# Fairmont Prep KT --- NDCAs --- Neg vs. Campbell Hall

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**Contention 1 is Accidents**

**Trump is decking NRC independence allowing companies to skip steps causing Fukushima 2.0**

**Macfarlane 25** [Allison Macfarlane, Professor and director of the School of Public Policy and Global Affairs at the University of British Columbia, 2-21-2025, Trump just assaulted the independence of the nuclear regulator. What could go wrong?, Bulletin of the Atomic Scientists, https://thebulletin.org/2025/02/trump-just-assaulted-the-independence-of-the-nuclear-regulator-what-could-go-wrong/, GZR]

**President Trump, through** his recent Executive Order, has **attacked independent regulatory agencies in the US government**. This order gives the Office of Management and Budget power over the regulatory process of until-now independent agencies. **These regulatory agencies include the Federal Elections Commission, the Federal Trade Commission, the Securities and Exchange Commission, the Federal Energy Regulatory Commission**—and my former agency, the Nuclear Regulatory Commission, which I chaired between July 2012 and December 2014.

**An independent regulator is free from industry and political influence**. **Trump’s executive order flies in the face of this basic principle by requiring the Office of Management and Budget to** “**review**” **these independent regulatory agencies’ obligations** “for consistency with the President’s policies and priorities.” **This essentially means subordinating regulators to the president**.

In the past, the president and Congress, which has oversight capacity on the regulators, stayed at arm’s length from the regulators’ decisions. This was meant to keep them isolated, ensuring their necessary independence from any outside interference. Trump’s executive order implies there are no longer independent regulators in the United States.

Independent regulators should not only be free from government and industry meddling; they also need to be adequately staffed with competent experts and have the budget to operate efficiently. They also need to be able to shut down facilities such as nuclear power plants that are not operating safely, according to regulations. To do this, they need government to support their independent decisions and rulemaking.

**Independence matters**. When I was chairman, I traveled the world talking about the importance of an independent regulator to countries where nuclear regulators exhibited a lack of independence and were subject to excessive industry and political influence. It is ironic that the US Nuclear Regulatory Commission—often called the “Gold Standard” in nuclear regulation—has now been captured by the Trump administration and lost its independence. So much for the Gold Standard; the Canadian, the French, or the Finnish nuclear regulator will have to take on that mantle now.

**To understand what is at stake, one needs to look no further than the Fukushima accident** in March 2011, **which showed the world how a country’s economic security is vulnerable to a captured regulator**. After a magnitude 9.0 earthquake followed by a massive tsunami, the Fukushima Daiichi nuclear power plant, with its six reactors on Japan’s east coast, lost offsite power. The tsunami flooded their backup diesel generators, and the plant fell into the station blackout, leading to the complete loss of all power on site.

With no power to operate pumps to get cooling water into the reactors’ cores or into spent fuel storage pools, three reactor cores melted down—the first within hours of loss of power—with a concomitant release of large amounts of radionuclides due to containment breaches from hydrogen explosions.

Firefighters desperately tried to get water into the spent fuel pool of Unit 4 to ensure that pool water did not boil off since the pumps were no longer working. Should the spent fuel rods have become uncovered and no longer cooled, the fuel’s temperature would rapidly increase, and the fuel rods would melt, causing the release of even larger amounts of radiation material into the atmosphere threatening the Tokyo metropolitan area. Fortunately, the emergency workers got water to the pool within a few days of the fuel being uncovered.

Nonetheless, 160,000 people evacuated from the area near the reactors and along the corridor of radiation contamination to the northwest of the Fukushima Daiichi plant. Overnight, the agricultural and fishing industries near Fukushima were devastated. **Within a year after the accident, all 54 reactors in Japan were shut down**—**a loss of about a third of the country’s electricity supply**. More expensive diesel plants had to be set up to compensate for some of the missing power. The direct economic costs of the accident were estimated to be on the order of $200 billion—and even that number excluded the costs of replacing the lost power and multiple reactor shutdowns due to the reassessment of seismic hazards. **Nearly 14 years later, only 13 nuclear reactors have been turned back on, and 21 have been permanently shut down**. (The other 20 reactors are waiting for regulatory and prefecture approval.)

An independent investigation by the Diet (Japan’s house of parliament) into the cause of the Fukushima accident concluded unequivocally that: “**The TEPCO Fukushima Nuclear Power Plant accident was the result of collusion between the government, the regulators and TEPCO, and the lack of governance by said parties**. They effectively betrayed the nation’s right to be safe from nuclear accidents.” Japan’s government and nuclear industry continue to struggle with the clean-up of the Fukushima site, and it purposely began in 2023 to release still-contaminated water into the Pacific Ocean. Nearby countries responded by banning fishing products from the region.

As the industry often says, **a nuclear accident anywhere is a nuclear accident everywhere**. After the Fukushima accident, the US nuclear industry spent over $47 billion in safety upgrades to respond to lessons learned from the Fukushima accident. **These included the realization that not only more than one reactor could fail at a single power plant**, but also that backup generators needed to be in safe locations, not subject to flooding and other forms of failure; that generic fittings for pumps and equipment were needed so that any nearby equipment could be connected during an accident; that containments should be able to be vented remotely; that natural events such as earthquakes and flooding could be underestimated in the original reactor designs; and that spent fuel pools needed to provide real-time data in accident conditions. The upgrades that resulted from these lessons have greatly increased the safety of reactors in the United States and elsewhere. They were required because each of these upgrades was deemed necessary to address the lessons learned by the independent regulator. On its own, the industry might not have undertaken any of these measures.

What could go wrong? **Several possible outcomes could occur because of Trump’s new executive order assaulting the independence of the Nuclear Regulatory Commission** (NRC).

**Proponents of small modular reactors**, for instance, **have pressured Congress and the executive branch to reduce regulation** and hurry the NRC’s approval of their novel—and **unproven—reactor designs**. **They wish their reactors could be exempted from the requirements that all other designs before them have had to meet**: **detailed evidence that the reactors will operate safely** under accident conditions. Instead, **these proponents**—some **with no experience in operating reactors**—**want the NRC to trust their simplistic computer models** of reactor performance **and essentially give them a free pass to deploy their untested technology** across the country.

An accident with a new small modular reactor (SMR) would perhaps not make such a big mess: After all, the source term of radiation would be smaller than with large reactors, like those currently operating in the United States. But the accident in Japan demonstrated that countries should expect that more than one reactor at a given site can fail at the same time, and these multiple failures can create even more dire circumstances, impeding the authorities’ ability to respond to such a complex radiological emergency. At Fukushima, the first explosion at Unit 1 generated radioactive debris that prevented emergency responders from getting close to other damaged reactors nearby. Since designers plan to deploy multiple SMR units to individual sites, such an accidental scenario appears feasible with SMRs.

Since its creation in 1975, the Nuclear Regulatory Commission has had an excellent and essential mission: to ensure the safety and security of nuclear facilities and nuclear materials so that humans and the environment are not harmed. **Trump’s incursion means the agency will no longer be able to fully follow through with this mission independently**—and Americans will be more at risk as a result. **If any US reactor suffers a major accident, the entire industry will be impacted**—and perhaps **its 94 reactors in operation will even be temporarily shut down**. Can the industry and the American people afford the cost of losing the independence of the nuclear regulator?

**AND Energy Secretary Chris Wright has a history of neglecting safety.**

**Accountable 25** [Accountable US (Accountable.US (A.US) is a nonpartisan, 501(c)3 organization that shines a light on special interests that too often wield unchecked power and influence in Washington and beyond.)  February 4, 2025, Watchdog: Senate Confirms Oil Man & Serial Workplace Safety Violator Chris Wright as Trump’s Energy Secretary", https://accountable.us/watchdog-senate-confirms-oil-man-serial-workplace-safety-violator-chris-wright-as-trumps-energy-secretary/, GZR]

WASHINGTON, D.C. – Following the Republican-led Senate’s vote to confirm Chris Wright as **U.S. Energy Secretary**, Accountable.US Executive Director Tony Carrk released the following statement: “The choice of Chris Wright to run the powerful Energy Department was based on what’s best for the bottom line of Donald Trump’s big oil megadonors, not everyday consumers and workers. With his Project 2025 ties and financial stakes in the big oil and nuclear industry, Wright is just the wealthy insider Trump needs to carry out his plans for padding profits of energy special interests – even if it means higher prices at the pump. And with Wright’s company’s history of violating workplace safety standards and anti-discrimination laws, he’s now in the driver’s seat to sweep such problems under the rug for his industry friends.” BACKGROUND: Conflicts Of Interest With Energy Companies **Chris Wright is a member of the board of Oklo nuclear company and has business before the Department of Energy. Oklo’s application before the Nuclear Regulatory Commission was previously denied due to a lack of information about accidents and safety. Chris Wright claims he will step down from the board, but questions remain about whether he will fairly regulate and ensure accountability from energy industries** when he has spent so much of his career working for and serving on the boards of oil and gas and nuclear energy companies. Project 2025 Wright has been on the board of the Western Energy Alliance, an oil industry trade group that authored many of Project 2025’s oil and gas provisions. Chris Wright has been a member of the board of Western Energy Alliance (WEA) WEA is an oil industry trade group. WEA’s president authored the oil and gas provisions of Project 2025. Project 2025 would eliminate “key offices at the DOE, including the Office of Energy Efficiency and Renewable Energy, the Office of Clean Energy Demonstrations, the Office of State and Community Energy Programs, the Office of Grid Deployment, and the Loan Programs Office.” Workplace Safety and Racial Harassment **Questions remain whether Wright will look the other way when energy companies violate safety standards** and anti-discrimination laws, considering his company, Liberty Energy, was frequently fined over workplace safety standards and paid $265,000 to settle lawsuits from black and Hispanic employees who faced hostile work environment and were called slurs. **Under Chris Wright’s leadership, Liberty Energy has faced at least three separate penalties for workplace and safety violations** since 2023. Liberty Energy, in 2024, paid $265,000 to settle an EEOC discrimination lawsuit after black and Hispanic field mechanics faced racial harassment.

**Affirming gives Wright the keys.**

**Lynch 25** [James Lynch, news writer for National Review & B.A. in Political Science from Notre Dame, 2-7-2025, Chris Wright Makes Unleashing Nuclear Power Priority for American Energy Abundance, National Review, https://www.nationalreview.com/news/chris-wright-makes-unleashing-nuclear-power-priority-for-american-energy-abundance/, Willie T.]

In a letter to sent Thursday, American Nuclear Society CEO Craig Piercy suggested that Wright focus securing congressional appropriations to fulfill his promises about advancing the nuclear power industry and supporting innovative reactors.

“Many in the industry think additional government support will be needed to reach nth-of-a-kind nuclear plant construction **costs**, while others believe rising electricity demand alone will take care of that in time,” the letter reads.

“Either way, as secretary of energy, you will **need appropriations** to engineer any kind of nuclear ‘win.’ You will spend more time than you think **preparing budgets**, arguing with the Office of Management and Budget over what’s included, and then defending said budgets on Capitol Hill. Don’t let the bean counters steal from you!”

**Accidents cause BioD Loss.**

**Olsson 11** [Henrik von Wehrden, Joern Fischer, Patric Brandt, Viktoria Wagner, Klaus Kümmerer, Tobias Kuemmerle, Anne Nagel, Oliver Olsson, Patrick Hostert, 12-28-2011, Chair of Material Resources, Institute of Environmental Chemistry, Leuphana University Lüneburg, Scharnhorststr, 1, 21335 Lüneburg, Germany "Consequences of nuclear accidents for biodiversity and ecosystem services," Society for Conservation Biology, https://conbio.onlinelibrary.wiley.com/doi/full/10.1111/j.1755-263X.2011.00217.x, DOA: 3/30/2025] JZ

To characterize and quantify the potential **consequences of nuclear accidents for biodiversity and ecosystem services, we reviewed 521 published studies investigating the impacts of the Chernobyl disaster**, which, until now, has been the only available baseline event to empirically judge the consequences of catastrophic nuclear accidents (see online Supplementary Material for Methods). Specifically, our study aimed to (1) provide a summary of the spatial and temporal patterns of the documented effects of the Chernobyl disaster on a wide range of organisms, and (2) discuss the implications of nuclear accidents for the provision of ecosystem services, again, drawing on documented evidence in the aftermath of the Chernobyl accident. We conclude with four tangible take-home messages, intended to be **directly relevant to debates about the future of nuclear energy.**

Consequences or impacts to species

 Spatially, the documented effects of the Chernobyl disaster broadly follow known fallout patterns (Figure 1). However, variance in radiation levels is extremely high, not only between but also within sites. At a given study location, radiation levels have been shown to vary from 44,300 to 181,100 Becquerel per kilogram (Bq/kg) for mushrooms in southern Sweden (Mascanzoni 2009), from 3,000 to 50,000 Bq/kg for bats in Chernobyl (Gashchak et al. 2010), and from 176 to 587,000 Bq/kg for higher plants in southwestern Russia (Fogh & Andersson 2001); the latter equals almost a hundred times the threshold (600 Bq/kg) set by the European Union for Food that is deemed safe for consumption. High variance in radiation levels means that fallout maps based on extrapolations, models, and climate forecasts are not sufficient to evaluate radiation levels on a fine scale—field data are critically important for this purpose. Furthermore, radiation levels measured in the field and predicted fallout patterns based on meteorological data sometimes do not match (McAulay & Moran 1989), because additional factors, such as dry deposition, are not accounted for by climatic predictors (Arvelle et al. 1990). In addition, **some regions and types of ecosystems are systematically underrepresented in studies to date. For example, existing data is sparse for marine and aquatic ecosystems** (Figure 1).

Although many measurements were undertaken in the aftermath of the Chernobyl accident worldwide, existing **studies are greatly** **biased toward few taxonomic groups** (Figures 2 and 3). Most studies have focused on topsoil measurements and accumulation in the plant layer, which is where radiation can be most easily measured. **Despite this bias, it is clear that for most well-studied groups, greatly elevated radiation levels can occur up to thousands of kilometers away from the disaster site.** For example, recorded radiation levels in mushrooms were up to 13,000 Bq/kg in Denmark in 1991 (Strandberg 2003) and up to 25690 Bq/kg in Norway in 1994 (Amundsen et al. 1996).

**The consequences of elevated radiation levels in many parts of a given ecosystem remain poorly understood, but are likely substantial.** For example, rats showed changes in sleep behavior after drinking water poisoned with “only” 400 Bq/l (Lestaevel et al. 2006), and onions have shown a significantly elevated rate of chromosomal aberrations at levels as low as 575 Bq/kg (Kovalchuk et al. 1998).

Although numerous studies have investigated physiological and morphological alterations in the vicinity of the Chernobyl accident site, hardly any studies have quantified the possibility of such alterations at larger distances. This could be a major shortcoming, because **radiation levels are known to be greatly increased in some organisms even at large distances from the accident site** (see earlier)—physiological or morphological alterations, therefore, are plausible, at least in isolated instances. Where such alterations occur, their long-term consequences on the ecosystem as a whole can be potentially profound (Kummerer & Hofmeister 2009).

The legacies of the environmental consequences of the Chernobyl accident are still prevalent today, 25 years after the event. Although many studies have shown a peak in radiation immediately after the catastrophe and then a continuous decline, **radiation levels measured throughout the ecosystem are still highly elevated.** For example, radiation levels in mosses (Marovic et al. 2008), soil (Copplestone et al. 2000), and glaciers (Tieber et al. 2009) have remained greatly elevated in several locations around Europe. The long-lasting legacy of the Chernobyl accident was also illustrated by intense wildfires in the Chernobyl region in 2010, which caused a renewed relocation of radioactive material to adjacent regions (Yoschenko et al. 2006). The persistence of high radiation levels can be attributed partly to the half-life rates of the chemical elements involved (e.g., 31 years for Caesium-137; 29 years for Strontium-90; and 8 days for Iodine-131).

In addition to elevated radiation levels, **morphological and physiological changes are by definition long-term in nature, and can even be permanent** if **genetic alterations occur**. For example, a range of bird species now have developed significantly smaller brains inside the core zone around the Chernobyl reactor site compared to individuals of the same species outside this zone (Møller et al. 2011). The consequences of such changes on long-term evolutionary trajectories remain largely unknown.

**Lethal mutations following exposure to nuclear fallout have been observed in various plant** (Abramov et al. 1992; Kovalchuk et al. 2003) and animal species (Shevchenko, et al. 1992; Zainullin et al. 1992), yet research has mainly been conducted within the Chernobyl region. Morphological changes have also been observed in a wide array of species, including plants (Tulik & Rusin 2005), damselflies (Muzlanov 2002), diptera (Williams et al. 2001), and mice (Oleksyk et al. 2004). In addition, some studies have documented.

**Physiological effects, such as changes in the leukocyte level (Camplani et al. 1999) and reduced** **reproduction rates** (Møller et al. 2008). **Changes in genetic structure** have been recorded in various organisms, including fish (Sugg et al. 1996) and frogs (Vinogradov & Chubinishvili 1999). More broadly, elevated radiation can **negatively affect the abundance of entire species groups**, such as insects and spiders (Møller & Mousseau 2009a), raptors (Møller & Mousseau 2009b), or small mammals (Ryabokon & Goncharova 2006).

How low levels of radiation affect different species is poorly understood; studies have suggested that low levels of radiation can have a **persistent influence on mutation rates** in Drosophila (Zainullin et al. 1992), and can weaken **immune (Malyzhev 1993) and reproductive systems (Serkiz 2003) of small mammals;** but again, most studies have been restricted to the Chernobyl accident area. A more obvious measure of permanent change is widespread death of organisms living in the direct vicinity of the disaster site (Figures 1 and 2).

Food web and ecosystem impacts

In addition to effects on individual species, **biological** **accumulation through the food web can negatively** **affect some species**—particularly those at higher trophic levels and those depending on strongly affected food items. Bioaccumulation poses a risk to affected species because it **exacerbates exposure to elevated radiation levels, and hence, leads to increased chances of physiological or morphological alterations.** For example, can radiation levels in top predators remain elevated for a long time even when species at lower trophic levels show negligible radiation levels, as demonstrated for the Trench (Tinca tinca) in the Kiev Reservoir (Koulikov 1996).

**Extinction!**

**Torres 16** [Phil Torres, biologist, science communicator, 2-10-2016, "Biodiversity Loss and the Doomsday Clock: An Invisible Disaster Almost No One is Talking About," Common Dreams, https://www.commondreams.org/views/2016/02/10/biodiversity-loss-and-doomsday-clock-invisible-disaster-almost-no-one-talking-about, DOA: 3/30/2025] JZ

But there's another global catastrophe that the Bulletin neglected to consider -- **a catastrophe that will almost certainly have conflict** multiplying **effects no less than climate change. I'm referring here to biodiversity loss** -- i.e., the reduction in the total number of species, or in their population sizes, over time. The fact is that in the past few centuries, the loss of biological diversity around the world has accelerated at an incredible pace. Consider the findings of a 2015 paper published in Science Advances. According to this study, we've only recently entered the **early stages of the sixth mass extinction event in life's entire 3.5 billion year history.** The previous mass extinctions are known as the "Big Five," and the last one wiped out the dinosaurs some 65 million years ago. Unlike these past tragedies, though, the current mass extinction -- called the "Holocene extinction event" -- is almost entirely the result of a one species in particular, namely Homo sapiens (which ironically means the "wise man").

"If the environment implodes under the weight of civilization, then civilization itself is doomed."

But **biodiversity loss isn't limited to species** extinctions. As the founder of the Long Now Institute, Stewart Brand, suggests in an article for Aeon, one could argue that a more pressing issue is the reduction in population sizes around the globe. For example, the 3rd Global Biodiversity Report (GBO-3), published in 2010, found that the total abundance of vertebrates -- a category that includes mammals, birds, reptiles, sharks, rays, and amphibians -- living in the tropics declined by a whopping 59% between 1970 and 2006. In other words, the population size of creatures with a spine more than halved in only 36 years. The study also found that farmland birds in Europe have declined by 50% since 1980, birds in North America have declined by 40% between 1968 and 2003, and nearly 25% of all plant species are currently "threatened with extinction." The latter statistic is especially worth noting because many people suffer from what's called "plant blindness," according to which we fail "to recognize the importance of plants in the biosphere and in human affairs." Indeed, plants form the very bottom of the food chains upon which human life ultimately depends.

Even more disturbing is the claim that amphibians "face the greatest risk" of extinction, with "42% of all amphibian species ... declining in population," as the GBO-3 reports. Consistent with this, a more recent study from 2013 that focused on North America found that "frogs, toads and salamanders in the United States are disappearing from their habitats ... at an alarming and rapid rate," and are projected to "disappear from half of the habitats they currently occupy in about 20 years." The decline of amphibian populations is ominous because amphibians are "ecological indicators" that are more sensitive to environmental changes than other organisms. As such they are the "canaries in the coal mine" that reflect the overall health of the ecosystems in which they reside. **When they start to disappear,** biggerproblems are sure to follow.

Yet another comprehensive survey of the biosphere comes from the Living Planet Report -- and its results are no less dismal than those of the GBO-3. For example, it finds that the global population of vertebrates between 1970 and 2010 dropped by an unbelievable 52%. Although the authors refrain from making any predictions based on their data, the reader is welcome to extrapolate this trend into the near future, noting that as **ecosystems** weaken**, the likelihood of** further population losses increases. This study thus concludes that humanity would "need 1.5 Earths to meet the demands we currently make on nature," meaning that we either need to reduce our collective consumption and adopt less myopic economic policies or hurry up and start colonizing the solar system.

Other studies have found that 20% of all reptile species, 48% of all the world's primates, 50% of all freshwater turtles, and68% of plant species are currently threatened with extinction. There's also talk about the Cavendish banana going extinct as a result of a fungus, and research has confirmed that honey bees, which remain "the most important insect that transfers pollen between flowers and between plants," are dying out around the world at an alarming rate due to what's called "colony collapse disorder" -- perhaps a good metaphor for our technologically advanced civilization and its self-destructive tendencies.

Turning to the world's oceans, one finds few reasons for optimism here as well. Consider the fact that atmospheric carbon dioxide -- the byproduct of burning fossil fuels -- is not only warming up the oceans, but it's making them far more acidic. The resulting changes in ocean chemistry are inducing a process known as "coral bleaching," whereby coral loses the algae (called "zooxanthellae") that it needs to survive. Today, roughly 60% of coral reefs are in danger of becoming underwater ghost towns, and some 10% are already dead. This has **direct** **consequences for humanity because coral reefs "provide us with food, construction materials (limestone) and** **new** **medicines,"** and in fact "more than half of new cancer drug research is focused on marine organisms." Similarly, yet another study found that ocean acidification is becoming so pronounced that the shells of "tiny marine snails that live along North America's western coast" are literally dissolving in the water, resulting in "pitted textures" that give the shells a "cauliflower" or "sandpaper" appearance.

Furthermore, human-created pollution that makes its way into the oceans is carving out vast regions in which the amount of dissolved oxygen is too low for marine life to survive. These regions are called "dead zones," and the most recent count by Robert Diaz and his colleagues found more than 500 around the world. The biggest dead zone discovered so far is located in the Baltic Sea, and it's been estimated to be about 27,000 square miles, or a little less than the size of New Hampshire, Vermont, and Maryland combined. Scientists have even discovered an "island" of trash in the middle of the Pacific called the "Great Pacific Garbage Patch" that could be up to "twice the size of the continental United States." Similar "patches" of floating plastic debris can be found in the Atlantic and Indian oceans as well, although these are not quite as impressive. The point is that "Earth's final frontier" -- the oceans -- are becoming vast watery graveyards for a huge diversity of marine lifeforms, and in fact a 2006 paper in Science predicts that there could be virtually no more wild-caught seafood by 2048.

Everywhere one looks, the biosphere is wilting -- and a single bipedal species with large brains and opposable thumbs is almost entirely responsible for this worsening plight. If humanity continues to prune back the Tree of Life with reckless abandon, we could be forced to confront a global disaster of truly unprecedented proportions. Along these lines, a 2012 article published in Nature and authored by over twenty scientists claims that humanity could be **teetering on the brink of a catastrophic, irreversible collapse of the global ecosystem**. According to the paper, there could be **"tipping points" -- also called "critical thresholds" -- lurking in the environment that, once crossed, could initiate radical and sudden changes in the biosphere**. Thus, an event of this sort could be preceded by little or no warning: everything might look more or less okay, until the ecosystem is suddenly in ruins.

We must, moving forward, never forget that just as we're minds embodied, so too are we bodies environed, meaning that **if the environment implodes under the weight of civilization, then civilization itself is doomed.** While the threat of nuclear weapons deserves serious attention from political leaders and academics, as the Bulletin correctly observes, it's even more imperative that we focus on the broader "contextual problems" that **could inflate the overall probability of wars and terrorism in the future.** Climate change and biodiversity loss are both conflict multipliers of precisely this sort, and each is a contributing factor that's exacerbating the other. If we fail to make these threats a top priority in 2016, the **likelihood of nuclear weapons -- or some other form of emerging technology, including biotechnology and artificial intelligence -- being used in the future will only increase.**

Perhaps there's still time to avert the sixth mass extinction or a sudden collapse of the global ecosystem. But time is running out -- the doomsday clock is ticking.

**Contention 2 is Russia**

**Russia’s economy is at the brink --- oil is Putin’s last straw.**

**Matthews 25** [Owen Matthews, Degree in Modern History at Oxford University, 3-13-2025, The Russian economy is on the **brink of collapse** and Putin knows it, The Independent, https://www.the-independent.com/news/world/europe/russia-economy-putin-ukraine-war-deal-talks-trump-b2714371.html, Willie T.] \*\*edited for objectionable language\*\*

How close is Russia’s economy to collapse? As Donald Trump’s negotiators open direct talks with the Kremlin, Kyiv’s European allies hope that a final push on sanctions against Russia could be Ukraine’s last – and best – hope of victory. Mr Trump has warned that the US could impose a “devastating” financial blow on Russia if Putin refuses to accept the ceasefire agreement. “There are things you can do that wouldn’t be pleasant in a financial sense. I can do things financially,” he said in the Oval Office.

Putin intended his full-scale invasion of Ukraine to be a three-day operation that would force regime change in Kyiv. Neither Putin nor his military or economic planners anticipated a grinding war that now soaks up over **40 per cent of Kremlin spending**.

Nor did they expect Europe to impose serious sanctions, and even less did they anticipate the destruction of three of the four Gazprom gas pipelines under the Baltic Sea that before the war supplied over 30 per cent of Europe’s gas.

The result in Russia has been **rampant inflation**, currently running at over 9 per cent, crippling **[staggering] interest rates** of 21 per cent and runaway price hikes on staple goods that far **outpace the headline inflation rate** and have hit ordinary Russians hard.

Last summer the price of **eggs jumped by 42 per cent**, **bananas by 48 per cent, tomatoes by 39.5 per cent and potatoes by 25 per cent**. The Russian ruble has lost over **half of its value** since Putin first invaded Crimea in 2014, and over $600bn of the Kremlin’s foreign currency reserves have been frozen in Western banks.

More than **1,000 Western businesses** – including Ikea and McDonald’s – pulled out, as did Western car manufacturers. Imports of Western goods – especially technology – are now **expensively routed through sanctions-busting neighbours** like Kazakhstan and Georgia. And last month Russian utility companies hiked prices for electricity by up to **250 per cent.**

“Everyone drives Chinese cars these days, but there are no spare parts,” says Alexandra, 39, a former journalist who lives in Moscow and whose ex-husband is fighting in Ukraine. “The only foreign cars you buy are right-hand-drive [from Japan]. Anyone with a mortgage is paying crazy interest. People complain how expensive everything has become.”

Russia spent more on its military in 2024 than the rest of Europe combined, according to the International Institute for Strategic Studies’ latest Military Balance report – a staggering $462bn, if adjusted for purchasing power. The Kremlin’s spending splurge on its war effort has produced some winners, notably the 1.5 million troops currently serving in Putin’s army who are paid up to $2,500 a month to fight – four times the average salary in Russia’s most impoverished provinces.

Massive losses on the battlefield have **worsened labour shortages**, with a record-low unemployment rate of 2.4 per cent. Factories are **running at capacity and beyond**. Russia’s economy has “reached the **limits of its productive capacity** while demand continues to be stimulated,” Central Bank chief Elvira Nabiullina warned the Russian parliament in November, predicting a fatal combination of economic stagnation and inflation known as “stagflation”.

For the first three years of the war, the Kremlin’s war spending fuelled GDP growth which peaked at a staggering 5.4 per cent in early 2024. But 2025 will be the year that growth flatlines, experts predict.

The Kremlin has been able to afford its spending spree thanks, mostly, to India and China, which have continued to import Russian oil in record quantities. The EU has in theory capped the price that customers can pay for Russian Urals crude at $60 a barrel – somewhat below the current market price of $67. But so-called “attestation fraud” – such as making up the difference in fake transportation and other costs – makes the rules easy to bend.

Natural gas has **never been sanctioned** by the EU at all – and until 1 January of this year, 13 per cent of Europe’s piped gas was still being shipped from Russia through Ukrainian pipelines to Slovakia and Hungary.

Ukrainian fire and fury are currently doing damage to Russia’s war economy that near-**nonexistent European sanctions have failed to achieve**

Southern Europe **continues to import** millions of cubic meters of Russian gas via Turkey. And despite its posturing, Europe still sources more than 15 per cent of its liquefied natural gas or LNG from Russia – with some 17.8m tonnes of LNG docking in European ports in 2024, **up by more than 2 million tonnes from the year before**, according to analysts Rystad Energy.

In fact the only really effective “sanctions” on the Russian energy sector – which accounts for over **two-thirds of government revenues** – have been in the form of Ukrainian drone attacks on Russian oil refineries, pumping stations and storage facilities. Ukrainian fire and fury are currently doing damage to Russia’s war economy that European “sanctions” have failed to achieve.

International pressure has made it harder, but not impossible, for the Russian war machine to obtain important components such as semiconductors. And sanctions have certainly “achieved the crucial goal of leaving Russia’s economy highly unstable in the medium to long term”, according to Oliver Ruth of London’s Royal United Services Institute.

The current crazy levels of expenditure are unsustainable, so Putin has a strong economic incentive to bring his war to an end. Ukraine’s economy is also under attack.

But on the flip side, even as Russia’s economy slips into stagflation Ukraine’s economy is doing far worse. Concerted Russian assaults, damage to vital energy infrastructure and mass emigration have inflicted catastrophic damage of up to 40 per cent of the country’s pre-war GDP. Kyiv’s budget payments to millions of soldiers and state employees are currently being paid by the EU. Without those subsidies – the lion’s share of the €60bn in direct financial support so far sent by Brussels – Ukraine’s government finances would instantly collapse.

Ukraine’s European allies hoped that sanctions would force Putin into taking an early off ramp and bring his **economy crashing down**. That hasn’t yet happened yet – largely because Europe has been unable to kick its addiction to Russian gas, and the US did not want to risk a global **oil price spike by cutting off Russian exports.**

But while they have **not brought Putin to his knees**, they have made the war disastrous for Russia. As Moscow and Washington begin talks in Riyadh, and European leaders hold their own emergency meeting, keeping up economic pressure on Putin is the real weapon that they still have left in their arsenal.

**Sanctions won’t come.**

**Bush 25** [Daniel Bush, Master of Arts in U.S. politics @ Columbia & B.A. from NYU, 3-13-2025, If Trump wants new pressure on Moscow, oil and gas is 'only thing left', Newsweek, https://www.newsweek.com/if-trump-wants-new-pressure-moscow-oil-gas-only-thing-left-2044476, Willie T.] \*\*brackets in original\*\*

Perhaps Trump's **best available option** to pressure Moscow is the one thing he might be **least willing to do**, experts said: put a much tighter squeeze on Russia's oil and gas exports, which provide Russia with its **main source of revenue** and help pay for the war in Ukraine.

"If you're trying to get to a quicker settlement to the conflict in Ukraine, that's what you go after, those continued [Russian] energy sales," said Emily Kilcrease, a senior fellow at the Center for a New American Security. "It's the only thing left."

But Kilcrease said the Trump administration may be hesitant to take a "full-blown approach on energy-related sanctions against Russia, because that would cause additional turmoil" during a **moment of rising economic uncertainty** at home over the president's trade policies.

Trump's **domestic energy agenda** also makes it harder for him to go after the **heart of Russia's economy**. He has blamed his predecessor for the rise in energy prices that was largely driven by Russia's invasion of Ukraine, and ran on a promise to cut costs and lower inflation. A new spike in prices at the pump sparked by tougher energy sanctions on Russia could backfire with voters, analysts said.

"President Trump came in **promising to drive prices at the pump down** by half. That highlights the **delicate needle** he has to thread in engaging with Russia on energy right now," said Mark Finley, an energy expert at Rice University's Baker Institute. "I suspect they'll be very cautious about sanctions that would risk taking Russian **barrels off the market place."**

Russia has found ways to skirt the sanctions, however, including by relying on a so-called "shadow fleet" of vessels to continue exporting oil by sea. Russia has also continued exporting natural gas to parts of Europe and ramped up its energy exports to China, India and other countries that have not participated in the sanctions.

Russian **oil and gas revenue increased by 26 percent** to $108 billion last year, a Reuters report shows. The European Union spent more on Russian oil and gas in 2024 than it did on financial assistance to Ukraine, according to a study published last month by the Centre for Research on Energy and Clean Air.

So far, the West "hasn't wanted to put **real pressure** on Russia," Oleksandr Merezhko, the chairman of the Ukraine Parliament's Foreign Affairs Committee, said in a phone interview with *Newsweek.* Trump could do that, he said, "by depriving Russia of the profits it receives from selling oil and gas."

There are several steps the U.S. and allies could take, Merezhko and others said. They include lowering the price cap on Russian oil, cracking down harder on the shadow fleet operators and placing secondary sanctions on companies and trading partners like China that continue buying Russian energy.

**Affirming decreases oil demand AND insulates Americans from sanctioning Russia.**

**Zadrowski 24** [William Zadrowski, Squadron Commander @ the USAF Academy & bound for B.S. in Military and Strategic Studies, 12-8-2024, Nuclear Energy: The Overlooked Energy Solution, Modern Diplomacy, https://moderndiplomacy.eu/2024/12/08/nuclear-energy-the-overlooked-energy-solution/, Willie T.]

The U.S. faces a persistent energy worry. Over the last few years, **electricity demand has soared** while U.S.-based energy suppliers have tried their best to keep up. While energy demand usually fluctuates throughout the year due to varying weather conditions and as the seasons change, the U.S. Energy Information Administration has shown that energy demand has steadily increased over the last fifty years. This can be attributed to population growth and the expansion of electricity production to meet society’s rapidly growing energy needs. While total electricity supply has adequately met the increasing demand over the last fifty years, the steadily increasing need for greater electricity places the U.S. in a vulnerable situation – one that can become susceptible to disruptions and shortages. The power sector already experiences immense strain during peak electricity consumption, namely during periods of intense weather such as heatwaves, snowstorms, and other weather phenomena. Considering the **already-strained power sector** in the U.S., further concerns about energy security in the U.S. center around the U.S.’s ability to create **viable alternative energy solutions** to ensure energy demand is met with adequate supply in the event of energy disruptions.

Nuclear Energy: Where It’s Been and Where It’s Going

The U.S.’s energy consumption portfolio **consists largely of fossil fuels**, accounting for more than **eighty percent** of the U.S.’s total energy consumption in 2023. Putting aside environmental concerns and considerations, the U.S. needs to invest more in another energy source capable of matching fossil fuel consumption in the near future. The best solution to this concern is nuclear energy. Although the U.S. consumes a significant proportion of available electricity from nuclear sources, roughly nine percent, nuclear energy has the potential to **supplement the U.S.’s dependency** on fossil fuels. The nuclear power industry cannot replace the need for fossil fuels, nor should it, but it would provide a safety net for supply chain disruptions and create alternatives to domestic energy consumption. This would prove especially important when considering the fragility of fossil fuel imports from foreign sources and the detriment to national security should there be a fossil fuel shortage in the U.S. and/or abroad. For this to happen, though, obstacles to nuclear power production must be overcome.

The U.S. already has **nuclear energy production** facilities and infrastructure to contribute to the existing energy portfolio, but not nearly at the same scale as fossil fuels. Why might this be? The short answer might be that there exist **high initial costs to producing the infrastructure and plants** required to make a nuclear reactor; however, the more likely reason would be widespread public opposition to and negative perception of nuclear energy production in the U.S. As many American citizens could point out, nuclear energy’s past is riddled with catastrophic meltdowns and lasting environmental impacts – things that pose obvious issues with public support investment into nuclear energy production. Notable incidents such as the Chornobyl meltdown, the Fukushima disaster, and the Three Mile Island Accident are well-known examples the public tends to associate with nuclear energy. The risk of a nuclear meltdown and severe environmental effects from accidents at nuclear power facilities are legitimate concerns and should not be ignored, however, nuclear power plant infrastructure and production technology have progressed significantly, partially influenced by these notable disasters to prevent similar accidents from ever occurring in the future. The nuclear power industry is not the same as it was some twenty years ago – it has seen significant increases in safety, regulation, and output optimization through new technologies. If the public can continue moving towards greater support for widespread nuclear power production, which appears to be trending that way in recent years, nuclear energy as the **main source of consumer energy** consumption in the U.S. is a real possibility.

Nuclear Energy as a Domestic **Alternative to Fossil Fuels**

Nuclear power production for energy’s sake is not the primary reason for the needed increase in nuclear power output. The need for increased output stems from the vulnerabilities in the U.S.’s energy supply and demand trends. Over the last few years, the U.S. has increased its crude oil exports and became a net exporter of crude oil in 2021, according to the U.S. Energy Information Administration. The U.S. being able to produce more crude oil than it consumes is great for energy security interests since it means the U.S. is less dependent on foreign oil, at least when compared to when the U.S. was a net importer of foreign oil. A decreased dependency on foreign fossil fuel imports provides a host of benefits to the U.S. One of these is the **increased stability** of fossil fuel supply. Considering that the U.S.’s largest source of crude oil and other fossil fuel imports are from areas of the world with complex geopolitical concerns, such as armed conflict, crude oil supply chains face the ever-persistent threat of disruption, whether from direct conflict or supply management used as a tool of coercion, For example, countries that export crude oil may use their production capabilities as a tool of coercion and pressure by restricting the supply of their exports to certain markets, often those that align with their political goals and ideals. This disruption of crude oil was seen following the start of the Russo-Ukraine war, where shortly after the invasion of Ukraine, Russian oil exports were drastically decreased to Western countries following embargoes and sanctions, namely put in place by those in the European Union (EU) and the U.S. These sanctions were designed to be a form of hard power in which the EU and the U.S. **aimed to deter Russian aggression** in hopes that it would accomplish a political end. Whether or not these sanctions are producing their desired effect is beside the point, but they resulted in the **increase in crude oil prices** in the U.S. and abroad, since a major exporter of crude oil, Russia, could not supply crude oil to the U.S. In terms of international diplomacy, the U.S. pursued an option to deal with Russia and its invasion of Ukraine which had **immediate effects on the U.S. economy** and the fossil fuel industry. Whether it proved successful for U.S. interests is yet to be determined, but one thing is certain – if the U.S. had a greater energy consumption available to consumers from nuclear power, crude oil prices may not have increased, as less crude oil and fossil fuels would be needed to power homes, businesses, and other everyday electricity consumers since nuclear power could have **reduced the demand for fossil fuels**.

**Decreased demand means more exports.**

**Rua 13** [Antonio Rua, Senior Economist @ Banco de Portugal & Associate Professor of Economics @ Nova School of Business and Economics, September 2013, Is there a role for domestic demand pressure on export performance?, European Central Bank, https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1594.pdf, Willie T.]

Typically, export performance is modeled as a function of the foreign demand for a country’s output and a country’s price competitiveness indicator. In general, the foreign demand is proxied by the evolution of imports in the trade partners and its relative evolution vis-à-vis exports is used as a measure of market share developments. The relative price advantage of a country over its competitors is often captured by the real exchange rate. Ceteris paribus, a depreciation makes the country’s products cheaper relative to its competitors in the foreign market, which will raise the corresponding demand and increase exports leading to an increase of the market share. These factors are essentially related to the demand side. In fact, most studies **do not consider supply** side variables explicitly when modeling exports. However, it has been recently widely acknowledged that such determinants are far from able to fully explain export performance (see, for example, Fagan et al. (2001, 2005), di Mauro and Forster (2008), European Commission (2010), Dieppe et al. (2012)). Such evidence reinforces the need to search for other factors that may influence exports dynamics.

In line with some previous literature, this paper suggests considering domestic demand pressure as an additional explanatory variable. In fact, it is likely that domestic conditions influence firms willingness or ability to supply exports. In a context of high domestic demand pressure, firms will work at full capacity and will not be able to follow, in the short-run, external demand increases. In contrast, during a domestic recession, firms will be able to **allocate more resources** to exports. In other words, in periods of **slacking** domestic demand firms try to **compensate** for the decline in domestic sales through increased efforts to export while in boom periods production can be mainly sold on the domestic market. Early work focusing on the short-run effects of domestic demand pressure on exports includes Ball et al. (1966), Smyth (1968), Artus (1970, 1973), Zilberfarb (1980), Faini (1994), Sharma (2003), among others. In those studies it was found a significant negative effect of domestic demand pressure on exports for several countries, including the United Kingdom, **the United States**, Germany, Israel, Turkey, Morocco and India. Thus, when modeling export performance, one should take into account not only the driving forces of external demand but also **domestic demand**, as the former affect exports from the demand side and the latter from the supply side. More recently, there has been theoretical and empirical research at the firm level that allows for a better understanding of the negative relationship between domestic demand and exports. Such developments will also contribute to influence the macroeconometric modeling of exports.

In this paper, we revisit the theoretical role of domestic demand pressure on exports and assess its importance on modeling the export performance of the Portuguese economy.1 Besides the recent literature at firm level, such assessment is also motivated by the fact that the standard exports modeling approach is unable to capture properly the Portuguese export performance over the most recent period. In particular, it has been observed a significant and continuous increase of exports market share which cannot be explained by developments on price competitiveness indicators. Such phenomenon is happening along with a dramatic fall of domestic demand. In fact, this relationship could be particularly important in the current economic situation, not only in Portugal but also in other European countries under macroeconomic adjustment and facing strong declines of domestic demand

**Empirically, increased supply lowers oil prices --- decks Russia’s military and economy.**

**Cooper 24** [Luke Cooper, Associate Professorial Research Fellow In International Relations @ The London School Of Economics and Political Science, 11-10-2024, Will oil decide the fate of the Russia-Ukraine War?, International Politics and Society Journal, https://www.ips-journal.eu/topics/foreign-and-security-policy/will-oil-decide-the-fate-of-the-russia-ukraine-war-7836/, Willie T.]

Saudi Arabia’s decision to increase oil supply at a time of falling global demand could **jeopardise** the Russian war effort. With Russia already selling its oil at discounted rates and with higher production costs, a low-price environment in oil markets may impact its ability to **finance its aggression** in Ukraine.

Russia and Saudi Arabia have **previously clashed** in oil markets. For a brief one-month period at the outset of the Covid-19 pandemic, Russia launched a foolish price war, increasing production as the world moved into lockdown. Once Saudi Arabia responded in kind, the oil price **went into freefall**. In an illustration of how geopolitics ‘overdetermines’ oil markets, the trigger for the negotiations that brought the crisis to an end was allegedly US President Donald Trump’s threat to withdraw American military assistance from Saudi Arabia. Under this geopolitical pressure and collapsing market demand, making a **price war potentially ruinous for all parties**, Russia and Saudi Arabia stepped back, agreeing to the supply cuts required to stabilise world prices.

As recounted in Cambridge professor Helen Thompson’s Disorder: Hard Times in the 21st Century, the oil supply glut in 2014 – 2016 was also shaped by the competitive postures of the United States, Russia and Saudi Arabia. Then as now, Saudi Arabia increased the supply of oil into the world market at a time of falling demand with the economic aim of disincentivising American investment in shale oil and the geopolitical aim of pressuring Russia and Iran to retreat from their support for the Assad regime in Syria. That Russia was able to weather the financial crisis produced by the combination of Western sanctions and the Saudi expansion in oil supply, emerging with the Assad regime intact and Russia’s hold on occupied southern and eastern Ukraine stable, provides a salutary warning for the hope that the present conjuncture may prove problematic for Putin’s regime. But with Russia facing both much **more radical external sanctions** – in effect its near-removal from the Western trade and financial order altogether – and **fighting an enormously costly all-out war** against Ukraine, the **conjuncture** of late 2024 poses a **far more serious challenge.**

The limits of military Keynesianism

Trends in the global oil market **bear down heavily on Russia’s strategic choices**. By 2030, the International Energy Agency anticipates that global supply capacity will outstrip demand by some 8 million barrels per day, a situation they describe as ‘staggering’ and ‘unprecedented’ (outside of the Covid-19 pandemic). As Iran and the Gulf States have oil wells close to the surface, making them cost-efficient to extract from, these states are in a much more commercially advantageous position to cope with falling oil prices. Their breakeven price for new drilling projects is also far lower than that of their international competitors, including Russia and the United States.

By moving towards a more competitive posture, Saudi Arabia is challenging America’s more expensive production but also tacitly acknowledging that the OPEC+ group has a diminished price-setting power. For Russia, this is the worst of both worlds. Unlike the United States, it has an oil-dependent economy, which benefits from the cartel power of OPEC+. Yet, unlike Saudi Arabia, its oil is not cheap to extract, making it poorly equipped to deal with low-price conditions. This drives a short-term escalatory logic for Russia’s war on Ukraine, requiring rapid battlefield successes prior to the emergence of low-price oil market conditions.

With oil accounting for between **30-50 per cent of annual state budget** revenues since 2014, Russia is, fundamentally, a petrostate.

Russia’s successful adaption of its domestic economy to the war effort has been an important story of the full-scale invasion to date. The Russian state has utilised a suite of policies that Volodymyr Ishchenko, Ilya Matveev and Oleg Zhuravlev identify as ‘military Keynesianism’, with war-related spending stimulating demand in the economy. They note, in particular, the important distributional effects of this in terms of wage growth and industrial expansion, how this may have impacted support for the war effort among the Russian working classes and the internal limits that these policies have encountered in the form of acute labour shortages constraining economic output.

Putting the Russian war economy in a global context that recognises its oil dependency can help us build a **fuller picture of its vulnerabilities**. While sanctions have ruptured Russia’s relationship to Western markets, this does not make its war economy autarchic. On the contrary, revenues from oil exports are **critical**. As the Oxford Institute for Energy Studies has argued, the Russian economy is dualistic in the sense that it may be divided between revenue-generating sectors (of which the most important is oil) and revenue-dependent sectors that are sustained through the distribution of rents. With oil accounting for between 30-50 per cent of annual state budget revenues since 2014, Russia is, **fundamentally, a petrostate**. The Putin regime manages these rents and has **drawn on them** to fund military aggression in Ukraine.

While Russia has not been publishing trade data since the full-scale invasion, estimates from Bruegel suggest that, despite its successful application of military Keynesian instruments, it continues to **fund its trade deficit** in non-fossil fuel goods through the sale of fossil fuels (delivering an overall surplus). As these imports are necessary to meet the **needs of the Russian populace** and the state’s war effort, maintaining the flow of oil rents is critical.

Russia has faced rising costs while selling to markets at a discounted rate (advantaging non-Western buyers in general and India and China in particular).

**It’s instant AND turns case.**

**Baltvilks 22** [Witajewski; Expert @ the Centre for Climate and Energy Analyses @ the Polish National Centre for Emission Management; April 26; euractiv; “How the green paradox and climatepolicy can become Putin’s nightmare,” https://www.euractiv.com/section/energy/opinion/how-the-green-paradox-and-climate-policy-can-become-putins-nightmare/; DOA: 3-21-2025] tristan

**Russia’s** **invasion** of Ukraine **pushed** global **oil** and **gas** **prices** even **higher** than they stood in 2021 because of the Russian **export** **restriction**. Many experts believe that further sanctions on Russia, including the gradual isolation of Russia in the sphere of global trade, would **keep** oil and gas **prices** **high** in the medium term.

Ironically, **high** global **prices** **imply** that many Asian **countries** are more likely to **purchase** Putin’s **oil**, especially if it is **offered** at a **lower** **price**. Should this happen, Putin’s oil revenues will remain high, and sanctions by G7 countries will not achieve their primary goal.

This risk can be avoided if sanctions are complemented by a firm climate policy.

The ability of climate policy to influence the oil market and oil prices is illustrated in the so-called green paradox. The green paradox is a hypothetical scenario in which the **announcement** of a rigid **climate** **policy** becomes a **signal** for **oil** **producers** that the **demand** for oil will **end** soon, motivating them to **sell** as **much** as they **can** as soon as they can.

**Flooding** the **market** with oil **depresses** its **price** and **incentivises** **consumers** to **use** **more**. If this were to happen, emissions would increase, **rendering** the climate **policy** **ineffective**. The green paradox is particularly relevant in the context of oil markets, but the mechanisms of the paradox can also apply to natural gas and coal.

Until recently, the green paradox was a problem for climate change economists, but the one who should be most concerned is, in fact, Vladimir Putin. The green paradox has the potential to turn radical climate policy into a weapon against Putin’s regime. It is especially important because Russia, the second-largest worldwide gas producer and the third-largest oil producer, currently uses fossil fuels as a weapon against the West for the purpose of pacification.

A **clear** and credible **commitment** by the largest economies in the world to halve the consumption of oil over the next two decades would be a **clear** **signal** to all oil producers that their **resources** will soon **lose** **value**. **No** **producer** with low extraction costs will **keep** its **reserves** for the **future** — they will **attempt** to **pump** their **oil** into the market as long as it **exists**.

**Low**-**cost** oil from Saudi Arabia and the United Arab Emirates will, at least partly, **crowd** **out** the more **expensive** **product** from **Russia**, Venezuela and Iran. Even if that crowding out is not complete, the low oil price will **render** these countries’ **oil** **revenues** **negligible**. In Russia, where **oil** **rents** constitute more than **9% of** the nation’s **GDP** (**36%** of public-sector **revenue**), this will unavoidably **complicate** the **financial** **landscape** of the regime.

**Decline causes great power war.**

**Kaplan '16** [Robert D. Kaplan; American author, Senior fellow at the Center for a New American Security; March/April 2016; "Eurasia’s Coming Anarchy"; Foreign Affairs; https://www.foreignaffairs.com/articles/china/2016-02-15/eurasias-coming-anarchy; access at https://archive.ph/YfaTO; accessed 03-29-2025] doobz

Not coincidentally, **these military adventures have accompanied the sharp reversal of Russian economic power**. In 2014, the price of oil collapsed, the countries of central and eastern Europe continued to wean themselves off Russian gas, slow global growth further reduced the appetite for Russian hydrocarbons and other natural resources, and the West levied damaging sanctions on Moscow. The result has been a full-blown economic crisis, with the ruble losing roughly half of its value against the U.S. dollar since 2014. That year, Russian GDP growth fell to nearly zero, and by the third quarter of 2015, the economy was shrinking by more than four percent. In the first eight months of 2015, capital investment declined by six percent and the volume of construction fell by eight percent.

Russia’s economic problems run deep, leaving its leaders with few easy options for fixing them. For decades, **Russia has relied on natural resource production and a manufacturing sector that makes consumer goods for the domestic market** (since few foreigners want to buy Russia’s nonmilitary products). Despite some pockets of ostentatious wealth, **the service sector has remained underdeveloped**. Because Putin and his camarilla never built civil institutions or a truly free market, the corrupt, gangster-led economy of Russia today exhibits eerie similarities to the old Soviet one.

Back in the 1980s, when that economy was hit by a crisis, Mikhail Gorbachev responded by opening up the political system—only to be rewarded with anarchy and the collapse of Russia’s empire. Putin learned this lesson well and is determined to do the opposite: keep the political system closed while distracting the masses with displays of Russian power in the near abroad. Putin is a former intelligence agent, not a former apparatchik. Thus, although he nurses historical grudges concerning Russia’s place in the world, he is not deceiving himself about Russia’s internal problems. As **the Russian economy decays further, Putin surely knows that for the sake of domestic approval, his foreign policy must become more creative and calculating**, even deceptively conciliatory at moments. Over time, expect him to find new ways to undermine NATO and the EU, even as he claims to be helping the West fight the Islamic State, or ISIS. **For the more chaos he can generate abroad, the more valuable the autocratic stability he provides at home will appear**. Russians may know in the abstract that a freer society is preferable, but they fear the risks of such a transition.

Try as he might, however, Putin will not be able to shelter his regime from the fallout of economic collapse. Desperation will spawn infighting among a ruling elite that has grown used to sharing generous spoils. Given the absence of strong institutions, as well as the brittle and highly centralized nature of the regime, **a coup like the one that toppled Nikita Khrushchev in 1964 cannot be ruled out**; **Russia remains Soviet in its style of governance**. The country has experienced the crumbling of autocracy followed by chaos before (as during and after the 1917 revolutions), and it’s possible that enough turmoil could cause Russia to fragment yet again. The heavily Muslim North Caucasus, along with areas of Russia’s Siberian and Far Eastern districts, distant from the center and burdened by bloody politics, may begin loosening their ties to Moscow in the event of instability inside the Kremlin itself. **The result could be Yugoslavia lite: violence and separatism that begin in one place and spread elsewhere**. **As Moscow loses control, the global jihadist movement could take advantage of the vacuum and come to Russia’s outlying regions and to Central Asia**.

Bad as this sounds, things could still get worse. Back in 1991, the Polish intellectual Adam Michnik predicted that future leaders in Russia and eastern Europe would fill the gap left by the collapse of communism with “a coarse and primitive nationalism.” **Putin has adopted just such a nationalism in recent years**. **He has slyly backed separatist movements in Abkhazia, the Donbas, Nagorno-Karabakh, South Ossetia, and Transnistria**, creating deniable conflicts that result in warlord-run statelets. In the years ahead, **he may well choose to provoke more of these so-called frozen conflicts, but this time in NATO Baltic member states** (which have sizable Russian populations and which Moscow still considers lost provinces). Meanwhile, Putin will try to play on Europe’s need for Russian support in Syria to force Europe to acknowledge his annexation of Crimea and his de facto rule over eastern Ukraine.

**Extinction!**

**Clare '23** [Stephen Clare; Effective Altruism Writer; June 2023; "Great power war"; 80000 Hours; https://80000hours.org/problem-profiles/great-power-conflict/; accessed 12-05-2024] leon

**A modern great power war could see nuclear weapons, bioweapons, autonomous weapons, and other destructive new technologies** deployed on an unprecedented scale.

It would probably be the most destructive event in history, shattering our world. **It could even threaten us with extinction**.

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We’ve come perilously close to just this kind of catastrophe before.¶ On October 27, 1962 — near the peak of the Cuban Missile Crisis — an American U-2 reconnaissance plane set out on a routine mission to the Arctic to collect data on Soviet nuclear tests. But, while flying near the North Pole, with the stars obscured by the northern lights, the pilot made a navigation error and strayed into Soviet airspace.1¶ Soviet commanders sent fighter jets to intercept the American plane. The jets were picked up by American radar operators and nuclear-armed F-102 fighters took off to protect the U-2.¶ Fortunately, the reconnaissance pilot realised his error with enough time to correct course before the Soviet and American fighters met. But the intrusion enraged Soviet Premier Nikita Khrushchev, who was already on high alert amidst the crisis in Cuba.¶ “What is this, a provocation?” Khrushchev wrote to US President John F. Kennedy. “One of your planes violates our frontier during this anxious time when everything has been put into combat readiness.”¶ If the U-2’s path had strayed further west, or the Soviet fighters had been fast enough to intercept it, this incident could have played out quite differently. Both the United States and the USSR had thousands of nuclear missiles ready to fire. Instead of a nearly-forgotten anecdote, the U-2 incident could have been a trigger for war, like the assassination of Franz Ferdinand.

<<LINE BREAKS CONTINUE>>

**Competition among the world’s most powerful countries shapes our world today**. And whether it’s through future incidents like the lost U-2, or something else entirely, **it’s plausible that it could escalate and lead to a major, devastating war**.

Is there anything you can do to help avoid such a terrible outcome? It is, of course, difficult to imagine how any one individual can hope to influence such world-historical events. **Even the most powerful world leaders often fail to predict the global consequences of their decisions**.

But I think **the likelihood and severity of great power war makes this among the most pressing problems of our time** — **and that some solutions could be impactful enough** that working on them may be one of the highest-impact things to do with your career.

By taking action, I **think we can create a future where the threat of great power war is a distant memory rather than an ever-present danger**.

Summary

**Economic growth and technological progress have bolstered the arsenals of the world’s most powerful countries**. That means the next war between them could be far worse than World War II, the deadliest conflict humanity has yet experienced.

Could such a war actually occur? **We can’t rule out the possibility**. **Technical accidents or diplomatic misunderstandings could spark a conflict that quickly escalates**. **Or international tension could cause leaders to decide they’re better off fighting than negotiating**.

<<TEXT CONDENSED NONE OMITTED>>

It seems hard to make progress on this problem. It’s also less neglected than some of the problems that we think are most pressing. There are certain issues, like making nuclear weapons or military artificial intelligence systems safer, which seem promising — although it may be more impactful to work on reducing risks from AI, bioweapons or nuclear weapons directly. You might also be able to reduce the chances of misunderstandings and miscalculations by developing expertise in one of the most important bilateral relationships (such as that between the United States and China).¶ Finally, by making conflict less likely, reducing competitive pressures on the development of dangerous technology, and improving international cooperation, you might be helping to reduce other risks, like the chance of future pandemics.¶ Our overall view¶ Recommended¶ Working on this issue seems to be among the best ways of improving the long-term future we know of, but all else equal, we think it’s less pressing than our highest priority areas (primarily because it seems less neglected and harder to solve).¶ Scale ¶ There’s a significant chance that a new great power war occurs this century.¶ Although the world’s most powerful countries haven’t fought directly since World War II, war has been a constant throughout human history. There have been numerous close calls, and several issues could cause diplomatic disputes in the years to come.¶ These considerations, along with forecasts and statistical models, lead me to think there’s about a one-in-three chance that a new great power war breaks out in roughly the next 30 years.¶ Few wars cause more than a million casualties and the next great power war would probably be smaller than that. However, there’s some chance it could escalate massively. Today the great powers have much larger economies, more powerful weapons, and bigger military budgets than they did in the past. An all-out war could kill far more people than even World War II, the worst war we’ve yet experienced.¶ Could it become an existentially threatening war — one that could cause human extinction or significantly damage the prospects of the long-term future? It’s very difficult to say. But my best current guess is that the chance of an existential catastrophe due to war in the next century is somewhere between 0.05% and 2%.¶ Neglectedness ¶ War is a lot less neglected than some of our other top problems. There are thousands of people in governments, think tanks, and universities already working on this problem. But some solutions or approaches remain neglected. One particularly promising approach is to develop expertise at the intersection of international conflict and another of our top problems. Experts who understand both geopolitical dynamics and risks from advanced artificial intelligence, for example, are sorely needed.¶ Solvability ¶ Reducing the risk of great power war seems very difficult. But there are specific technical problems that can be solved to make weapons systems safer or less likely to trigger catastrophic outcomes. And in the best case, working on this problem can have a leverage effect, making the development of several dangerous technologies safer by improving international cooperation and making them less likely to be deployed in war.¶ At the end of this profile, I suggest five issues which I’d be particularly excited to see people work on. These are:¶ Developing expertise in the riskiest bilateral relationships¶ Learning how to manage international crises quickly and effectively and ensuring the systems to do so are properly maintained¶ Doing research to improve particularly important foreign policies, like strategies for sanctions and deterrence¶ Improving how nuclear weapons and other weapons of mass destruction are governed at the international level¶ Improving how such weapons are controlled at the national level¶ Profile depth¶ In-depth ¶ This is one of many profiles we've written to help people find the most pressing problems they can solve with their careers. Learn more about how we compare different problems, see how we try to score them numerically, and see how this problem compares to the others we've considered so far.¶ Why might preventing great power war be an especially pressing problem?¶ A modern great power war — an all-out conflict between the world’s most powerful countries — could be the worst thing to ever happen to humanity.¶ Historically, such wars have been exceptionally destructive. Sixty-six million people died in World War II, likely the deadliest catastrophe humanity has experienced so far.¶ Since World War II, the global population and world economy have continued to grow, nuclear weapons have proliferated, and military technology has continued to advance. This means the next world war could be even worse, just as World War II was much deadlier than World War I.¶ It’s not guaranteed that such a war will break out. And if it does, it may not escalate to such a terrible extent. But the chance can’t be ignored. In fact, there are reasons to think that the odds of World War III breaking out this century are worryingly high.¶ A modern great power war would be devastating for people alive today. But its effects could also persist long into the future. That’s because there is a substantial chance that this century proves to be particularly important. Technologies with the potential to cause a global catastrophe or radically reshape society are likely to be invented. How we choose to develop and deploy them could impact huge numbers of our descendants. And these choices would be affected by the outcomes of a major war.¶ To be more specific, there are three main ways great power conflict could affect the long-term future:¶ High international tension could increase other risks. Great power tensions could make the world more dangerous even if they don’t lead to war. During the Cold War, for example, the United States and the USSR never came into direct conflict but invested in bioweapons research and built up nuclear arsenals. This dynamic could return, with tension between great powers fueling races to develop and build new weapons, raising the risk of a disaster even before shots are fired.¶ War could cause an existential catastrophe. If war does break out, it could escalate dramatically, with modern weapons (nuclear weapons, bioweapons, autonomous weapons, or other future technologies) deployed at unprecedented scale. The resulting destruction could irreparably damage humanity’s prospects.¶ War could reshape international institutions and power balances. While such a catastrophic war is possible, it seems extremely unlikely. But even a less deadly war, such as another conflict on the scale of World War II, could have very long-lasting effects. For example, it could reshape international institutions and the global balance of power. In a pivotal century, different institutional arrangements and geopolitical balances could cause humanity to follow different long-term trajectories.¶ The rest of this profile explores exactly how pressing a problem great power conflict is. In summary:¶ Great power relations have become more tense. (More.)¶ Partly as a result, a war is more likely than you might think. It’s reasonable to put the probability of such a conflict in the coming decades somewhere between 10% and 50%. (More.)¶ If war breaks out, it would probably be hard to control escalation. The chance that it would become large enough to be an existential risk cannot be dismissed. (More.)¶ This makes great power war one of the biggest threats our species currently faces. (More.)¶ It seems hard to make progress on solving such a difficult problem (more) — but there are many things you can try if you want to help (more).¶ International tension has risen and makes other problems worse¶ Imagine we had a thermometer-like device which, instead of measuring temperature, measured the level of international tension.2 This ‘tension metre’ would max out during periods of all-out global war, like World War II. And it would be relatively low when the great powers3 were peaceful and cooperative. For much of the post-Napoleonic 1800s, for example, the powerful European nations instituted the Concert of Europe and mostly upheld a continental peace. The years following the fall of the USSR also seem like a time of relative calm, when the tension metre would have been quite low.4¶ How much more worried would you be about the coming decades if you knew the tension metre would be very high than if you knew it would be low? Probably quite a lot. In the worst case, of course, the great powers could come into direct conflict. But even if it doesn’t lead to war, a high level of tension between great powers could accelerate the development of new strategic technologies, make it harder to solve global problems like climate change, and undermine international institutions.¶ During the Cold War, for instance, the United States and USSR avoided coming into direct conflict. But the tension metre would still have been pretty high. This led to some dangerous events:¶ A nuclear arms race. The number of nuclear warheads in the world grew from just 300 in 1950 to over 64,000 in 1986.¶ The development of new bioweapons. Despite signing the Biological Weapons Convention in 1972, the search for military advantages motivated Soviet decision makers to continue investing in bioweapon development for decades. Although never used in combat, biological agents were accidentally released from research facilities, resulting in dozens of deaths and threatening to cause a pandemic.5¶ Nuclear close calls. Military accidents and false alarms happened regularly, and top decision makers were more likely to interpret these events hostilely when tensions were high. On several occasions it seems the decision about whether or not to start a nuclear war came down to individuals acting under stress and with limited time.¶ This makes international tension an existential risk factor. It’s connected to a number of other problems, which means reducing the level of international tension would lower the total amount of existential risk we face.¶ The level of tension today¶ Recently, international tension seems to have once again been rising. To highlight some of the most salient examples:¶ China-United States relations have deteriorated, leading to harsh diplomatic rhetoric and protectionist trade policies that aim to reduce the countries’ economic interdependence.¶ Russia’s invasion of Ukraine has killed about a hundred thousand people so far, raised the risk of nuclear war, and sent United States-Russia relations to their lowest point since the Cold War.¶ Chinese and Indian soldiers fought deadly skirmishes along their countries’ disputed border in 2020–21.¶ These dynamics raise an important question: how much more dangerous is the world given this higher tension than it would be in a world of low tension?¶ I think the answer is quite a bit more dangerous — for several reasons. First, international tension seems likely to make technological progress more dangerous. There’s a good chance that, in the coming decades, humanity will make some major technological breakthroughs. We’ve discussed, for example, why one might worry about the effects of advanced artificial intelligence systems or biotechnology. The level of tension could strongly affect how these technologies are developed and governed. Tense relations could, for example, cause countries to neglect safety concerns in order to develop technology faster.6¶ Second, great power relations will strongly influence how nations do, or do not, cooperate to solve other global collective action problems. For example, in 2022, China withdrew from bilateral negotiations with the United States over climate action in protest of what it perceived as American diplomatic aggression in Taiwan. That same year, efforts to strengthen the Biological Weapons Convention were reportedly hampered by the Russian delegation after their country’s invasion of Ukraine raised tensions with the United States and other western countries.¶ And third, if relations deteriorate severely, the great powers could fight a war.¶ How likely is a war?¶ Wars are destructive and risky for all countries involved. Modern weapons, especially nuclear warheads, make starting a great power war today seem like a suicidal undertaking.¶ But factors like the prevalence of war throughout history, the chance that leaders make mistakes, conflicting ideologies, and commitment problems, make me think that conflict could break out anyway.¶ On balance, I think such an event is somewhat unlikely but hardly unthinkable. To quantify this: I put the chance we experience some kind of war between great powers before 2050 at about one-in-three.7¶ War has occurred regularly in the past¶ One reason to think a war is quite likely is that such conflicts have been so common in the past. Over the past 500 years, about two great power wars have occurred per century.8¶ Naively, this would mean that every year there’s a 2% chance such a war occurs, implying the chance of experiencing at least one great power war over the next 80 years — roughly until the end of the century — is about 80%.9¶ This is a very simple model. In reality, the risk is not constant over time and independent across years. But it shows that if past trends simply continue, the outcome is likely to be very bad.¶ Has great power war become less likely?¶ One of the most important criticisms of this model is that it assumes the risk is constant over time. Some researchers have argued instead that, especially since the end of World War II, major conflicts have become much less likely due to:¶ Nuclear deterrence: Nuclear weapons are so powerful and destructive that it’s just too costly for nuclear-armed countries to start wars against each other.10¶ Democratisation: Democracies have almost never gone to war against each other, perhaps because democracies are more interconnected and their leaders are under more public pressure to peacefully resolve disputes with each other.11 The proportion of countries that are democratic has increased from under 10% in 1945 to about 50% today.¶ Strong economic growth and global trade: Global economic growth accelerated following World War II and the value of global exports grew by a factor of almost 30 between 1950 and 2014. Since war disrupts economies and international trade, strong growth raises the costs of fighting.12¶ The spread of international institutions: Multilateral bodies like the United Nations General Assembly and Security Council promote diplomatic dialogue and facilitate coordination to punish transgressors.13¶ It is true that we are living through an unusually long period of great power peace. It’s been about 80 years since World War II. We just saw that a simple model using the historical frequency of great power wars suggests there was only a 20% chance of going that long without at least one more war breaking out. This is some evidence in favour of the idea that wars have become significantly less common.¶ At the same time, we shouldn’t feel too optimistic.¶ The numerous close calls during the Cold War suggest we were somewhat lucky to avoid a major war in that time. And a 20% chance of observing 80 years of peace is not that low.14 Structural changes might have dramatically reduced the likelihood of war. Or perhaps we’ve just been lucky. It could even be that technological advances have made war less likely to break out, but more deadly when it occurs, leaving the overall effect on the level of risk ambiguous. It just hasn’t been long enough to support a decisive view.15¶ So while the recent historical trend is somewhat encouraging, we don’t have nearly enough data to be confident that great power war is a thing of the past. To better predict the likelihood of future conflict, we should also consider distinctive features of our modern world.16¶ One might think that a modern great power war would simply be so destructive that no state leader would ever choose to start one. And some researchers do think that the destruction such a war would wreak globally makes it less likely to occur. But it would be hard to find anyone who claims this dynamic has driven the risk to zero.¶ First, a war could be started by accident.¶ Second, sometimes even prudent leaders may struggle to avoid a slide towards war.¶ We could blunder into war¶ An accidental war can occur if one side mistakes some event as an aggressive action by an adversary.¶ This happened several times during the Cold War. The earlier example of the wayward American reconnaissance plane shows how routine military exercises carry some escalation risk. Similarly, throughout history, nervous pilots and captains have caused serious incidents by attacking civilian planes and ships.17 Nuclear weapons allow for massive retaliatory strikes to be launched quickly — potentially too quickly to allow for such situations to be explained and de-escalated.¶ It is perhaps more likely, though, that an accidental war could be triggered by a technological malfunction. Faulty computers and satellites have previously triggered nuclear close calls. As monitoring systems have become more reliable, the rate at which such accidents have occurred has been going down. But it would be overconfident to think that technological malfunctions have become impossible.¶ Future technological changes will likely raise new challenges for nuclear weapon control. There may be pressure to integrate artificial intelligence systems into nuclear command and control to allow for faster data processing and decision making. And AI systems are known to behave unexpectedly when deployed in new environments.18¶ New technologies will also create new accident risks of their own, even if they’re not connected to nuclear weapon systems. Although these risks are hard to predict, they seem significant. I’ll say more about how such technologies — including AI, nuclear, biological, and autonomous weapons — are likely to increase war risks later.¶ Leaders could choose war¶ All that said, most wars have not started by accident. If another great power war does break out in the coming decades, it is more likely to be an intentional decision made by a national leader.¶ Explaining why someone might make such a costly, destructive, unpredictable, and risky decision has been called “the central puzzle about war.” It has motivated researchers to search for “rationalist” explanations for war. In his 2022 book Why We Fight, for example, economist Chris Blattman proposes five basic explanations: unchecked interests, intangible incentives, uncertainty, commitment problems, and misperceptions.19¶ Blattman's Five (Rationalist) Explanations for War¶ This section discusses how great power tensions may escalate to war in the next few decades. It focuses on three potential conflicts in particular: war between the US and China, between the US and Russia, and between China and India. These are discussed because each of these countries are among the world’s largest economies and military spenders, and seem particularly likely to fight. At the end, I briefly touch on other potential large conflicts.¶ Projected real GDP of the US, China, India and Russia according to a 2022 Goldman Sachs analysis Source: Author’s figure using data from: Kevin Daly and Tadas Gedminas, “Global Economics Paper The Path to 2075 — Slower Global Growth, But Convergence Remains Intact,” Global Economics Paper (Goldman Sachs, December 6, 2022), https://www.goldmansachs.com/intelligence/pages/gs-research/the-path-to-2075-slower-global-growth-but-convergence-remains-intact/report.pdf.¶ United States-China¶ The most worrying possibility is war between the United States and China. They are easily the world’s largest economies. They spend by far the most on their militaries. Their diplomatic relations are tense and have recently worsened. And their relationship has several of the characteristics that Blattman identifies as causes of war.¶ At the core of the United States-China relationship is a commitment problem.¶ China’s economy is growing faster than the United States’. By some metrics, it is already larger.20 If its differential growth continues, the gap will continue to widen between it and the United States. While economic power is not the sole determinant of military power, it is a key factor.21¶ The United States and China may be able to strike a fair deal today. But as China continues to grow faster, that deal may come to seem unbalanced. Historically, such commitment problems seem to have made these kinds of transition periods particularly dangerous.22¶ In practice, the United States and China may find it hard to agree on rules to guide their interactions, such as how to run international institutions or govern areas of the world where their interests overlap.¶ The most obvious issue which could tip the United States-China relationship from tension into war is a conflict over Taiwan. Taiwan’s location and technology industries are valuable for both great powers.¶ This issue is further complicated by intangible incentives.¶ For the United States, it is also a conflict over democratic ideals and the United States’ reputation for defending its allies.¶ For China, it is also a conflict about territorial integrity and addressing what are seen as past injustices.¶ Still, forecasts suggest that while a conflict is certainly possible, it is far from inevitable. As of 8 June 2023, one aggregated forecast23 gives a 17% chance of a United States-China war breaking out before 2035.24¶ A related aggregated forecast of the chance that at least 100 deaths occur in conflict between China and Taiwan by 2050 gives it, as of 8 June 2023, a much higher 68% chance of occurring.25¶ United States-Russia¶ Russia is the United States’ other major geopolitical rival.¶ Unlike China, Russia is not a rival in economic terms: even after adjusting for purchasing power, its economy is only about one-fifth the size of the United States’.¶ However, Russia devotes a substantial fraction of its economy to its military. Crucially, it has the world’s largest nuclear arsenal. And Russian leadership has shown a willingness to project power beyond their country’s borders.¶ Country Military spending in 2021 (2020 USD, PPP adjusted)¶ United States 801 billion¶ China 293 billion¶ India 76.6 billion¶ United Kingdom 68.4 billion¶ Russia 65.9 billion¶ Top five countries by estimated military spending, 2021. Source: SIPRI¶ Russia’s 2022 invasion of Ukraine demonstrated the dangers of renewed rivalry between Russia and the United States-led West. The war has already been hugely destructive: the largest war in Europe since World War II, with hundreds of thousands of casualties already and no end to the conflict in sight. And it could get much worse. Most notably, Russian officials have repeatedly refused to rule out the use of nuclear weapons.¶ Unchecked interests and intangible incentives are again at play here. Vladimir Putin leads a highly-centralised government. He has spoken about how his desire to rebuild Russia’s reputation played in his decision to invade Ukraine.¶ Given their ideological differences and history of rivalry, it is reasonable to expect that the United States and Russia will continue to experience dangerous disagreements in the future. As of 8 June 2023, an aggregated forecast gives a 20% chance that the United States and Russia will fight a war involving at least 1,000 battle deaths before 2050.¶ China-India¶ India is already the world’s third-largest economy. If national growth rates remain roughly constant, the size of the Indian economy will surpass that of the United States’ sometime this century. India also has nuclear weapons and is already the world’s third-largest military spender (albeit at a much lower level than China or the United States).¶ One reason to worry that China and India could fight a war is that they already dispute territory along their border. Countries that share a border, especially when it is disputed, are more likely to go to war than countries that do not. By one count, 88% of the wars that occurred between 1816 and 1980 began as wars between neighbours.26¶ In fact, China and India already fought a brief but violent border war in 1962. Deadly skirmishes have continued since, resulting in deaths as recently as 2020.¶ Forecasters agree that a China-India conflict seems relatively (though not absolutely) likely. An aggregated forecast gives a 19% chance of war before 2035.¶ Other dangerous conflicts¶ These three conflicts — United States-China, United States-Russia, and China-India — are not the only possible great power wars that could occur. Other potential conflicts could also pose existential risk, either because they drive dangerous arms races or see widespread deployment of dangerous weapons.¶ We should keep in mind India-Pakistan as a particularly likely conflict between nuclear-armed states and China-Russia as a potential, though unlikely, conflict between great powers with a disputed border and history of war. Plus, new great powers may emerge or current great powers may fade in the years to come.¶ While I think we should prioritise the three potential conflicts I’ve highlighted above, the future is highly uncertain. We should monitor geopolitical changes and be open to changing our priorities in the future.¶ Overall predictions¶ Below is a table listing relevant predictions from the forecasting platform Metaculus, including the number of predictions made, as of 10 March 2023. Note the different timescales and resolution criteria for each question; they may not be intuitively comparable.¶ Prediction Resolution criteria Number of predictions Metaculus prediction¶ World war by 2151 Either:¶ A war killing >0.5% of global population, involving >50% of countries totalling >50% of global population from at least 4 continents.¶ Or:¶ A war killing at least >1% of global population, involving >10% of countries totalling >25% of global population¶ 561 52%¶ World War III before 2050 Involving countries >30% of world GDP OR >50% of world population¶ AND¶ >10M deaths¶ 1640 20%¶ Global thermonuclear war by 2070 EITHER:¶ 3 countries each detonate at least 10 nuclear warheads of at least 10 kt yield outside of their territory¶ OR¶ 2 countries each detonate at least 50 nuclear warheads of at least 10 kt outside of their territory¶ 337 11%¶ When will be the next great power war? Any two of the top 10 nations by military spending are at war¶ “At war” definition:¶ EITHER¶ Formal declaration¶ OR¶ Territory occupied AND at least 250 casualties¶ OR¶ Media sources describe them as “at war”¶ 25th percentile: 2031¶ Median: 2048¶ 75th percentile: 2088¶ Never (not before 2200): 8%¶ No non-test nuclear detonations before 2035 No nuclear detonation other than controlled test¶ [Note the negation in the question. It resolves negatively if a warhead is detonated]¶ 321 69%¶ At least 1 nuclear detonation in war by 2050 Resolves according to credible media reports 476 31%¶ I have previously independently estimated the likelihood of seeing a World War III-like conflict this century. My calculation first adjusts historical base rates to allow for the possibility that major wars have become somewhat less likely, and uses the adjusted base rate to calculate the probability of seeing a war between now and 2100.¶ This method gives a 45% chance of seeing a major great power war in the next 77 years. If the probability is constant over time then the cumulative probability between now and 2050 would be 22%. This is aligned with the Metaculus predictions above.¶ We can also ask experts what they think. Unfortunately, there are surprisingly few expert predictions about the likelihood of major conflict. One survey was conducted by the Project for the Study of the 21st Century. The numbers were relatively aligned with the Metaculus forecasts, though slightly more pessimistic. However, it seems a mistake to put too much stock in this survey (see footnote).27¶ We now have at least a rough sense of a great power war’s probability. But how bad could it get if it occurred?¶ A new great power war could be devastating¶ At the time, the mechanised slaughter of World War I was a shocking step-change in the potential severity of warfare. But its severity was surpassed just 20 years later by the outbreak of World War II, which killed more than twice as many people.¶ A modern great power war could be even worse.¶ How bad have wars been in the past?¶ The graph below shows how common wars of various sizes are, according to the Correlates of War’s Interstate War dataset.28¶ The x-axis here represents war size in terms of the logarithm of the number of battle deaths. The y-axis represents the logarithm of the proportion of wars in the dataset that are at least that large.¶ Using logarithms means that each step to the right in the graph represents a war not one unit larger, but 10 times larger. And each step up represents a war that is not one unit more likely, but 10 times more likely.¶ Cumulative frequency distribution of severity of interstate wars, 1816-2007 Source: Author’s figure. See the data here. Data source: Correlates of War Interwar dataset, v4.029¶ What the graph shows is that wars have a heavy tail. Most wars remain relatively small. But a few escalate greatly and become much worse than average.¶ Of the 95 wars in the latest version of the database, the median battle death count is 8,000. But the heavy tail means the average is 334,000 battle deaths. And the worst war, World War II, had almost 17 million battle deaths.30¶ The number of battle deaths is only one way to measure the badness of wars. We could also consider the proportion of the population of the countries involved who were killed in battle. By this measure, the worst war since 1816 was not World War II. Instead, it’s the Paraguayan War of 1864–70. In that war, 30 soldiers died for every 1,000 citizens of the countries involved. It’s even worse if we also consider civilian deaths; while estimates are very uncertain, it’s plausible that about half of the men in Paraguay, or around a quarter of the entire population, was killed.31¶ What if instead we compared wars by the proportion of the global population killed? World War II is again the worst conflict since 1816 on this measure, having killed about 3% of the global population. Going further back in time, though, we can find worse wars. Ghengis Khan’s conquests likely killed about 9.5% of people in the world at the time.¶ The heavy tail means that some wars will be shockingly large.32 The scale of World War I and World War II took people by surprise, including the leaders who initiated it.¶ It’s also hard to know exactly how big wars could get. We haven’t seen many really large wars. So while we know there’s a heavy tail of potential outcomes, we don’t know what that tail looks like.¶ That said, there are a few reasons to think that wars much worse than World War II are possible:¶ We’re statistically unlikely to have brushed up against the end of the tail, even if the tail has an upper bound.¶ Other wars have been deadlier on a per-capita basis. So unless wars involving countries with larger populations are systematically less intense, we should expect to see more intense wars involving as many people as World War II.¶ Economic growth and technological progress are continually increasing humanity’s war-making capacity. This means that, once a war has started, we’re at greater risk of extremely bad outcomes than we were in the past.¶ So how bad could it get?¶ How bad could a modern great power war be?¶ Over time, two related factors have greatly increased humanity’s capacity to make war. 33¶ First, scientific progress has led to the invention of more powerful weapons and improved military efficiency.¶ Second, economic growth has allowed states to build larger armies and arsenals.¶ Since World War II, the world economy has grown by a factor of more than 10 in real terms; the number of nuclear weapons in the world has grown from basically none to more than 9,000, and we’ve invented drones, missiles, satellites, and advanced planes, ships, and submarines.¶ Ghengis Khan’s conquests killed about 10% of the world, but this took place over the course of two decades. Today that proportion may be killed in a matter of hours.¶ First, nuclear weapons could be used.¶ Today there are around 10,000 nuclear warheads globally.34 At the peak of nuclear competition between the United States and the USSR, though, there were 64,000. If arms control agreements break down and competition resurges among two or even three great powers, nuclear arsenals could expand. In fact, China’s arsenal is very likely to grow — though by how much remains uncertain.¶ Many of the nuclear weapons in the arsenals of the great powers today are at least 10 times more powerful than the atomic bombs used in World War II.35 Should these weapons be used, the consequences would be catastrophic.¶ Graph showing that early nuclear weapons are 1,000s of times more explosive than previous conventional explosives Source: AI Impacts, Effect of nuclear weapons on historic trends in explosives

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By any measure, **such a war would be by far the most destructive, dangerous event in human history, with the potential to cause billions of deaths**.

**The probability that it would, on its own, lead to humanity’s extinction or unrecoverable collapse, is contested**. But there seems to be some possibility — **whether through a famine caused by nuclear winter, or by reducing humanity’s resilience enough that something else, like a catastrophic pandemic, would be far more likely to reach extinction-levels** (read more in our problem profile on nuclear war).

## 2AC

### A2: Space

#### 1. NL - Reject laundry list impacts---no warrants for how each individual one causes extinction AND space colonization doesn’t solve extinction.

Konrad **Szocik 19**, 1/xx/2019, Professor at the University of Information Technology and Management in Rzeszow, Should and could humans go to Mars? Yes, but not now and not in the near future, Volume 105, Pages 54-66. https://www.sciencedirect.com/science/article/pii/S001632871830199X)// JZ

I argue, following other authors (Baum, 2009; Baum, Denkenberger, & Haqq-Misra, 2015; Jebari, 2015; Sandberg, Matheny, & Ćirković, 2008; Turchin & Green, 2017) that **human space settlement is not able to reduce and/or to exclude the risk of human extinction.** For this reason, **it should not be perceived in terms of space refuge. In terms of both short-term and long-term** perspectives of **risk assessment, it would be better to protect humans on Earth.**5 **I reject the supportive role which could be played by human space settlement after a catastrophe on Earth**, i.e., a recovery coordination mission. Due to so-called the paradox of technological progress discussed in the last section, **further putative progress in space technology** will be **counterbalanced by increasing anthropogenic risks** including, among others, overpopulation and limited resources (these anthropogenic threats are unavoidable in near future, in contrast to other risks that are only more or less probable but not unavoidable). Permanent lack of strong rationale for human mission to Mars – both now and in the near future – leads to paradoxical situation. **Even if in some point in the future the minimum level of advancement in human deep-space technologies will be achieved, social, political, and economic contexts will gradually decrease the chances for real preparation of this mission**. Another paradox, let’s call it **the risk dynamics paradox**, is that **the most probable threats in the near future are, as Bostrom** and Cirkovic (2008) **argue**, **anthropogenic threats caused by civilizational and technological progress**. The paradox lies in the fact that **humans are not able to run from these kinds of risks that are rooted in their way of thinking, style of life, and population dynamics**, risks implied by Malthus’ law. The human species can try to protect against natural disaster but not against deleterious effects of its own technological progress. In regard to possible future existential risks, I assume that their deleterious power is a little bit exaggerated, and, in any event, human space settlement is not a right way to cope with them. However, in any case, it is hard to speculate if any human space settlement must repeat the same path of human expansion as it was the case on Earth. It is unclear if human technological expansion and exploration must always lead to deleterious and self-destructive effects. In this paper, I do not discuss ethical and moral concerns which are traditionally considered when discussing the human place in space. They include such topics as the human right to explore space (it means both right to intervene in any extraterrestrial object, and human duty and rationale for space expansionism, mostly in the context of the idea of space refuge and possible catastrophic scenarios on Earth), or the value of human life and space objects.

#### 2. T - Colonization causes restraint reversal --- extinction.

Daniel **Deudney 20**, Political Science Professor at JHU, 12/29/20, “Geography, Geopolitics, and Geohistory,” in Dark Skies: Space Expansionism, Planetary Geopolitics, and the Ends of Humanity, p. 359-60, DOI: 10.1093/oso/9780190903343.001.0001, https://www.jstor.org/stable/27085802?seq=1]

The third way in which ambitious **space expansion could increase** the catastrophic and **existential risks** confronting humanity is **through restraint reversal.** Barring civilizational collapse, **the cornucopia of technological innovation will continue to pour forth its prodigies. If the monstrosities and menaces of the ever-widening technological cone** of possibility **can be thwarted only by staying within a narrow path of human preservation and enhancement, then space expansion** must be **assessed for its effects on the reversals, regulations, and relinquishments constituting the barriers of restraint.** The record with nuclear weapons demonstrates that institutional **architectures of restraint are not easy to erect and sustain on Earth.** If **space expansion makes** the creation and **preservation of restraints even more difficult, the probability of** otherwise unrelated catastrophic and **existential outcomes will rise, making it a potent catalyst for multisided disaster. Instead of mitigating** the effects of multiple catastrophic and **existential risks**, large-scale **space expansion promises to multiply them.**

**There are many reasons to anticipate that restraints** established on Earth **will be reversed if space colonization occurs. Restraints are unlikely to survive transplantation into diverse and demanding off-world environments.** If humans are living on multiple worlds subject to different governments, regulation and relinquishment will be more difficult to establish, **there will be more places for potential breakdowns, and verification of compliance will be vastly more difficult.** If, as seems extremely likely, **the many different worlds** in the Solar Archipelago in systemic anarchy **have violently hostile relations, establishing** and sustaining **restraints will become nearly impossible.** Surveillance in the vast reaches of solar space will be vastly difficult. And **if the human species radiates into multiple species, the barriers** to regulation and relinquishment **will become even more formidable.**

**A particularly dangerous case of restraint reversal may be technologies leading to artificial superintelligence**, a particularly potent technogenic threat. Space **activities are** already **heavily dependent on advanced computing and robotic technologies, and peoples living in space are likely to be far more cyberdependent than those on Earth.** Living in harshly inhospitable environments, **spacekind will have strong incentives to push the development of cybernetic capabilities. If a robust regime for the restraint and relinquishment of ASI is not established, human extinction might occur *before significant space colonization* occurs. If an effective ASI-restraint regime is developed on Earth before extensive space colonization** takes place, **it seems unlikely that** such **restraints would survive the expansion of humanity across the solar system.**

**It might be objected that the breakout of an ASI in some remote world** in solar space **would not pose a general existential threat to humanity once all of humanity’s eggs are no longer in one basket. If**, however, **we take seriously the standard scenarios of what an ASI would do once it emerges,** the **dispersion of humanity across multiple worlds would afford no protection whatsoever because an uncontrolled ASI, it is widely anticipated**, will **in short order expand** not just on the planet of its origins but **across the** solar system, indeed the **galaxy.**26 To the extent **uncontrolled ASI is deemed something to avoid at all costs**, large-scale **space expansion must be viewed similarly.**

**Terrestrial arrangements to restrain nuclear, genetic, and nanotechnologies** are also likely to be **reversed as humanity expands to other worlds.** The prospects of interworld and interspecies wars will provide large incentives for maintaining weaponized nuclear capabilities and for pursuing research into military genetic and nanotechnology applications. Any restraint regime for genetic technologies is unlikely to survive extensive human expansion into space, given the attractiveness of directed and accelerated species alteration in off-worlds. Solar space contains a vast number of islands for potential Doctors Moreau to work their alchemy, as memorably envisioned in Robinson’s 2312. **If selfreplicating nanomachines are possible and built on Earth, human existence will be threatened.** But **if a relinquishment regime is established on Earth, it is unlikely to survive in a solar diaspora. While interplanetary distances will afford a buffer from runaway replicators on other celestial bodies, this is unlikely to be permanently effective**, thus **delaying rather than foreclosing the gray-gooization of the Earth.**

#### 3. T - Mars basing generates new diseases --- extinction.

Kiona Smith-**Strickland 15**, 6/22/2015, A freelance science and technology journalist, Why Scientists Have Been Scared of Space Germs for Almost 50 Years, DOA: 1/01/2021, https://gizmodo.com/why-scientists-have-been-scared-of-space-germs-for-almo-1712562498]

So, **what happens in** the unlikely **event that** those **measures fail, and** the first crewed **mission to Mars sets alien microbes loose on Earth**? We don’t know, and that’s what makes containment so important.

The whole thing could play out like a microscopic version of H.G. Wells’ War of the Worlds, where terrifying Martian invaders are killed off by Earth viruses. If extraterrestrial microbes escape from containment, they might not last long out in the world, where they have to compete with Earth’s own battalions of bacteria and viruses.

Of course we might see the opposite scenario. **Extraterrestrial microbes** might **thrive in Earth’s environment, and** they might **out-compete** many **Earth microbes, just like** today’s terrestrial **invasive species** — which are problematic enough without help from other worlds. **Humans would have no natural immunity to Martian pathogens, and** our **whole species** might be **wiped out.**

Mass grave for Black Plague victims.

So you might think of extraterrestrial microbes as the potential next version of Ebola, which explains the Biohazard Level 4 recommendation.

But humans aren’t the only ones in danger. **Extraterrestrial microbes** could **rapidly wipe out Earth’s other animal species, plants, and microbes.** That might actually be a more horrific scenario: humanity survives, but **all the animals and plants we depend on** for sustenance **die off, or** all **the microbes** that play such a vital role in our environment **are displaced by alien microbes that don’t fill the same roles.** There’s probably an excellent post-apocalyptic novel waiting to be built around that scenario.

#### 4. T - Colonization enables asteroid deflection --- extinction.

Chase **Hamilton 22**, xx/xx/2022, J.D. Duke University School of Law, Space and Existential Risk: The Need for Global Coordination and Caution in Space Development, Vol 21, pg 28-31, https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=1372&context=dltr DOA: 10/28/2022 //ArchanSen]

People often assume a large share of existential risk comes from asteroids.167 Accordingly, asteroid, comet, and meteor detection and deflection receives substantially more funding than research into many other sources of existential risk.168 Scientists have devised creative ways to blast or lure celestial objects off course, some of which are being tested by NASA.169 However, in reality, **the natural risk of extinction via a large asteroid** or meteor strike **is extremely small.**170 Because so many potentially hazardous objects have been detected and their orbits tracked, we have enough data to know that **the baseline probability of an Earth impact in an average century is about one in 1.5 million for asteroids large enough to pose an existential threat** (diameters of ten kilometers or more).171 Better yet, **more than ninety-five percent of asteroids larger than one kilometer have already been detected**, and **none of them** are **on a trajectory with an appreciable chance of colliding with the Earth, bringing the odds of a threatening impact to less than one in 150 million.**172

By contrast, **there is considerable risk in deploying anti-asteroid technology. Any technology capable of deflecting an asteroid away from a collision course with Earth could also be used to move an asteroid into a collision course with Earth**. Carl Sagan and Stephen Ostro make the point that “**premature deployment of any asteroid orbit-modification capability**, in the real world and in light of well-established human frailty and fallibility, may **introduce a new category of danger that dwarfs that posed by the objects themselves.**”173 Indeed, **the odds of extinction by an asteroid guided towards the Earth are almost certainly much greater than one in 150 million.**

The risks from dangerous asteroid orbit-modification technologies are multifaceted.174 **Using asteroid redirection technology, actors may take risky actions that they perceive to be in their self interests but actually have destructive results**175—**an eccentric billionaire** or mining company, **motivated by money**, power, or status, **redirecting an asteroid to the Earth for ease of resource exploitation; a nation**, motivated by a desire to secure geopolitical or ideological advantage, **using an asteroid as a threat or weapon.** Even where efforts are well intentioned, some **risks come from the potential for accidents such as malfunctions or miscalculations of the dangers**.176 Other risks come from coordination problems: disjointed efforts by various actors could inadvertently send an asteroid into an undesired trajectory. Also, **diplomatic concerns may create additional difficulties, such as debates over how to allocate risks between certain countries during the redirection proces**s.177

**Then there is what** Nick **Bostrom describes as “the apocalyptic residual”—the near-guarantee that there are actors who would act in ways that intentionally destroy civilization.**178 Some existential risk comes from the possibility that members of the apocalyptic residual become empowered to destroy humanity.179 Consider that members of Aum Shinrikyo, a Japanese doomsday cult, released anthrax spores from a cooling tower in 1993 in an attempt to start a pandemic, and in 1994 and 1995 carried out high-profile deadly sarin gas attacks.180 After the attacks, police raided the group’s headquarters and were astounded to find weapons-manufacturing technology, a Russian military helicopter, and enough sarin gas to kill four million people.181 Aum Shinrikyo members hold the belief that killing people is a form of saving them from bad karma and aspire to cause a worldwide nuclear Armageddon.182 Members of groups like Aum Shinrikyo have sought to obtain weapons capable of threatening humanity and, if successful, would likely choose to use them.183 Orbit modification technologies could be another tool for misuse and abuse by such apocalyptic groups, especially if such technologies eventually become popularized.184

Because of both deliberate and unintentional perils, **dangerous technologies must be carefully monitored and safeguarded from falling into the wrong hands.** Unless and until we can be overwhelmingly confident that orbit-modification technologies or any other dangerous emergent space technologies are safe enough to allow for use under properly regulated conditions, **there is a need for international coordination to minimize the risks, potentially including restrictions or regulations on specific technology usage and the development of surveillance and enforcement capabilities.** However, the current system of decentralized state supervision set in place by the OST is grossly inadequate for these purposes, in part due to the risk of dangerous activities proliferating under flags of convenience.185

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

Marko **Kovic 18**. Social scientist (PhD in political communication, University of Zurich), co-founder and CEO of the consulting firm ars cognitionis, co-founder and president of the thinktank ZIPAR, the Zurich Institute of Public Affairs Research. 06-12-18. “Political, moral, and security challenges of space colonization.” ZIPAR. https://zipar.org/discussion-paper/political-moral-security-challenges-space-colonization/

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.**

### A2: Climate

#### 1. Reject unwarranted blips --- their impact is a laundry list of claims so don't let them get detailed reexplanations later. No new 2AC cards, otherwise it justifies reading bad impact scenarios to bait impact turns and waste 2NC time because the 1NR can’t respond with new evidence which kills fairness and education.

#### 2. Reject Spector on credibility---only has a bachelor's degree in creative writing AND says 44% of people are impacted, so definitely NOT existential

**3.** **Adaptation is guaranteed, zeroing the impact.**

**Lomborg ’21** [Bjorn; 2021; President of the Copenhagen Consensus Center, Former Director of the Danish Government's Environmental Assessment Institute, PhD in Political Science at the University of Copenhagen, M.A. in Political Science at the University of Aarhus, BA from the University of Georgia; Wall Street Journal, “Climate Change Calls for Adaptation, Not Panic,” https://www.wsj.com/articles/climate-change-adaptation-panic-exaggerating-disaster-11634760376]

It’s easy to construct **climate disasters**. You just find a current, disconcerting trend and **project** it into the future, while **ignoring** everything humanity could do to adapt. For instance, one widely reported study found that **heat waves** could kill thousands more Americans by the end of the century if global warming continues apace—but only if you assume people won’t use more air conditioning. Yes, the climate is likely to change, but so is **human behavior** in **response**.

Adaptation doesn’t make the cost of global warming go away entirely, but it does **reduce it dramatically**. Higher temperatures will shrink harvests if farmers keep growing the same crops, but they’re likely to **adapt** by growing other varieties or different plants altogether. Corn production in North America has **shift**ed away from the Southeast toward the Upper Midwest, where farmers take advantage of longer growing seasons and less-frequent extreme heat. When sea levels rise, governments build defenses—like the levees, flood walls and drainage systems that protected New Orleans from much of Hurricane Ida’s ferocity this year.

Nonetheless, many in the media push **unrealistic projections** of climate catastrophes, while **ignoring** adaptation. A new study documents how the **biggest** bias in studies on the rise of sea levels is their tendency to ignore human adaptation, **exaggerating** flood risks in 2100 by as much as **1,300 times**. It is also evident in the breathless tone of most reporting: The Washington Post frets that sea level rise could “make 187 million people homeless,” CNN fears an “underwater future,” and USA Today agonizes over tens of trillions of dollars in projected annual flood damage. All three rely on studies that **implausibly** assume no society across the world will make any adaptation whatever for the rest of the century. This isn’t **reporting** but **scaremongering**.

You can see how far from reality these sorts of projections are in one heavily cited study, depicted in the graph nearby If you assume no society will adapt to any sea-level rise between now and 2100, you’ll find that vast areas of the world will be routinely flooded, causing $55 trillion in damage annually in 2100 (expressed in 2005 dollars), or about 5% of global gross domestic product. But as the study emphasizes, “in reality, societies are likely to adapt.”

By raising the height of dikes, the study shows that humanity can negate almost all that terrible projected damage by 2100. Only 15,000 people would be flooded every year, which is a remarkable improvement compared with the 3.4 million people flooded in 2000. The total cost of damage, investments in new dikes, and maintenance costs of existing dikes will fall sixfold between now and 2100 to 0.008% of world GDP.

Adaptation is much more effective than climate regulations at staving off flood risks. Compare the two types of policies in isolation. Without any climate mitigation to help, dikes would still safeguard more than 99.99% of the flood victims you’d see if global warming continued on current trends. Instead of 187 million people flooded in 2100, there would be only 15,000. Climate policy achieves much less on its own. Without adaptation, even stringent regulations that keep the global temperature rise below 2 degrees Celsius would reduce the number of flood victims only down to 85 million a year by the end of the century.

Stringent climate policy still has only a mild effect when used in concert with dikes: Instead of the 15,000 flood victims you’d get with only adaptation, you’d have 10,000. And getting there would cost hundreds of trillions of dollars, which is hardly mitigated by the $40 billion drop in total flood damage and dike costs climate regulations would achieve. As I’ve explained in these pages before, this kind of policy has a high human cost: the tens of millions of people pricey climate regulations relegate to poverty.

You don’t have to portend doom to take climate change seriously. Ignoring the benefits of adaptation may make for better headlines, but it badly misinforms readers.

#### 4. Climate wars are empirically denied, capped, and prevented by cooperation.

**Warner 23** [Jeroen Frank Warner, PhD + Associate Professor of Crisis and Disaster Studies at Wageningen University and Research, 10-5-2023, “Rethinking the link between climate and violent conflict over water,” International Development Planning Review, Volume 45, Number 4, p. 383-386, https://doi.org/10.3828/idpr.2023.15]

As climate itself is a heady mix of anthropogenic forcing and chaotic behaviour, we still cannot speak with great confidence about how the system will respond to greenhouse emissions past, present and future; event attribution is fiendishly difficult (e.g. Stott et al., 2016). Climate crisification is based on scenarios about what could go wrong – which is where policy comes in. The implications of climate hazards on overall stability and security however are largely indirect, multidimensional and changing over time (Adger et al., 2014). It is neither a necessary nor a sufficient condition and may not even be the most important source of violence (Ide and Scheffran, 2012). According to Barnett and Adger (2007), environmental degradation caused by climate change undermines human security, therefore raising grievances and lowering opportunity costs for violent behaviour. The **most likely** forms climate change-induced conflicts will take, they claim, are **small-scale**, **subnational conflicts** in **poor**, undemocratic **regions** with a **history of violence** and low climate change-related adaptive capacity. Aggression is caused in large part by the negative emotions of the actors towards someone or society or system as they experience stressful events (Berkowitz and Heimer (1989). However, as Raleigh et al. (2014) have pointedly put it, it is **outrageous** to assume that **hotter weather** makes people **more aggressive**. In fact, warmer spells have seen less violence than cold spells (Tertrais, 2011).

While Hsiang et al.’s (2013) meta-analysis confidently claims to find strong evidence between climate and conflict, Salehyan (2014) more realistically notes that despite the alarmism in the media, the academic field on this is still underdeveloped.

Recently, studies have come out warning of violence induced not by climate but by climate adaptation (Eriksen et al., 2021). The Dutch Clingendael think tank argued there will be more conflict potential due to the 2015 Paris Climate Agreement. The drive to comply with climate goals can have serious collateral damage, such as displacement. Apart from maladaptation, it sees ‘adaptation conflict’ notably due to the increase in hydropower production and biofuel production (Vivekananda et al., 2017). The German think tank Adelphi has developed design criteria for ‘conflict-sensitive adaptation’ (Tänzler et al., 2013).

The water wars thesis predicts war between states or communities as increasing scarcity leads to violent competition; an existential threat to states legitimising extraordinary actions. For classical realists in international relations, the world is anarchic, and states will only cooperate, and respect treaties, if their security is secured (Leb, 2009). For realist analysts, water can’t be high politics, although some have expanded security to include environmental security. But that doesn’t exclude for water to be instrumentalised. Almost every war, including the occupation of the Crimea in 2014 and very recently near Kherson, Ukraine, has seen tactical violence against water installations. An emerging concern is that of the weaponisation of water, whether in the form of hydro-terrorism or of water being taken hostage by rebels. Those engaged in civil war have targeted infrastructure or have taken dams hostage. There also appears to be some evidence that engineers and water infrastructure have been targeted in secretive ‘proxy war’ operations in enemy territory. This is however not a fight over water, but a fight using water.

Water peace: water wars won’t happen?

The above Malthusian climate wars thesis has been countered by an optimistic Cornucopian counternarrative. This idealist/institutionalist counterfactual assumes water wars **don’t/won’t happen**, or at least don’t need to happen. This environmental peace perspective suggests that environmental problems exacerbated by climate change are not sources of conflict; they are not problems but opportunities and can even be **catalysts for coop**eration between individuals and groups (Ide and Scheffran, 2016; Abrahams and Carr, 2017; Abukhater, 2013). As water is life, this reasoning holds, it must inevitably lead to cooperation rather than conflict. Individual and social responses to rising resource competition can not only cause conflict but also lead to adaptive migration, technological innovation and cooperation.

Water pessimism fell out of fashion for some time around the turn of the century, when environmental modernisation became the dominant discourse, arguing that reaching environmental limits makes societies switch to **more rational ways** of **dealing with** water **scarcity**, i.e. **demand management** (e.g. Ohlsson and Turto, 1999). Based on a large historic database, Basins at Risk, Aaron Wolf and his Oregon co-workers showed that water wars haven’t broken out for some **2,500 years**; **coop**eration is the **norm**. Like others, Wolf proposes to zoom in on transboundary basins as integrated ecosystems, overriding political boundaries and sovereignty, and on that basis identify needs in depoliticising water in the process, in this literature the importance of mutual trust building and ‘desecuritisation’ is often foregrounded, as securitisation freezes adversarial relations and sharply reduces potential ‘win-sets’ (Rigi and Warner, 2020). **Countless** projects and trainings were developed to move transboundary basin relations from **conflict** to **coop**eration. Cooperation over transboundary water, it was held, presents possibilities for development cooperation beyond water (Sadoff and Grey, 2002): peace in the water domain is expected to be the starting point for further peacemaking in other domains and in promoting regional integration. The Senegal River Development Organisation is held up as an exemplar of transboundary river benefit sharing (Cooper, 2021). Joint investment has led to multiple ‘**friendship dams**’, and the confidence gained by transboundary cooperation has been hailed as a driver for peacemaking (e.g. Wolf, 2004).

To be sure, in 2018 3.6 billion people had inadequate access to water at least one month per year, an unconscionable human rights infringement. There is however no absolute shortage of water; we make it (seem) scarce: it was already noted at the 2nd World Water Forum in The Hague (2000) that there is enough water to go round; it is poor water governance (especially distribution and access) that creates local scarcities, suffering and tensions. In this sense mitigation of conflict potential would seem to be within reach. As Allan (1997, 1) noted: ‘The optimists are right but dangerous, the pessimists are wrong but useful because they bring attention to the issue’. Not all of the ‘optimistic’ assumptions in his schema have so far been borne out. It doesn’t help that a current water optimism campaign is spearheaded by the chemicals multinational Dupont, who gave us per- and polyfluoroalkyl substances (PFAS) and covered up its toxicity (Richter et al., 2021). There is however reason for some optimism. While some forecasts model a global population growth increase to 13 billion by 2100, others predict a levelling off in the 2060s (Adam, 2021). The rate of poverty, violent conflicts and deadly disaster victims is **trending down**. The mass availability of remote sensing data and ICTs obviates the need to desecuritise water and weather information.

While institutionalists are not entirely sure water wars won’t ever happen, they see institutions, ‘social resources’ (Ohlsson and Turton, 1999), ingenuity and/or technology as the drivers for these turns for the positive. Conflict, it is argued, will happen after sudden shocks that the institutions cannot accommodate. As climate change is expected to exacerbate shocks and stresses to the system, institutionalists propose to increase institutional adaptivity to shocks (both shocks to social infrastructure and between states). European institutions have been put up as an example, having been explicitly designed to rein in excesses of power to prevent a repeat of the tyrannies of the past, though it should be noted that cooperation, such as with the river Rhine Action Plan of 1987, is often triggered by crises and shocks (Kaufmann et al., 2016). Institutionalists believe by clarifying entitlements to resources, exclusion can be counteracted, after Amartya Sen’s capabilities approach, whose starting point is the lack of access to strategic resources (Sen, 1993).

This line of thought is often constructivist, rejecting the materialist assumptions underlying both the Malthusian and critical (Marxist) strands. It recognises that people ascribe meaning to others and to objects, that these meanings are not fixed, and may change this meaning-giving. This meaning can elevate water to an unassailable national interest, as history plays a role in the mythmaking of national identity and interest formation. Yet, when circumstances change, this attribution can also be undone. It thus sees a possibility for actors to change their identity and their perception of the problem, turning enmity into friendship and conflict into cooperation. A constructivist view also takes seriously that ‘scarcity’ and ‘crisis’ are constructs, and can be reconstructed. Stetter et al. (2011) give the example of the ‘new water culture’ in Spain putting a stop to water scarcity as an existential threat. Where this has not happened, as on the Nile, water may still remain at the level of an issue conflict rather than escalate into violence. Faced with the **prospect of crisis**, even hostile parties may **work together** if they face a **common environmental threat** affecting the well-being of each party. This **coop**eration can **prevent** the outbreak of **hostilities** and increase mutual trust, eventually transforming the (adverse) identities of the groups involved (Ide and Scheffran, 2016). There is of course no certainty that the reinterpretation (and transformation) of conflict and identity won’t go the other way!

Julien (2013) laments the tendency to hydrocentric thinking making the conceptual jump from water being essential to life to water being the determinant of all decision-making and politics, let alone the bone of inevitable contention between states. Lopez-Gunn et al. (2013) and others have moreover argued conflict analyses are too water-centric, as the majority of problems are neither created nor solved within the water domain. Many water conflicts are not even about water (Warner and Vij, 2021; Roth et al., 2021; Wateau, 2000), rather, they are **symbolic** of other issues and may escalate in the context of wider socio-political conflict.

#### 5. Warming unlocks Siberia --- arable land attracts Chinese migration.

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

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

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

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

Dima says he is confident that, once the pandemic ends, **more** of his countrymen **will be drawn** to the region, probably **with bigger investors and bigger companies**. “You can’t retreat,” he says, noting that they’ve wagered too much money here. “They will come.” These days, much of the Chinese money is in Vladivostok, a breezy and moneyed port city scattered over rolling hills on the shoreline of the Sea of Japan, about nine hours by jet from Moscow. It’s through here that Chinese companies have begun channeling billions of dollars toward Russian land leases and farm operations, and from here that the farms are shipping thousands of tons of soybeans and corn and wheat south to Chinese cities. By video call from his office’s modern glass-walled conference room at the Russian Far East Investment and Export Agency in Vladivostok, Absamat Dzhanboriev, the agency’s agricultural investment director, describes a steep rise in agricultural production that can come only from large-scale corporate farming. In 2018 more than 900,000 tons of soybeans were exported from the East. Soon, he says, the region will harvest two million tons of soybeans from 3.7 million acres of farmed land — an area roughly the size of Connecticut. And **the more the land warms, the farther north the industry will** be able to **push**, eventually **doubling farmed land** again, producing nearly six million tons or more each year. Chinese money supports 14% of new farm development in the region, more than any other foreign source. Last year, for example, Chinese investors, including a state-owned company, used a Russian subsidiary to start developing 123,000 acres for soy and other crops in an area near Vladivostok and to build a soy-processing plant that would handle 240,000 tons a year. The deal makes the Chinese venture one of the largest private landholders in the Russian east; according to local news reports, it is likely to employ a number of Chinese workers, rely on Chinese technology and sell its products in China. In exchange, Russia says it will earn income tax (after a decade-long abatement) and that a Russian development bank also has a 20% stake in the project. (By law, Dzhanboriev said, such joint ventures are supposed to hire Russians to do at least 80% pof the work.) For now, at least, these deals seem to be pushing the Chinese and Russian governments closer together. The groundwork was laid in May 2015, when Chinese President Xi Jinping agreed to form a $2 billion agricultural fund for trade partnerships in Russia’s east. Investments like these support loans and farming and the construction of badly needed roads and electrical lines in Russian villages like Dimitrovo, while also **opening the literal back door** — Russia’s remote southeastern border — **to China’s colossal** **market**, a market that Putin has coveted. Since then the money has continued to flow, with nearly $14 billion reportedly invested by 2017 across Russia’s resource sectors and another $10 billion pledged by Xi for cross-border infrastructure efforts. This year, the first major bridge linking the two countries across the Amur River was completed.

#### Demographic pressures lead to Chinese state collapse.

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

Despite this treaty of friendship and cooperation, there are indications of potential divergence between China and Russia. When President Xi Jinping took office, he declared his “Chinese Dream” to be “the great rejuvenation of the Chinese nation.” To achieve this goal, Dr. Graham Allison of Harvard’s Kennedy School of Government believes China intends to restore the predominance it enjoyed in Asia before the West intruded by reestablishing control over the territories that the Communist Party considers to be “Greater China” and by recovering China’s historic sphere of influence along its borders and in its adjacent seas. Given Russia’s **historical territorial acquisition of Outer Manchuria** in the 19th century, it is understandable why Moscow remains concerned about China’s long-term strategic designs in the Russian Far East.

Chinese and Russian Demographic Shifts

Alongside Chinese historical territorial claims to the Russian Far East, **China is also experiencing demographic pressures that** could further **fuel its need to expand into Russian territories**. The population of China (1.38 billion) dwarfs that of Russia (144 million) at nearly a 10 to 1 ratio. With around 8 million people living in 2.6 million square miles of territory, **the** Russian **Far East is among the most vacant places on Earth**, at a population density of 3.1 people per square mile, and it is growing emptier, as a national demographic collapse is underway in Russia. Meanwhile, across the border**, the Chinese are rapidly outstripping the carrying capacity of their territory, while the** Russian **Far East is endowed with abundant natural resources** such as **oil, gas, coal, timber, and water,** but lacks the labor and capitol to extract and develop these resources.

Russian Demographics: Peter Zeihan, geopolitical strategist and author of Accidental Superpower, explains that after the Cold War, the Russian Federation experienced a 60% drop in its national birth rate. Today, Russia is experiencing high death rates related to alcoholism. Life expectancy among working-age males, has dropped significantly. A RAND study on Russian demographics suggests that, “The Russian fertility rate has declined to among the world’s lowest, while its abortion rate is the highest. As a result, for the first time in Russian history, the annual number of deaths has **exceeded** the number of births.” Compounding these challenges is a rapidly aging population. These trends comprise a national crisis for Russia. Therefore, if the Russians are going to use military force to shape their future, the clock is ticking before they lose the military force structure to effect change. To stem the tide of depopulation and to secure Russian territorial claims in Europe, Russia has been annexing areas with high ethnic Russian populations, to include parts of Georgia, the Ukraine, and possibly the Baltic states in the future.

Chinese Demographics: China has a much different demographic issue. The Chinese Communist Party (CCP) One Child Policy has resulted in a serious imbalance in the Chinese population pyramid that will create issues with the government’s ability to care for a rapidly aging population. Additionally, China is suffering from a significant gender imbalance where men outnumber women by 34 million as a result of cultural preferences in Asia. The consequences of this gender imbalance are far reaching, and could cause tensions in the emerging security environment as China seeks to alleviate the societal pressures caused by having millions of men who cannot marry. China may seek to alleviate demographic pressures by encouraging Chinese male emigration and potential military expansion into territories that support strategic Chinese interests overseas.

Chinese Immigration into Siberia

Figure 6: Why China Will Reclaim Siberia – “Siberia is as resource-rich and people-poor as China is the opposite. The weight of that logic scares the Kremlin.”

Despite the 2001 Sino-Russian Treaty of Friendship, the Kremlin remains concerned about Chinese immigration into Siberia. Estimates on the number of Chinese migrants presently in Russian Siberia range up to 500,000 in a region with a population of only 36 million Russians. Fears about Beijing’s long-term designs are resulting in strong anti-Chinese sentiments throughout the Russian Federation. A recent Russian film titled, A Deadly Friend, became an internet hit in 2015. The film claims China is preparing to invade the Russian Far East in a quest for territorial expansion. Chinese tanks could reach the city of Khabarovsk within 30 minutes overwhelming the second largest city in the Russian Far East after Vladivostok. Growing Chinese dominance in the region has some commentators calling it a geopolitical time bomb.

Chinese immigration into Siberia presents a source of tension between Moscow and Beijing that is an important facet of the emerging security environment. To a certain extent, there exists a symbiotic relationship between the Siberian Russian population and Chinese immigrants. Since the collapse of the Soviet Union, Chinese immigrants have provided cheap labor and products to the Russian economy in Siberia. However, Siberians complain of the low-quality Chinese products and are fearful of Chinese immigration, competition, and Chinese organized crime. These dynamics are creating tensions between local Siberians and Chinese immigrants.

Although China signed a diplomatic border agreement with Russia, Moscow remains concerned about the prospect of a Sinification of its Far East. Is Chinese “manifest destiny” into Siberia part of a broader effort to reverse the Century of Humiliation and secure access to natural resources? While many Chinese wish to reunite these annexed territories, China’s relations with Russia are more nuanced than its relations with the rest of Asia as it cannot afford to lose a strategic partner at a time when it is deeply engaged in border disputes on multiple fronts throughout Asia. Therefore, the reclamation of Outer Manchuria will likely remain a long-term goal. This strategy is aimed to avoid straining Sino-Russian relations at a time when China is focused on higher-priority territorial disputes throughout Asia, such as Taiwan and the South China Sea.

Russians are concerned about Chinese designs in the Russian Far East. Russian logic is that Beijing could decide to invade on the basis of Chinese historical and demographic claims. This philosophy is exactly the same as the one Russia adopted when it annexed Crimea. Russia is therefore contradicting its own policy by opposing China’s claim over the Russian Far East.

The local Russian population in the Russian Far East is nervous. The 2001 Sino-Russian Treaty of Friendship has done little to reduce the fear that exists between the people who live in Russia and China’s border provinces. Meanwhile, Chinese children are being taught in school that the Russian provinces on the other side of the border, are Chinese. Chinese school textbooks teach them that they were stolen from China during the Century of Humiliation and that these territories will return to China one day in the future, just as Hong Kong and Macau did.

China’s One Belt, One Road Initiative

Sino-Russian tensions are also on display in Central Asia where Former Soviet Union countries that have traditionally been in the Russian sphere of influence are gravitating towards China on the basis of its ambitious One Belt, One Road initiative that aims to revive and expand the ancient Silk Road trade routes linking China with Europe. Russia’s Eurasian Economic Union cannot compete with China’s Belt and Road initiative. Competition and cooperation between China and Russia are clearly visible in Central Asia.

Chinese companies have invested heavily in Central Asia, building roads, bridges and tunnels across the region, making China the dominant economic power. China has already overtaken Russia in terms of trade with the five Central Asian states (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan). China has also redrawn Central Asia’s energy economics, becoming a key consumer of Kazakhstan’s oil production and Turkmenistan’s gas exports. Recently China signed billions in gas and uranium deals with Uzbekistan.

Presently, China holds the upper hand in the relationship with Russia, and this power asymmetry will continue to grow at Russia’s expense. Russia and China have more to gain from cooperation than outright competition. As China becomes more assertive in global affairs, its long-term ambitions with respect to Russia are unclear. China will determine the course for the Sino-Russian relationship while Russia will remain a reactive partner. The Sino-Russian relationship is complex, with mutual mistrust on both sides. Despite ambitions for cooperation, the likelihood of substantive results is uncertain, particularly in the Russian Far East and Central Asia.

Beijing accommodates Russian sensitivities regarding the Belt and Road initiative, which promotes China’s economic dominance in Central Asia. Beijing coordinates most security issues in Eurasia with Moscow, although growing Chinese concerns about instability in Central Asia have increased Beijing’s attention to the region, which may cause friction with Moscow.

Water Scarcity in China

Figure 8: Future Shocks: The Coming Water Wars

Water scarcity presents a looming crisis for China. Another developing trend that will have significant impact on the emerging security environment is the growing water scarcity in Asia. As depicted by the population density chart in Figure 8, China and India are the world’s two most populous countries comprising 40% of the world’s population. The preponderance of fresh water resources supporting human life in China and India are supplied from snowfall and glacial melt coming off of the Hindu Kush and Himalaya mountain ranges. Competition for access to these water resources have already resulted in the Sino-Indian border conflict (see Figure 3).

According to the United Nations, by 2025, 1.8 billion people will be living in countries or regions with absolute water scarcity, and two-thirds of the world’s population could be living under water stressed conditions. With the existing climate change scenario, almost half of the world’s population will be living in areas of water stress by 2030. The main causes of the decrease in fresh water supply is population growth, which is further stressing already limited freshwater resources. The emerging security environment in the next decade will likely see conflicts over water access as one of the central trends in the politico-military environment.

China is home to 20% of the world’s population but only has 7% of the world’s fresh water. According the Chinese media, more than 80% of the underground water in the river basins of China is unfit for drinking or bathing because of contamination from industry and farming. Water is the biggest environmental issue facing China. As recently as 20 years ago, there were approximately 50,000 rivers in China. But now, according to China’s First National Census of Water, more than 28,000 of these rivers are missing. To put this number into context, China’s lost rivers are almost equivalent to the United States losing the entire Mississippi River.

80% of China’s water resources are in **southern China**, while the North China Plain is home to 42% of the Chinese population and only 8% of the country’s water resources, meaning that the **northern provinces suffer from acute water scarcity**. Chinese President Xi Jinping has made water development of the Beijing/Tianjin/Hebei region in the north a Chinese Communist Party (CCP) priority. The water resources of the people living in Northern China are less than the annual water consumption of Saudi Arabia.

The impending water crisis in China will have ramifications far beyond China’s borders. Former Premier Wen Jiabao said that water **shortages threaten**ed **the very survival of the Chinese nation**. A water crisis in China could further fuel Chinese territorial expansion as the CCP seeks to **secure** water **resources** that **will pacify its population and ensure regime stability**. Bordering countries that have access to water resources include Russia to the north, and India, Bhutan, and Nepal to the South. China might soon find itself forced into wars of survival with neighboring countries based on the water scarcity trends that are presently looming on the horizon. Given the **current overpopulation** in southern Asia and ongoing competition over scarce water resources, China is more likely to **turn its attention northward** towards Mongolia and Russia. Considering that Mongolia has limited water resources, Russia will present the most likely target if the water resources within the present Chinese borders can no longer support its population demands.

#### Collapse goes nuclear.

**Francioni 13** [Andrea Francioni, Associate Professor of political science @ University of Siena, 11-5-2013, War of Words. “Chinese Threat” and “Peaceful Development” in the Debate on the Rise of Beijing (1992-2005) (II PART), Storia e Futuro, https://storiaefuturo.eu/guerra-di-parole-minaccia-cinese-e-sviluppo-pacifico-nel-dibattito-sullascesa-di-pechino-1992-2005-ii-parte/]

Given that the “Chinese threat” is characterized in this phase by different nuances (ideological, strategic, economic, military) (Yang 2009, 19), to complete the picture it is necessary to recall another factor that contributes – if possible – to fueling the negative perception of the PRC in Bush's America. In fact, the variant of the China threat linked to the hypotheses of the country's collapse re-emerges in a forceful manner, which would produce territorial fragmentation, civil war and waves of refugees such as to compromise regional stability. The followers of the collapse theory paint a dramatic scenario by adopting the concerns about the sustainability of Chinese growth already expressed by Lester Brown in the middle of the previous decade, but integrating the picture with forecasts as gloomy as they are complacent about the prospects of stability of a regime judged incapable of facing the challenges of modernization. Herbert Yee and Ian Storey have effectively summarized the arguments on which the China collapse theory relies:

Today the Chinese leadership faces a raft of internal problems, including the increasing political demands of its citizens, a **growing population**, a **shortage** of natural resources and a deterioration in the natural environment caused by rapid industrialization and pollution. These problems are putting a **strain** on the central government's ability to govern effectively. Political disintegration or a Chinese civil war might result in millions of Chinese refugees seeking asylum in neighboring countries. Such an unprecedented exodus of refugees from a collapsed PRC would no doubt put a severe strain on the limited resources of China's neighbors. A fragmented China could also result in another nightmare scenario – **nuclear weapons** falling into the hands of **irresponsible** local provincial leaders or **warlords**. From this perspective, a disintegrating China would also pose a threat to its neighbors and the world. (2002, 5).

#### 6. Co2 emissions sustain the carbon cycle --- the converse ensures extinction.

**Moore 16** [Dr. Patrick Moore is a Senior Fellow with the Energy, Ecology and Prosperity program at the Frontier Centre for Public Policy. He has been a leader in the international environmental field for over 40 years. Dr. Moore is a Co-Founder of Greenpeace and served for nine years as President of Greenpeace Canada and seven years as a Director of Greenpeace International. Following his time with Greenpeace, Dr. Moore joined the Forest Alliance of BC where he worked for ten years to develop the Principles of Sustainable Forestry, which have now been adopted by much of the industry. In 2013, he published Confessions of a Greenpeace Dropout – The Making of a Sensible Environmentalist, which documents his 15 years with Greenpeace and outlines his vision for a sustainable future. “The Positive Impact Of Human Co2 Emissions On The Survival Of Life On Earth”, https://fcpp.org/wp-content/uploads/2016/06/Moore-Positive-Impact-of-Human-CO2-Emissions.pdf, June 2016]

All life is **carbon** based and the **primary** source of this carbon is the CO2 in the global **atmosphere**.

As recently as 18,000 years ago, at the height of the most recent major glaciation, CO2 dipped to its lowest level in recorded history at 180 ppm, low enough to stunt plant growth. This is only 30 ppm above a level that would result in the death of plants due to CO2 starvation.

It is calculated that if the decline in CO2 levels were to continue at the same rate as it has over the past **140 million years**, life on Earth would begin to **die** as soon as two million years from now and would slowly perish almost entirely as carbon continued to be lost to the deep ocean sediments. The combustion of fossil fuels for energy to power human civilization has **reversed** the downward trend in CO2 and promises to bring it back to levels that are likely to foster a considerable **increase in the growth rate and biomass of plants, including food crops and trees**.

Human emissions of CO2 have restored a balance to the global carbon cycle, thereby e**nsuring the long-term continuation of life on Earth**.

This extremely positive aspect of human CO2 emissions must be weighed against the unproven hypothesis that human CO2 emissions will cause a catastrophic warming of the climate in coming years.

The one-sided political treatment of CO2 as a pollutant that should be radically reduced must be corrected in light of the indisputable scientific evidence that it is essential to life on Earth.

#### 7. Warming splits the Sino-Russian alliance.

**Calabria 24**, \*Doctorate International Affairs, Professor in the Security Policy Studies Program @ George Washington and a cybersecurity advisor for the Department of Energy. \*\*Doctorate International Affairs. (\*Matthew F. and \*\*William Morrissey, 7-8-2024, “**Climate Change Could Rupture Sino-Russian Relations**,” The Washington Quarterly, 47:2, p. 91-95, DOI: 10.1080/0163660X.2024.2366107)

Climate Change Can Alter Everything

In addition to dismal investment from China and competing interests likely to emerge during the coming decades, **climate change**, food insecurity, and the return to geopolitics have the potential to become sources of discord between Russia and China. The NIC stresses that “no country or region will be immune from the physical effects of climate change and environmental degradation, but the impact will vary—some regions will even see some marginal benefits in the form of longer growing seasons” over many years. 21 One country that may “marginally benefit” is Russia, whose state-backed media has claimed that global warming will induce permafrost melt in the Arctic and Far North regions, improving the country’s land arability and fertility through 2060.22 Experts are mixed on whether climate effects on Russia will be wholly positive. While some studies are neutral about the climate effects on future crop yields in the RFE, another found that wheat productivity in central Siberia will increase substantially up to 2080.23 Furthermore, much of Russia’s vast tundra will experience increases in the availability of **water**, including much of Siberia, the Far North, and northwest regions, suggesting a greater capacity overall for farming and bearing livestock.24

Meanwhile, China is on track to become a major climate loser. Multiple recent peer-reviewed studies have found that climate change and heat waves will degrade future food crop yields in the North China Plain—which supplies more than half of China’s wheat—over the next several decades.25 Other studies find that the North China Plain has become drier over the past two decades and that climate change is already destabilizing agricultural production as a pronounced water shortage “disturbs the stability and sustainability of agricultural production.” 26 Still other academic studies suggest that China can avert catastrophe through improved irrigation.27 Whether or not it does, the implications are clear: China will face grave, persistent challenges in feeding its enormous population as the climate changes. While the future is not wholly predictable, climate science narrows the field of possibilities and likelihoods. Generally, given current trends, it appears that Russia will fare much better than China amidst the effects of climate change.

Sino-Russian optimists might point out here that a sharp drop in China’s food production could bring the two countries closer, arguing that a lack of food in China would stimulate demand for Russian goods. The two countries have already developed a positive trade relationship around agriculture whose momentum shows no signs of decelerating. For example, agricultural outflows from Russia to China increased by around $6 billion, or by 30 percent, from 2021 to 2022.28 In October 2023, Russia agreed to supply China with nearly $26 billion worth of grain, legumes, and oilseeds over the next 12 years as part of the BRI.29 China’s main source of food imports remains the United States, from whom China is seeking to diversify away, portending additional growth with Russia. Chinese authorities have also “actively responded” to opportunities for working with the Russian government to develop northeastern China and the RFE jointly. Russian farmers, for their part, have struggled to overcome local labor shortages and bureaucratic obstacles to hiring foreign workers, suggesting that Chinese migrant workers could meet their demand.30

By these measures, both the Chinese and Russian governments will benefit from strong relations from the present moment into the next decade or so. Russia will maintain a healthy export-based economy; China will keep the lights on and its large population fed. Yet, their symbiotic trade relations now and into the near future belie friction in the 2030s and far beyond. The longterm **climate trendlines**, while far off, **do not bode well** for the bilateral **relations**hip, considering the likely magnitude of future food scarcity in China. While China’s population decline might relieve some pressure from decreasing food availability, the population is not expected to fall below one billion people before 2080.31 As the climate changes before then, China’s food demand will continue to rise while Russia’s wheat production **soars**.32

While demand in China and supply in Russia rises and the two powers might establish an equilibrium, this scenario would position Russia, the crucial supplier, as the state determining the terms for food trade. We can assume that Beijing would not want to provoke the Kremlin without good reason; indeed, Xi is not Kangxi. But Beijing may also not want to rely solely on the whims of fickle Moscow’s export controls to ensure that one billion Chinese people are fed, especially if structural shifts in Russian wheat production fail to meet high Chinese demand in the future.33 Beijing is much more sensitive to downward pressure on agricultural trade than it is to price fluctuations on energy. Overreliance on Russian foodstuffs would prove disastrous for a Chinese Communist Party (CCP) looking to avoid a repeat of the 1959-1961 famine that killed nearly 30 million people and the domestic unrest that would inevitably follow suit. Thus, China will seek a trade strategy that avoids overt antagonism but seeks to exploit opportunities to address its needs if Beijing feels too much pressure to feed its population.

Consistent with the Chinese government’s recent behavior, and in response to the challenge, the CCP could resort to coercion and soft-power initiatives.34 It might seek opportunities to **expand into Russia** because of the pronounced lack of other solutions determined to be realistic by the CCP. The movement of **Chinese laborers** into the RFE has already **incited cross-border tensions** for decades, irking Russia.35 It could **worsen much further** in a future era marked by **warming climates**, vast increases in cross-border migration, and improved farming conditions in Russia. Growing Russian discontent with shifting power dynamics in the wake of China’s rapid economic growth has been coupled with persistent racial animosity that led to exaggerated fears in the early 1990s of a Chinese “farm surge” when some Chinese migrants settled in agricultural land in the border region. Chinese traders, building on China’s growth and geographic proximity, gained substantial market share and Chinese state-owned enterprises have substantial interests in natural resource extraction in the region.36 In the RFE, the arrival of Chinese farmers over many years has increased land prices while decreasing land available for Russians and lowering shares of rented land by Russian farmers.37

While thousands of low-wage Chinese laborers and illegal loggers have resettled in the RFE in recent years, many are transient workers. To be sure, the economic and population decline of the RFE has not encouraged a vast flood of Chinese migrants so far. While numbers are imprecise, as of 2019 there were likely only about 70,000 Chinese citizens living in the RFE, and this population is likely declining.38 This trend is unlikely to continue, however, with climate change. Dispersing a far larger gathering of Chinese laborers across the RFE would be met with **rage**—and probably resistance—by Russians.

While under **increasing climate pressure** in the future, Beijing may encourage ventures into Russian farm country, which could be seen in Chinese government policy circles as a relatively easy solution—perhaps the only solution—to **food scarcity**. Seeing Moscow **weakened** by persistent economic mismanagement and the **demographic aftershocks** of Ukraine, and as unable to defend the Far East that it barely controls now, China could see a unique opportunity for expansion to address its food scarcity on its own terms. While this may seem speculative, it has historical precedent. For example, the Qing dynasty **ceded** over one-million square acres of what is now the RFE to Russia in a pair of treaties in 1858 and 1860, and these losses are entwined with the history of China’s “**Century of Humiliation**,” which underpins Xi’s push for the “Great Rejuvenation of the Chinese Nation.” While reclaiming these territories has not been central to Beijing’s rhetoric, in September 2023, China’s Global Times published a map that showed disputed sites along the Sino-Russian border as part of Chinese territory, and the Chinese Ministry of Natural Resources has ordered the labeling of Chinese maps of the region to show historical Chinese names.39

Despite China’s claims, even a starving China is unlikely to amass forces for a sudden annexation of large swathes of Russian territory. Doing so would invite retaliation that could result in a disastrous war between nuclear-armed states. But whatever method China uses to lay claim to significant Russian territory could **imperil relations with Moscow**. For example, Beijing might instead opt to capitalize on the Kremlin’s weak state authority to erode the status quo, congruent with Chinese gray-zone tactics employed elsewhere such as in the South China Sea. Beijing could, for instance, orchestrate a steady, year-by-year influx of farmers and associated migrant laborers into the RFE. But even this—seizing just enough Russian farmland needed to overcome food scarcity in future China— would rupture **relations with the Kremlin inevitably even without** descending into direct **conflict**. Picture an end-state in which Chinese farming dominates a large swath of Siberia.

The Kremlin would probably not sit idle before that happens. Russian fears of a Chinese surge have already led to restrictive visa and permitting procedures that have limited legal migration, while protective measures have been instituted to prioritize Russian workers and contractors.40 Russia’s economic and population trends are likely to continue downward and the cumulative demographic impact of Russia’s war effort with Ukraine will draw resources, people, and state attention away. As the impact of climate change mounts, the odds are that China will seek to advance its interests increasingly and aggressively—interests that the Kremlin will find difficult to counteract, ignore, or reconcile with domestic priorities. Chinese elites and speculators could, for instance, buy more land fit for agriculture in the RFE, providing offers that they believe would be sufficient for overcoming regulatory hurdles and racism. Chinese migrants, driven out of Chinese agricultural regions, could seek new opportunities to ply their skills. The Chinese government could seek to both aid economic migrants by underwriting their attempts to secure Russian farmland and to quietly support the movement of illegal migrants over the border in unofficial land grabs intended to establish a new status quo.

For Beijing, the stakes will be incredibly high, the options few. Besides expanding into Russia, those other options are unlikely to overcome the potential, far-reaching climate impact on Chinese agricultural production. For example, incursions into Bhutan, where only about 8 percent of the land is arable, are unlikely to generate sufficient food production.41 Neither would China’s successful control of territorial claims it disputes with India, such as the Aksai Chin. Vietnam might contain cultivable land for harvesting rice and raising livestock in great quantities, but like China, it may also face steep falls in food production during the next few decades because of climate change.42 In the South China Sea, China competes with fishermen from the Philippines, Vietnam, Malaysia, Brunei and Taiwan as fishery stocks face collapse.43 Even seizing Taiwan, with its limited farmland, would grant Beijing only sparse natural resources and prove inconducive for feeding China’s massive urban populations. Comparatively, Irkutsk, an expansive Russian oblast near the Sino-Russian border, is agriculturally rich, economically backward, and sparsely populated.44 The RFE saw a population decline of nearly two million people between 1990 and 2010, and Russian state programs to encourage resettlement and promote economic growth have failed to reverse that trend.45

If Chinese migrant farming in the RFE expands, then we can safely assume that Russian grievances will **soar**, especially if the Chinese economic downturn persists and China continues to shun investing in Russia. In response, and by using energy and foodstuffs as bargaining chips, the Kremlin could try to **exert power** over Beijing. We have already seen how Moscow attempted to use natural gas to coerce Eastern European countries into submission and disrupted Ukraine’s grain exports. Ultimately, Russian-style economic coercion could threaten China’s food supplies while rattling markets and increasing prices in developing countries.46 Assuming that the RFE becomes the world’s next major breadbasket one day, the potential weaponization of food resources by the Kremlin threatens to **undermine Moscow’s** tenuous **relations with Beijing** into the far future.

#### Strong Sino-Russian relations create multiplier effects that provoke multi-front great-power war.

**Brands 25** [Hal Brands, PhD History + Professor @ the Johns Hopkins University School of Advanced International Studies, 1-9-2025, "The looming Eurasian menace," The Washington Post, https://archive.ph/C6mna]

Each of these countries aims to overturn the existing order in key regions around the Eurasian periphery. Each sees U.S. power and liberal values as its greatest foes. And what makes the current moment so **precarious** is that these **aggressive powers** are **making common cause**.

China and Russia announced their “no limits” strategic partnership just before Moscow launched its full-scale invasion of Ukraine. They mean, in Chinese President Xi Jinping’s words, to revolutionize the international system by causing “changes the likes of which we haven’t seen for 100 years.” Since that invasion, Russia and North Korea have sealed a formal military alliance; Russia and Iran have built a stronger defense partnership in which technology, weapons and know-how flow both ways. And since Oct. 7, 2023, Russia has provided targeting data and other assistance to

the Houthis in Yemen, who have also acquired missiles and other means of mayhem from Tehran. Most of these relationships aren’t new, but all have grown rapidly in the hothouse global environment created by wars in Ukraine and the Middle East.

To be sure, there is no overarching multilateral alliance — no autocrats’ NATO. Mistrust among the illiberal powers remains pervasive. But their relationships constitute a cohering network of ties among states that are **determined** to **wreck Pax Americana** and command some of the most valuable strategic real estate on Earth. Western observers play down the autocrats’ pacts at their peril, because some of history’s **greatest cataclysms** have been caused by **dysfunctional** — yet profoundly destructive — **alliances**.

Nazi **Germany**, Fascist Italy and Imperial **Japan** never could have coexisted in the long run. **But** before World War II, their cooperation delivered **devastating multiplier effects** by destabilizing governments on several fronts at once. During the early Cold War, a wary alliance between Moscow and Beijing intensified the threats facing the free world. And whether the new autocratic pacts are love matches or marriages of convenience, they are having serious strategic effects.

For one thing, these **relations**hips **encourage aggression** by **reducing its costs**: A heavily sanctioned **Russia** has been able to continue its war in **Ukraine** thanks to the missiles, artillery shells, drones and troops it has received from Tehran and Pyongyang, and the **economic succor** it has gotten from Beijing. Likewise, the pacts increase the danger of war on some fronts by **pacifying others**: Putin can go all-out against Ukraine because he faces no threat from China, just as **Xi can be bolder** in the Pacific because he has a **friendly Russia** at his back. An **autocratic peace** within Eurasia encourages **violent meddling** around its margins.

Autocratic relationships also weaken Western pressure on individual regimes: Russia now shields Pyongyang from sanctions, while Tehran and Moscow develop illicit trade networks beyond U.S. reach. These relationships divide U.S. attention by creating trouble in several places at once. Witness Washington’s agonizing debates over aid for Ukraine vs. support for Taiwan, over hammering the Houthis vs. husbanding missiles for a war with China. Perhaps most fundamentally, autocratic ties are shifting the military balance.

Beijing’s record-breaking buildup has long involved purchases of Russian planes, missiles and air defenses. And **Sino-Russian defense coop**eration is only getting **deeper** and more secretive as the two countries work together to build submarines, helicopters and other key capabilities.

Across Eurasia, in fact, transnational production networks are emerging: Iranian-origin drones are being built in Russian defense plants, where North Korean workers reportedly labor. The autocratic arms trade is burgeoning, as Russia promises to sell **state-of-the-art aircraft**, air defenses and other **advanced capabilities** to its partners. Disruptive military innovation is accelerating, as North Korea receives Russian technology and know-how for its missile and satellite programs. These countries’ militaries are also learning from one another: Iran’s missile and drone attack against Israel in April looked suspiciously similar to Russia’s previous strikes against Ukraine.

If the United States once served as the arsenal of democracy, a modern-day arsenal of autocracy is now taking shape. Russia, Iran, China and North Korea have already managed more defense-technological collaboration than the Axis powers of the World War II era ever did. Even if they never come together in a full-fledged military alliance, they could still deepen their cooperation in dangerous ways.

For example, they could collaborate on more sensitive projects: Russia could support North Korea’s rapidly improving nuclear program or give Beijing its **most advanced** submarine-quieting **tech**nology. Putin could give the Houthis anti-ship cruise missiles to make their attacks more lethal. Russia and China could swap insights on how to use nuclear threats to keep the United States from interfering as they coerce or attack their neighbors — precisely what Putin has done in Ukraine. Or perhaps these countries could find more dramatic ways to cooperate in crisis or conflict.

China and Russia are already conducting military drills in potential conflict zones from the Baltic Sea to the Western Pacific, signaling that one illiberal power won’t sit on the sidelines as Washington fights another. Russia could **aid China** in a future conflict against the **U**nited **S**tates by **conducting cyberattacks** that make it harder for America to mobilize. Or Putin could **menace Europe** by posturing his forces there while the Pentagon is **preoccupied** with a crisis **in Asia**. If any of this seems unlikely, just remember that Western observers have repeatedly been surprised, even shocked, by how far these relationships have already come.

Meanwhile, **closer ties among** U.S. **adversaries** raise the odds that a **war** that starts in one place will **spill into others**. Recall that World War II began not as a global conflict but as a set of regional crises that gradually intensified and became inseparable — just as the United States’ Eurasian crises are becoming sharper, and more interwoven, today.

The United States is still struggling to adapt to this situation. Washington continues to see the world as being divided into separate regions. This assumption is dangerously outdated.

As the Eurasian axis coheres, individual crises take on global meaning. It might be fashionable to talk about pivoting away from Europe to focus on China. But one reason it would be so damaging if America abandons Ukraine, and Russia defeats it, is that this would be a victory for the larger autocratic coalition in its showdown with the democratic world.

The United States also lacks the resources for this new round of rivalry. The U.S. military is designed to defeat only a **single enemy** in a major conflict. U.S. military spending is nearly as low, as a percentage of gross domestic product, as it has been at any time since World War II. Its defense industrial base is in pitiful shape. Yet as hot wars rage in the Middle East and Europe, and a Sino-American cold war intensifies in the Asia-Pacific, the United States could **easily** face conflicts in **two** or more **regions** **simultaneously** — or find itself fighting a rival that is receiving help from other adversaries.

#### 8. Warming allows the US to shore up Arctic deterrence against Russia.

Sascha **Glaeser 22**. former Research Associate for Defense Priorities. “Implications of a melting Arctic. Defense Priorities”. Defense Priorities. 7/14/2022. https://www.defensepriorities.org/explainers/implications-of-a-melting-arctic/

The Arctic is **warming** at twice the rate of the rest of the globe, with ice-free summers predicted by 2034.1 More open water increases navigability within the Arctic making **military** and commercial activity easier. However, this does not fundamentally alter U.S. interests in the Arctic, which include deterring attacks on the United States and NATO allies and ensuring the lawful use of Arctic waters (trade, fishing, and natural resource development). Both can be achieved at minimum additional cost and risk to the United States.

This paper analyzes three key geopolitical issues that may affect the Arctic in the coming decades: (1) militarization, (2) maritime trade, and (3) natural resource development. It also outlines recent regional activity by the United States, Russia, and China and concludes with recommendations for a prudent U.S. Arctic strategy.

Militarization

Both the United States and Russia claim a more navigable Arctic and a changing balance of power requires an increased regional military presence.2 Increased militarization in the Arctic risks leading to a security dilemma, which in turn increases the possibility for war due to miscalculation.

Security dilemmas occur when investments in military capabilities by one country, even if they are intended as defensive in nature, are interpreted as threatening by neighboring states, who subsequently invest in their own capabilities, which spurs the first country to make further military investments—therefore exacerbating a cycle of mutual alarm. Fearing attack, states may attack preemptively—miscalculating and starting a war. Security dilemma dynamics may be already underway in the Arctic. U.S. and Russian officials have publicly expressed suspicion of one another’s military activities in the region, inflating threat perceptions.3

Given the geography and harsh environmental conditions, waging war in the Arctic would be extremely costly and difficult. While the potential for direct conflict in the Arctic remains low—with no inherent reason for nations to go to war—the possibility for miscalculation or that hostilities between the great powers elsewhere in the world spill over into the region remains. For example, Russia’s invasion of Ukraine could escalate to a NATO-Russia war involving an Arctic dynamic.

Arctic military bases and facilities

The United States maintains more than 50 early warning and missile defense radars in Alaska, Canada, and Greenland.

Currently, five Arctic states are NATO members: the United States, Canada, Denmark, Iceland, and Norway. Finland and Sweden, both of whom have hitherto adhered to a policy of military neutrality, recently declared their intention to pursue NATO membership, citing Russia’s **aggression** against non-NATO member Ukraine as the reason. Moscow warned it would take retaliatory measures if either country joined the alliance, further raising regional tensions.4

Maritime trade

More open Arctic waters due to melting sea ice allows for **greater utilization** of the region’s shipping lanes. Three major trans-Arctic maritime trade routes exist; the Northern Sea Route (NSR), the Northwest Passage (NWP), and the Trans-Polar Passage (TPP). The NSR follows the northern Russian coastline, connecting north-eastern Asia with northern Europe. The NWP follows North America’s northern coastline, traversing the Canadian archipelago and connecting the Pacific and Atlantic Oceans. The TPP connects the Pacific and Atlantic by going straight through the Arctic Ocean—currently only possible with icebreaker support.

The opening of the NSR, NWP, and TPP could provide time-efficient and cost-effective alternatives to traditional maritime shipping routes. However, at present container shipping through the Arctic routes is miniscule compared to more traditional Asia-Europe routes, such as the Suez Canal route and the land-based Silk Road rail route. In 2019, the NWP saw 27 transit voyages, with 5 being general cargo ships.5 In 2020, the NSR saw 64 transit voyages, with only 2 being container ships. The remaining 62 vessels carried extracted natural resources or brought cargo to various Arctic infrastructure projects. In comparison, the Suez Canal saw close to 19,000 ships sail through it in 2020, half of which carried containers. Commercial shipping through the TPP has not occurred given the associated challenges of sailing over the North Pole, but the route remains potentially viable in the future should Arctic ice continue to melt.

Trans-Arctic maritime routes

A reduction in the median ice extent increases open water for maritime traffic.

The NSR and NWP both provide a potential advantage in terms of reduced shipping times. A Shanghai-Hamburg trip through the NSR is estimated to take 18 days, compared to 20 days via the land-based Silk Road rail route and 35 days via the Suez Canal route.6 However, transiting Arctic waters continues to pose substantial logistical and technical challenges due to the harsh environment, unpredictable ice accumulation, inadequate transit and communication infrastructure, the lack of search and rescue capabilities, the need for icebreaker support, and high regulatory and liability costs. These factors, among others, will likely preclude the widespread commercial use of the NSR, NWP, and TPP anytime soon.7

Natural resource development

The Arctic is rich in natural resources, including oil, natural gas, minerals, rare earth metals, and fish. Melting ice will allow greater accessibility to these resources. However, while new economic opportunities may entice investments, extracting these resources in harsh environmental conditions still presents significant challenges, limiting the near-term viability of such undertakings.

The Arctic is estimated to contain 13 percent of the world’s undiscovered oil resources (90 billion barrels) and 30 percent of its undiscovered natural gas resources (44 billion barrels of natural gas liquids and 1,669 trillion cubic feet of natural gas). In comparison, the United States maintains 38.2 billion barrels of proved oil reserves and 473 trillion cubic feet of proved natural gas reserves.8 Approximately 84 percent of the undiscovered oil and gas in the Arctic is estimated to be located offshore, meaning receding sea ice increases accessibility.9 Countries have an exclusive economic zone (EEZ) that extends 200 nautical miles from their shoreline, allowing them exclusive rights to the resources on or below the seabed. Countries that have ratified the U.N. Convention of the Law of the Sea (UNCLOS) may extend their EEZ up to 350 nautical miles if they can prove an extended continental shelf.10

Estimated locations of oil and gas reserves in the Arctic

The U.S. Geological Survey estimates more than 80 percent of oil and natural gas reserves are found in seven Arctic basin provinces.

Significant challenges exist regarding oil, gas, and mineral extraction in the Arctic. First, harsh environmental conditions present logistical challenges in moving equipment and personnel to the region. Second, equipment must be able to operate in, and withstand, its severe environmental conditions. Third, thawing permafrost can lead to structures and equipment sinking into the ground. Fourth, long supply lines and intermittent transportation options require companies to maintain larger inventories of parts and supplies on hand in the case of equipment failures, which increases costs. Fifth, transportation and regulatory expenses increase the overall cost of bringing the resource to consumers.11 Additionally, the global shift away from hydrocarbons toward renewable energy, and the potential for low world energy prices in general, may make efforts to extract oil and gas from the Arctic cost-inefficient.

Competing claims on Arctic oil and gas reserves could trigger inter-state disputes; however, most estimated hydrocarbon reserves lie within existing territorial boundaries, with only 4.4 percent of undiscovered oil and 1.6 percent of undiscovered gas estimated in international territory, reducing the likelihood of conflict over these resources.12ARCTIC ACTIVITY

U.S. Arctic activity

The United States is an Arctic country via Alaska, which has a 1,060-mile coastline in the Arctic Ocean. U.S. **Arctic interests** include **protecting** the United States and NATO allies from **attack** and ensuring the lawful use of Arctic waters for trade and natural resource development.

The **U**nited **S**tates has renewed its emphasis on training forces to operate in cold-weather conditions, regularly participating in Arctic NATO exercises, including Cold Response 2022, which saw the participation of some 3,000 U.S. marines.13 In recent years, the **U**nited **S**tates **increased bilateral cooperation** with Norway, the only Arctic NATO member to share a border with Russia. In 2021 Oslo **approved** the construction of U.S. military facilities at three Norwegian airfields and one naval base.14 The **U**nited **S**tates is also reinforcing its military strength in Alaska, stationing 54 F-35 fighter jets at Eielson Air Force Base.15 With two squadrons of F-22’s stationed at Joint Base Elmendorf-Richardson, Alaska is home to more fifth-generation fighter jets than anywhere else in the world, making it relevant to projecting power into the Arctic, Europe, and Indo-Pacific.16

Congress recently appropriated funds for the U.S. Coast Guard to procure six polar icebreakers—three heavy (capable of breaking through 10-foot-thick ice) and three medium (capable of breaking through 8-foot-thick ice). The Coast Guard currently operates one heavy and one medium icebreaker. In comparison, Russia maintains more than 40 icebreakers, while China matches the United States with two.17 As an Arctic nation, a modest increase in the U.S. icebreaker fleet may be warranted to support U.S. coastguard missions and commercial activity; however, the United States does not need parity with the Russian icebreaker fleet (at a cost of tens of billions of dollars), given its far shorter Arctic coast, nor does it need to maintain a quantitative advantage over China’s icebreaker fleet to secure U.S. interests in the region. Russia’s Arctic geography necessitates it maintain a sizeable icebreaker fleet, whereas China seeks the capability to access the NSR without relying entirely on Russian support. Moreover, if needed, the United States can leverage allied Arctic allies for icebreaker support.

The United States does not currently utilize Arctic maritime trade routes to any great extent; however, the NWP in particular provides opportunities to reduce shipping times from its east coast to Asia and its west coast to Europe. Notably, the United States does not recognize Canada’s claim that the NWP consists of internal Canadian waters. The United States must resolve this dispute before widespread commercial use of the route becomes possible.18

U.S. Arctic territory is rich in natural resources, and the U.S. Exclusive Economic Zone there encompasses some 889,000 square miles.19 Alaska’s North Slope contains 6 of the 100 largest oil fields in the United States and one of the largest natural gas fields.20 Further hydrocarbon extraction in northern Alaska, however, has brought with it contentious domestic political battles. The Arctic National Wildlife Refuge (ANWR), for example, is estimated to contain 11 billion barrels of oil; however, environmental advocacy and indigenous groups have strongly protested energy projects in the area. Whereas the Trump Administration put oil drilling leases in ANWR for sale, the Biden Administration suspended all leasing.21

Russia’s Arctic activity

Russia’s Arctic coastline stretches some 15,000 miles from the Barents Sea in the west to the Bering Sea and the Sea of Okhotsk in the east.22 Given the vast exposure of its northern border, Russia seeks to bolster its national defense as ice melts. Russia also aims to increase its economic prosperity through trade and natural resource extraction in the Arctic.

Russia has increased its military presence in the region by refurbishing former Soviet Arctic bases, airfields, and radar installations and stationing modern military assets on them, including ballistic missiles, anti-ship missiles, and missile defense systems.23 Russia’s Northern Fleet is responsible for Arctic operations and maintains its headquarters in Severomorsk on the Kola Peninsula. Defending the Kola Peninsula is a core Russian security interest, as it serves as the home of its ballistic missile submarine fleet, key to its secure nuclear second-strike capability.

Russian efforts to establish multi-layered anti-access, area-denial (A2/AD) capabilities indicate a defensive posture.24 After years of neglect, Russia’s renewed interest in the Arctic signals an attempt to return to the defensive bastion strategy of the Soviet Union, not an unprecedented escalation. As such, Russia seeks to protect its Northern Fleet and secure its nuclear second-strike capabilities, its increasingly accessible northern border, and its economic interests along the NSR. None of these pose a direct threat to the United States. Moreover, modern Russia is much weaker than the Soviet Union—and getting weaker from its invasion of Ukraine—and the United States’ assessment of the threat it poses should reflect this reality.

A key component of Russia’s Arctic economic strategy is the utilization of the NSR to access international markets. Russia claims the NSR as an internal waterway and implements disputed restrictions on foreign naval and commercial vessels.25 Russia’s 2035 Arctic Strategy suggests that Moscow views the utilization of the NSR by Russian companies delivering energy resources to global markets as more viable than international transit. By 2035, Russia projects the NSR to see 130 million tons of throughput, only 10 million of which will consist of international transit.26 Russia’s increased international isolation and the West’s shift away from Russian energy imports following its invasion of Ukraine will undoubtedly affect these predictions.

Russia maintains substantial economic interests in the Arctic. Regional projects account for 10 percent of Russia’s GDP, and 20 percent of its exports are produced there. Natural gas, oil, mineral extraction, and timber are key drivers of Russia’s Arctic economy. Russia extracts more than 90 percent of its natural gas and 17 percent of its oil in the Arctic.27 Russia’s Yamal LNG and its planned LNG 2 projects alone are estimated to produce 37.5 million tons of LNG per year.28 Moreover, Russia’s Arctic territory is estimated to contain $1.5 to $2 trillion of solid minerals such as rare earth metals, diamonds, gold, titanium, quartz, and coal. Russia’s 2035 Arctic Strategy calls for the construction of 21 projects to extract solid minerals to be completed by 2035.29

China’s Arctic activity

In 2018, China released its Polar Strategy in which it claimed to be a “near-Arctic” power despite being 5,000 nautical miles away from the Bering Strait. China was granted permanent observer status to the Arctic Council in 2013 and has subsequently focused on expanding its influence in the region through diplomacy, economic investment, and scientific research. China’s Arctic strategy focuses primarily on the economic opportunities it envisions through the establishment of the Polar Silk-Road, part of its global Belt and Road initiative.

China does not currently have a military presence in the Arctic. U.S. policymakers would be wise to realistically assess China’s Arctic military capabilities and aspirations, making sure not to overstate a potential threat. Chinese submarines currently lack the capability to sail in the Arctic undetected, and while such a development in the future would be unwelcome, the threat it poses would not differ from Chinese submarines already operating elsewhere in the world’s oceans. A hypothetical Chinese threat is further reduced when geography is considered. As a non-Arctic state, China faces the challenge of accessing the Arctic. If needed, the U.S. Navy could cut off China’s access to the region by contesting key straits, such as the Bering Strait separating Russia and Alaska and the La Pérouse Strait separating the Russian island of Sakhalin from the Japanese island of Hokkaido.

To the extent China may seek to utilize the region for security purposes, it will likely come in the form of attempts to gain influence and establish dual-use projects for intelligence gathering.30 China has focused on diplomatic outreach to other Arctic nations by establishing joint research projects and sponsoring Arctic forums.31 China constructed research stations on the Norwegian Svalbard islands in 2003, Sweden in 2016, and Iceland in 2018.32 With deteriorating relations between the West and China, Chinese regional investments have received greater scrutiny. For example, China’s Polar Research Institute offered to buy or rent a Finnish airport in 2018, claiming its intentions were to conduct Arctic research flights over the North Pole. Finland subsequently rejected the offer citing security concerns.33

China seeks to utilize the NSR as a maritime trade route reducing shipping times to Europe. In this pursuit, China has formed a mutually beneficial relationship with Russia by investing in transit and communication infrastructure along the NSR. China is planning to invest in several Arctic ports, including a deep-water port at Arkhangelsk. The port is expected to link with Russian railway networks that could connect the Arctic to Central Asia.34

China is also interested in financing Russian energy projects with Chinese companies having a 20 percent stake in both the Yamal LNG and LNG 2 projects in Russia. Oil and gas reserves in the Arctic have a geopolitical benefit for China, allowing it to receive hydrocarbons from an alternate route if traditional maritime routes in the western Pacific are blocked. China relies heavily on these traditional routes, with an estimated 77 percent of its oil imports and 10 percent of its natural gas imports in 2019 being transited via the South China Sea and the Strait of Malacca.35WHAT DOES A PRUDENT U.S.-ARCTIC STRATEGY LOOK LIKE?

The United States does not need to do more militarily in the Arctic to ensure its security. A restraint-oriented approach that avoids militarizing the Arctic through permanent deployments will allow finite U.S. resources to be deployed to other key regions and lowers the chance of miscalculation. Competition with Russia and China elsewhere in the world should not prompt the United States to exaggerate the threat it faces from either in the Arctic.

U.S. conventional and nuclear capabilities—the strongest deterrent in existence—mitigate the threat of a direct attack on the United States or NATO allies. Conventional deterrence is maintained via the U.S. early warning and missile defense system and the ability to surge forces capable of operating in Arctic conditions to strategic chokepoints, such as the Bering Strait, the Greenland, Iceland, **U**nited **K**ingdom (GIUK) gap, and the Bear gap located between the Svalbard Islands and **Norway**.

Arctic geography dictates that a conventional military deterrent would primarily encompass the **projection of air and naval power**, particularly submarines, of which the United States enjoys a qualitative advantage over both Russia and China—neither of which are currently constrained by the level of ice in the Arctic, particularly submarines.

#### Russian expansionism goes nuclear.

**Klare 20** [Michael T. Klare, Five Colleges Professor of Peace and World Security Studies at Hampshire College + Ph.D. from the Graduate School of the Union Institute, BA and MA from Columbia University + Member of the Board of Director at the Arms Control Association + Defense Correspondent for The Nation, 2/9/2020, “World War Could Break Out in the Arctic”, The Nation, https://www.thenation.com/article/world/nato-russia-norway/]

No matter what the official scenario is like, however, for Pentagon planners the situation will go far beyond this. **Any** **Russian assault** on critical Norwegian military facilities would presumably be preceded by **intense air** and **missile** **bombardment** and the forward **deployment** of major **naval** **vessels.** This, in turn, would **prompt comparable moves** by the **U**nited **S**tates and **NATO**, probably resulting in **violent encounters** and the loss of **major assets** on all sides. In the process, Russia’s key nuclear retaliatory forces would be at risk and quickly placed on high alert with senior officers **operating** **in hair-trigger mode**. **Any misstep** might then lead to what humanity has feared since August 1945: a **nuclear apocalypse** on Planet Earth.

There is no way to know to what degree such considerations are incorporated into the classified versions of the Cold Response 2020 scenario, but it’s unlikely that they’re missing. Indeed, a 2016 version of the exercise involved the participation of three B-52 nuclear bombers from the US Strategic Air Command, indicating that the American military is keenly aware of the escalatory risks of any large-scale US-Russian encounter in the Arctic.

In short, what might otherwise seem like a routine training exercise in a distant part of the world is actually part of an emerging US strategy to overpower Russia in a critical defensive zone, an approach that could easily result in nuclear war. The Russians are, of course, well aware of this and so will undoubtedly be watching Cold Response 2020 with genuine trepidation. Their fears are understandable—but we should all be concerned about a strategy that seemingly embodies such a high risk of future escalation.

Ever since the Soviets acquired nuclear weapons of their own in 1949, strategists have wondered how and where an all-out nuclear war—World War III—would break out. At one time, that incendiary scenario was believed most likely to involve a clash over the divided city of Berlin or along the East-West border in Germany. After the Cold War, however, fears of such a deadly encounter evaporated and few gave much thought to such possibilities. Looking forward today, however, the prospect of a catastrophic World War III is again becoming **all too imaginable** and this time, it appears, **an incident in the Arctic could prove the spark for Armageddon.**