Warming solves rare earth mineral shortages.

McGinnis 12 (Paul E. McGinnis is a contributing writer to EcoWatch. He has interviewed a stellar array of change makers including Sylvia Earle, Dean Kamen, Ray Kurzweil, Fabien Cousteau and Josh Fox. Paul is also a New York based real estate broker, and green building and renovation consultant. He is a member of the U.S. Green Building Council, the Northeast Sustainable Energy Association, and the New York State Association of Realtors. McGinnis, P. E. “Greenland’s Ice Melt Ignites Race for Rare Earth Metals,” 11/12/2012, http://ecowatch.com/2012/11/12/greenlands-rare-earth-metals//ghs-kw)

Greenland’s vast, pristine, virtually-untouched terrain is becoming a hotbed for resource extraction. The Arctic is melting at an unprecedented rate, making Greenland’s natural resources, including high demand commodities such as oil, gas, gold, iron, copper and rare earth metals, more accessible. Insatiable international oil, gas and mining conglomerates are now aggressively vying to control access to the riches glaciers once denied. “This is not just a region of ice and polar bears,” Prime Minister of Greenland, Kuupik Kleist, told Reuters in the capital Nuuk, formerly known by its Danish name Godthab. “Developing countries are interested in a more political role in opening up of the Arctic. Greenland could serve as a stepping stone.” Greenland has less than 60,000 people living in an 836,109 square mile area. Comparatively, Greenland is almost a quarter the size of the continental U.S. Until recently, the country was regarded by strategists as barren wasteland with little political or economic import. But now this once overlooked arctic island is being targeted by government and politically connected entities, anxious to extract what lies beneath the glacier ice sheet. The powerful and deep-pocketed interests include China, the U.S., Russia and the European Union. Many in Greenland are excited about the attention the remote island nation is attracting and are happy to have world powers courting Greenland looking to strike it rich. Greenlanders are hoping they too will get rich along with the foreign investors. Henrik Stendal, head of the geology department at Greenland’s Bureau of Minerals and Petroleum, a Dane who has worked in Greenland since 1970, told the U.K. Guardian in July: “We have shown that we have huge potential—it has been an eye-opener for the mining industry. The EU has shown a lot of interest and that’s been very good—we believe this could be very valuable for Greenland. There could be benefits for everyone—at present most of our income is from fishing and a little bit of tourism, so the government really wants another income.” In addition to oil and gas, and perhaps even more attractive to industry, are rare earth metals that lie beneath the ground in Greenland that are essential components in new technologies, including computer hard drives, cell phones and flat screen devices. The world is consuming these rare earth metals at a voracious rate. For instance, in the first weekend of sales, the 4G iPad mini sold four million units. Our appetite for these devices and the rare metals required seems unending. Rare earth metals are also essential elements to military guidance systems and other defense related technology. Most of the rare earth metals are currently sourced in China. Now, the world’s nations are considering Greenland’s resources not just from an economic point of view, but, perhaps more importantly, a strategic perspective. There is a national security imperative when looking at availability of these resources and who controls them. The New York Times reported in September: “Western nations have been particularly anxious about Chinese overtures to this poor and sparsely populated island, a self-governing state within the Kingdom of Denmark, because the retreat of its ice cap has unveiled coveted mineral deposits, including rare earth metals that are crucial for new technologies like cellphones and military guidance systems. A European Union vice president, Antonio Tajani, rushed here to Greenland’s capital in June, offering hundreds of millions in development aid in exchange for guarantees that Greenland would not give China exclusive access to its rare earth metals, calling his trip ‘raw mineral diplomacy.'” “In the past 18 months, Secretary of State Hillary Rodham Clinton and President Lee Myung-bak of South Korea have made debut visits here, and Greenland’s prime minister, Kuupik Kleist, was welcomed by President José Manuel Barroso of the European Commission in Brussels.”

#### Uranium shortages are coming – triggers nuclear resource wars over uranium and REMs.

Konstantiov 12 (Mihail Konstantiov, Professor of Mathematics with the University of Architecture, Civil Engineering and Geodesy (UACEG), Bulgaria, Vice-Chancellor of UACEG (1999-2003), Member of scientific councils and commissions, Member of the Board of IICREST. He has authored 30 books and over 500 scientific papers. He has participated in international scientific projects of EU and NATO and realized research and lecturing visits in British, German and French universities. Prof. Konstantinov has been Member and Vice Chair of the Central Election Commission of Bulgaria and Voting coordinator of OSCE (1997-) as well as the Bulgarian representative at the Council of Europe on electronic voting. In addition to his scientific publications, he has authored more than 300 articles in Bulgarian editions devoted to social and political issues with emphasis on election practice and legislation., “Uranium time bomb ticking”, Europost, 2-11-2012, http://www.europost.bg/article?id=3763)

In 1945, the US had three nucle­ar bombs - two plu­to­ni­um-based devi­ces and a ura­ni­um-based one. The first one was det­o­nat­ed on a test site in New Mex­i­co, and the sec­ond and third ones over Jap­a­nese ter­ri­to­ry. On 6 August 1945, the then-only ura­ni­um-based bomb was thrown over the Jap­a­nese city of Hiro­shi­ma. What hap­pened is well known and I will not re-tell it. More­over, this sto­ry deals with nucle­ar weap­ons but they are not the main char­ac­ters. Almost 20 years ago, an agree­ment was inked under which the US under­took to help dis­man­tle Rus­sian nucle­ar war­heads and con­vert the ura­ni­um from them into fuel for nucle­ar reac­tors. The rea­son is sim­ple - the pro­ce­dure is expen­sive, Rus­sia was weak and poor at the time, and in addi­tion, Amer­i­can tech­nol­o­gy back then was sig­nif­i­cant­ly ahead of the Rus­sian one. The amounts of con­vert­ed ura­ni­um are mas­sive - more than 500 ton­nes. Thus Rus­sian ura­ni­um turns into fuel for US nucle­ar pow­er plants. At present, this fuel is used to pro­duce 10% of the elec­tri­cal pow­er in the US. This is more than the ener­gy pro­duced from renew­a­ble sour­ces, such as sun, wind and water, there. This idyll, how­e­ver, is com­ing to its end. First, the US-Rus­sia agree­ment for Rus­sian war­heads con­ver­sion expires next year and Rus­sia is high­ly unlike­ly to extend it. More­over, Rus­sians now have good tech­nol­o­gy for that pur­pose and will prob­a­bly want to leave their ura­ni­um for them­selves. And sec­ond, if the agree­ment is extend­ed, the amounts of war­heads sub­ject to dis­man­tling will soon be exhaust­ed any­way as the agreed lim­its are reached. Glob­al mar­kets have already start­ed sus­pect­ing what is going to hap­pen with the expir­ing US-Rus­sia agree­mentth for war­head ura­ni­um. And not only with it. Indeed, ura­ni­um oxide pri­ces have gone wild sur­ging to almost $70/lb (1lb is 454 gr.) in Jan­u­ary this year from $40/lb in Sep­tem­ber 2011. Such a 70% ral­ly in ura­ni­um price over just 3-4- mons is not sus­tain­a­ble and even a cer­tain edg­ing down can be expect­ed. Still, the trend is clear - ura­ni­um dearth is loom­ing, as well as dearth of oth­er stra­te­gic nat­u­ral resour­ces. We have repeat­ed­ly stat­ed this but let us under­score it again. The glob­al cri­sis is most of all a resource cri­sis. It is finan­cial inso­far as it has became clear that the sys­tem allow­ing some peo­ple to print mon­ey while oth­ers work and bring them oil and oth­er goods will not last for good. The antic­i­pat­ed ura­ni­um short­age in the com­ing dec­ade is tru­ly strik­ing and is esti­mat­ed at 500m lb! One of the rea­sons is the fast devel­op­ing econ­o­mies of Chi­na and India, along with oth­er coun­tries like Bra­zil and Tur­key. It is where the bulk of the 147 reac­tors expect­ed to become oper­a­tion­al in these 10 years will be locat­ed. A major con­sum­er of ura­ni­um, the US cur­rent­ly has a demand for 60m lb a year but pro­du­ces only 3m lb. Still, this is the way things are at present. And what will hap­pen aft­er the US Nucle­ar Reg­u­la­to­ry Com­mis­sion reviews and poten­tial­ly approves new nucle­ar reac­tor pro­pos­als? They are 26 or so. And more are in the pipe­line. The sit­u­a­tion in India is even more dra­mat­ic - an increase in the share of nucle­ar ener­gy in elec­tric­i­ty pro­duc­tion is expect­ed from 2.5% at present to 25%. In oth­er words, India will need 10 times as much ura­ni­um as it does now if the far-reach­ing plan is put to prac­tice. Chi­na has more hum­ble aspi­ra­tions and is gear­ing to raise the share of nucle­ar facil­i­ties in elec­tric­i­ty pro­duc­tion only ...three times. And Chi­na, much like the US, does not have suf­fi­cient domes­tic sup­ply. We can con­tin­ue with sta­tis­tics, but things are evi­dent any­way. A war is around the cor­ner. In the best-case sce­nar­io, this will be a price war over ura­ni­um and in par­tic­u­lar ura­ni­um oxide. Pri­ces in the order of $100 or even $200/lb no longer seem far-fetched. Price lev­els of $500-$1000-$2000/lb have even been men­tioned and this will have its swift and dras­tic impli­ca­tions. Still, if a reac­tor costs $4bn, why not pay $1000/lb of ura­ni­um? Or else, the 4-bil­lion invest­ment will go down the drain. Anoth­er explod­ing glob­al mar­ket is the one for rare earth ele­ments with hard-to-pro­nounce Lat­in names such as Neo­dym­i­um, Ceri­um, Lan­tha­num, Gal­li­um, Gado­lin­i­um, Thu­li­um… If we have a look at Men­de­leev's peri­od­ic table, they are squeezed some­where at the bot­tom. But then, all the elec­tron­ics around us, all com­put­ers, fibre optics, all sat­el­lites and in gen­er­al every­thing under­ly­ing our high-tech civ­il­i­za­tion would be utter­ly impos­si­ble but for these exot­ic hard-to-extract ele­ments. The price of each of them has dou­bled and tri­pled in a year alone. And the pri­ces of some of them have soared six­fold in the same peri­od. Com­pared with rare earth ele­ments, gold and plat­i­num are like a tame kit­ten. It nat­u­ral­ly eats and swells but at a rate of only up to 40% a year. And what about the lith­i­um under­ly­ing the idea of elec­tric vehi­cles stag­ing a mass entrance into our dai­ly life and econ­o­my if and when oil is exhaust­ed? But it is in rare ele­ments where the secret of future skir­mish­es over resour­ces lies. Because across the world, they are real­ly hard to extract but Chi­na holds 97% of their glob­al pro­duc­tion! No mis­take, Chi­na pro­du­ces 33 times as much rare met­als as the rest of the world. This may as well be changed some day as cur­rent­ly huge efforts and mon­ey are put into look­ing for rare met­als around the globe. Hypo­thet­i­cal­ly, only a third of the res­erves is in Chi­na with the oth­er two thirds lying some­where else. Too bad it is any­one's guess where, although Cana­da, South Afri­ca and some Afri­can coun­tries are con­sid­ered prom­is­ing in this regard. Still, for the time being this is how things are: Chi­na has almost every­thing and the rest of the world hard­ly any­thing. Does any­one have any doubts why Chi­na has the ambi­tion to become the top dog? Of course, the world is by no means tread­ing water in one oth­er respect: sub­sti­tute tech­nol­o­gies are sought for that would not be so crit­i­cal­ly depend­ent on rare earth ele­ments, yet, more in the long rath­er than short run. By the way, why are we dis­cuss­ing ura­ni­um pri­ces along with all oth­er sorts of pri­ces in US dol­lars? The answer is clear: because the dol­lar is the glob­al reserve cur­ren­cy. The rea­son for this, though, is more com­pli­cat­ed. True, the US is the larg­est econ­o­my for the time being. But it is also among the mosft indebt­ed coun­tries in the world. And its debt is increas­ing­ly sur­ging. Still, this is not the most impor­tant. The most impor­tant thing is that the US has the most pow­er­ful, most mobile and one of the most effect­ive armies in the world. Lit­tle like­ly is it for some­one to reject the US dol­lar as a reserve cur­ren­cy while the 82nd Air­borne Divi­sion of the US Army, based at Fort Bragg North Car­o­li­na, is the holy ter­ror it is at the moment. And there is much more to it than the 82nd Divi­sion. So the time bomb of ura­ni­um and rare earth ele­ments dearth is tick­ing. And lit­tle idea do we have of the time it is set for. Or wheth­er, when it final­ly goes off, some­body might remem­ber the first mas­sive appli­ca­tion of ura­ni­um, which turned thou­sands into ash­es some 67 years ago. And be temp­ted to use it again. For 67 years now, we have been show­ing rea­son and sur­viv­ing. Let us hope fierce defi­cien­cy of nat­u­ral resour­ces, food and water that is loom­ing will not take it away from us.

### 1NC - Renewables Bad

#### Renewables are a more unreliable source of energy than the grid.

Smith 13 – [(Rebecca Smith, National Energy Reporter for the Wall Street Journal.) “California Girds for Electricity Woes: Increased Reliance on Wind, Solar Power Means Power Production Fluctuates.” Feb 26. 2013. <https://www.wsj.com/articles/SB10001424127887323699704578328581251122150?mod=googlenews_wsj> ] SJDI

SAN FRANCISCO—California is weighing how to avoid a looming electricity crisis that could be brought on by its growing reliance on wind and solar power. Regulators and energy companies met Tuesday, hoping to hash out a solution to the peculiar stresses placed on the state's network by sharp increases in wind and solar energy. Power production from renewable sources fluctuates wildly, depending on wind speeds and weather. California has encouraged growth in solar and wind power to help reduce greenhouse-gas emissions. At the same time, the state is running low on conventional plants, such as those fueled by natural gas, that can adjust their output to keep the electric system stable. The amount of electricity being put on the grid must precisely match the amount being consumed or voltages sag, which could result in rolling blackouts. At Tuesday's meeting, experts cautioned that the state could begin seeing problems with reliability as soon as 2015. California isn't the only state having trouble coping with a growing share of renewables. Texas also needs more resources, such as gas-fired power plants, that can adjust output in response to unpredictable production from wind farms. Renewable power has seen a boom in both states. On Feb. 9, wind farms in Texas set a record for output, providing nearly 28% of the state's supply for the day. Production hasn't hit that level yet in California, but the state's goal is to get one-third of its electricity from renewable resources by 2020. "I think we're going to end up closer to 40%," said Robert Weisenmiller, chairman of the California Energy Commission, the state's policy and planning agency for electricity. A decade ago, California was hit by an electricity crisis marked by price surges and rolling blackouts, stemming from market manipulation and tightening electricity supplies in a newly deregulated market. To prevent a recurrence, state regulators passed rules requiring utilities to line up enough energy to meet even high power demand, with a special emphasis on in-state renewable resources. "California has been well served by the procurement process since the crisis," said Steve Berberich, chief executive of the California Independent System Operator, which runs the state's grid. "The problem is we have a system now that needs flexibility, not capacity." Changes in California's market have attracted lots of new generation; the state expects to have 44% more generating capacity than it needs next year. Grid officials say they expect the surplus to fall to 20% by 2022, though it will remain high for about a decade. However, the surplus generating capacity doesn't guarantee steady power flow. Even though California has a lot of plants, it doesn't have the right mix: Many of the solar and wind sources added in recent years have actually made the system more fragile, because they provide power intermittently. Electricity systems need some surplus, so they can cover unexpected generator outages or transmission-line failures, but having too much can depress the prices generators can charge for electricity. In part because of low power prices, many gas-fired generation units aren't profitable enough to justify refurbishments required by pending federal regulations under the Clean Water Act. That means they are likely to be shut by 2020, adding to the state's power woes. By July, state officials hope to have a plan in place addressing the problem. Turf issues among state and federal regulators could complicate the process. Michael Peevey, president of the California Public Utilities Commission, which regulates utilities, said action is clearly needed, but he isn't sure whether the market needs "small adjustments or a major overhaul." Utility executives are calling for immediate action, pointing to the risk of rolling blackouts. "We see the issue hitting as soon as 2013, 2014, 2015," said Todd Strauss, the head of planning and analysis for PG&E Corp., a big utility serving Northern California, who attended Tuesday's meeting. "If we thought it was far out, we wouldn't be here."

#### Grid reliability depends on dispatchable generation from nonrenewable energy—minor shifts in the supply-demand balance cascade into blackouts

Fisher 15—IER Economist (Travis, “ASSESSING EMERGING POLICY THREATS TO THE U.S. POWER GRID,” <http://instituteforenergyresearch.org/wp-content/uploads/2015/02/Threats-to-U.S.-Power-Grid.compressed.pdf>, dml)

Electric reliability in the U.S. is excellent overall, which is a testament to the men and women working in power plants and control rooms across the country. Aside from two major blackouts (1965 and 2003), electricity consumers in the U.S. have not been subjected to persistent, region-wide blackouts —unlike less developed nations 8 with less reliable electric systems. 9 Given the positive track record of America’s power grid, it is no surprise that some experts characterize the grid as “underrated.” According to a 2014 report 10 by the North American Electric Reliability Corporation (NERC)—which is the U.S.’s federally designated electric reliability organization—the grid remains stable: The availability of the bulk transmission system remained high from 2008 to 2013. The [alternating current] transmission circuit availability remained above 97 percent, and transmission transformer availability was above 98 percent for the 2010 to 2013 period (unavailability includes both forced and planned outages). High transmission availability demonstrates that the [bulk power system] is able to perform reliably over a variety of operating conditions.11 This report focuses on the power plants and high-voltage transmission lines that make up the bulk power grid. Even with a top- 12 notch bulk power grid covering the U.S., consumers will experience outages on local distribution lines from time to time. This is 13 due largely to the fact that many of our neighborhood power lines are on overhead poles and thus vulnerable to damage from storms, ice, falling trees, etc. The alternative —burying distribution lines underground—is impractical and would be incredibly expensive. For the purposes of this report, 14 statements about grid reliability refer to the bulk power grid. The U.S. power grid actually consists of three region-wide interconnections: the Eastern Interconnection, the Western Interconnection, and the Texas Interconnection. When we refer to the American power grid, we refer to these interconnections collectively, with a special focus on their generation and transmission infrastructure. To keep these interconnections up and running (and to keep the lights on), electricity generators must meet the total demand on the system at all times and do so within tight margins of error. Electricity is a unique good in that it must be produced at the moment it is consumed, and grid supply must match demand during every second of every day. As people demand higher or lower amounts of power throughout the day (shown below), reliable generators adjust their output accordingly. “Baseload” plants run consistently at nearly all hours, whereas other plants come online to satisfy higher levels of demand or “load.” Having a reliable grid means matching supply to demand in real time, all the time. The technology that makes large electricity grids possible in the first place—the alternating current (AC) system—presents some operating challenges. For example, in an AC system, all generators and devices running on the grid are synchronized to the same frequency (in the U.S., grid current alternates at 60 cycles per second or 60 hertz). If demand outstrips supply (or vice versa), the whole system experiences a dangerous drag (or boost) in frequency that can cause blackouts across a large area. Diverging from 60 hertz is dangerous for some of the equipment on the grid, including generators, so power plants will shut themselves off when the frequency changes too much. For example, in the 2003 blackout that spread across the Eastern U.S., grid operators were slow to realize that a generator had failed and transmission lines had tripped offline, causing other transmission lines to overload, which, in turn, caused other generators to trip offline, further losing power and exacerbating the frequency collapse. The cascading effect continued until much of the Eastern U.S. and Canada suffered a major blackout. The 2003 blackout 15 demonstrated that, even in good conditions, the power grid is susceptible to system-wide disruptions. To understand how fragile the balance of the grid truly is—and how well operators manage the grid—look no further than the second-by-second frequency fluctuations across the three interconnections. Below is a screen capture of the real-time, color-coded frequency map maintained by the Power Information Technology Laboratory at the University of Tennessee.16 Blue areas are experiencing lower grid frequency (less than 60 hertz), indicating that overall electricity supply is lagging demand in that moment, and red areas are the opposite. Green areas indicate that the system is balanced at 60 hertz. These conditions change in real time, cycling second-by-second through the rainbow of colors. As total demand on the system changes (as lights, electric motors, air conditioners, computers, etc. turn on and off), hundreds of generators respond by increasing or decreasing their power output at a moment’s notice. The blues and reds reflect the fact that generators require some reaction time to respond to changing power demand. Minor deviations in frequency are normal—extreme deviations or “frequency excursions” can cause serious reliability problems.17 Grid planners and operators go to great lengths to make sure the grid’s delicate supply/demand balance is stable, not just minute to minute, but also five and ten years into the future. In those long-range plans, having enough reliable supply to meet demand in many different situations is key. Planners pay special attention to peak demand forecasts, ensuring there will always be enough reliable generation to match demand at its highest. The buffer or cushion above peak demand provided by reliable sources of electricity is called the “reserve margin,” and it is absolutely crucial in grid planning. Planners also take into account the potential loss of equipment such as transmission lines, substations, generators, and so on. That is why this report stresses the importance of having enough reliable generators up and running. The U.S. Energy Information Administration (EIA) is careful to distinguish between “dispatchable” generation—power plants that can be controlled, i.e., turned on and off, ramped up and down—and nondispatchable generation. In the U.S., 18 power plants fueled by coal, natural gas, and nuclear power are the largest sources of dispatchable generation. Nondispatchable sources include wind, solar, and hydroelectric power. This distinction is 19 important because dispatchable generation is absolutely essential to grid reliability. According to the most recent data from the EIA, the U.S. is home to an amazing 875 gigawatts (GW) of dispatchable generation from coal, natural gas, petroleum, and nuclear power. That is more installed 20 capacity than all of Central and South America, Eurasia, and the Middle East combined.21

#### Causes chemical explosions - functional nuke war.

Yulia Latynina 03. Journalist for Novaya Gazeta. World Press Review. Vol. 50, No. 11

The scariest thing about the cascading power outages was not spoiled groceries in the fridge, or elevators getting stuck, or even, however cynical it may sound, sick patients left to their own devices without electricity-powered medical equipment. The scariest thing of all was chemical plants and refineries with 24-hour operations, which, if interrupted, can result in consequences even more disastrous and on a larger scale than those of an atomic bomb explosion. So it is safe to say that Americans got lucky this time. Several hours after the disaster, no one could know for certain whether the power outage was caused by an accident or someone’s evil design. In fact, the disaster on the East Coast illustrates just one thing: A modern city is in itself a bomb, regardless of whether someone sets off the detonator intentionally or by accident. As I recall, when I was writing my book Industrial Zone, in which business deals were bound to lead to a massive industrial catastrophe, at some point in time I was considering making a cascading power outage the cause of a catastrophe. Back then, I was amazed and shocked at the swiftness of the process. Shutting down at least one electric power plant is enough to cause a drop in power output throughout the entire power grid. This is followed by an automatic shutdown of nuclear power plants, a further catastrophic drop in power, and finally a cascading outage of the entire grid system. To start with, the electric power plant may burn out because of just about anything. In Ekibastuz [Kazakhstan] under the Soviet regime, a large hydroelectric power station was burned to the ground because of the negligence of one extremely smart worker, who used a wrench to unscrew the cap from a pressurized oil vessel. A stream of oil shot up to the ceiling; the worker got scared and dropped the wrench, which hit against the steel floor and created a spark that set the stream of oil on fire. Then the lights went off. Which brings us back to our main thesis. In order to destroy a modern city, one does not need to have nuclear weapons, because the modern city is in itself a weapon. The city infrastructure is an infrastructure with dual purpose. Why should terrorists need chemical weapons if their enemies already have chemical plants? Why should terrorists need nuclear weapons if their enemies already have skyscrapers and airplanes with tanks full of fuel, which can be hijacked with the help of a penknife? Why would they need sophisticated military technologies and stolen explosives if the KamAZ truck that blew up the hospital in Mozdok was carrying a load of, let us say, fertilizer? So-called dictatorship regimes and terrorists themselves have long since figured that out. That is exactly why there were no nuclear or bacteriological weapons in Iraq. Why not? A bomb planted on an airplane would kill dozens fewer people than a failure of the air traffic control system of a large airport. Sept. 11 taught the world that the infrastructure of the modern civilization could be as lethal as the weapons themselves.

### 1NC - Case