# Impact – Russia War Good – BFHR

Thanks to Micah Wang and Harlan Warnsman for their work on this file, and to Natalie Gao for the revisionism supplement at the bottom of the file. Please email [khirn10@gmail.com](mailto:khirn10@gmail.com) with any questions or concerns.

### Russia War Good---1NC

#### We’d respond to Russian attacks against the US or allies with a devastating counterforce that crushes them

Lonsdale 19 [David Lonsdale is the Director of the Centre for Security Studies at the University of Hull, UK, “The 2018 Nuclear Posture Review: A return to nuclear warfighting?,” *Comparative Strategy* 28:2, pub. online, May 17, 2019]

The important question is: what objectives would the U.S. pursue within a nuclear conflict, and how would they be achieved? It appears that the primary objectives sought would be damage limitation (an important component of warfighting) and the reestablishment of deterrence. This fits with the preliminary qualifying statement to this section of the review, in which it is stated that the U.S. would use nuclear weapons in compliance with the law of armed conflict.86 Indeed, the NPR is at pains to note that nuclear forces would only be used for defensive purposes. One assumes that this rules out counter-value targeting (deliberate attacks against enemy population centers). This leaves counterforce operations as the only option. Strikes against enemy nuclear forces and their command and control, in conjunction with active ballistic missile defenses (BMD), would help ensure damage limitation for the U.S. and its allies.87 A focus on counterforce options is reminiscent of later Cold War strategy, when the U.S. increasingly procured weapon systems with increased accuracy and penetrative capability designed for warfighting. Indeed, Lieber and Press argue that increases in accuracy and remote sensing have enhanced the potency of counterforce options, to the point that low-casualty counterforce options are possible for the first time.88 One can reasonably assume, although it is not explicitly noted in the review, that the restoration of deterrence would be achieved through a combination of intra-war deterrence by denial (as noted above in relation to counter-escalation strategies) and punishment for coercive purposes. Inclusion of the latter is premised on references to “unacceptable consequences” resulting from nuclear attack elsewhere in the NPR. 89 However, in the face of no counter-value targeting, it is reasonable to question how these costs would be inflicted. There are three possible answers, although none of them is discussed in the NPR. First, it may be that the enemy values highly their nuclear forces; so that the loss of them would inflict unacceptable costs. Alternatively, there may be an unwritten assumption that counterforce strikes would inevitably produce “bonus” counter-value damage. Much of the nuclear force infrastructure (including command and control, airbases, etc.) is within or near population centers. Thus, even a limited counterforce strike is likely to have a significant detrimental effect on counter-value targets. This assumption, however, is somewhat thrown into question by the stated desire to procure accurate limited-yield weapons and to operate within the norms of the war convention. Low-yield accurate weapons would be ideal for counterforce missions and would minimize damage to counter-value target sets. Thus, bonus damage is likely to be limited. Finally, although again not explicitly noted in the NPR, perhaps there is a return to the notion of attacking targets associated with political control. Yet again, though, concerns over collateral damage would likely restrict a campaign aimed at the means of political control. We are, thus, left with many questions concerning how the coercive effects of nuclear weapons would be administered. This is problematic, for as Thomas C. Schelling eloquently noted, “The power to hurt can be counted among the most impressive attributes of military force.” 90 It has to be concluded that the uncertainties in this area of strategy reflect either a paradox or incomplete strategic thinking in the NPR. Clarity on these matters would be welcome, especially as it would enhance deterrence credibility still further. Although countervailing is back on the agenda in the 2018 NPR, there is no mention of prevailing in a nuclear conflict. Indeed, the review quotes Defense Secretary Mattis, echoing the early thoughts of Brodie, that nuclear war can never be won, and thus must never be fought.91 This is both curious and disappointing from a warfighting perspective, and speaks to the need for the further development of strategic thinking in U.S. nuclear strategy under Trump. Damage limitation and the reestablishment of deterrence are perfectly admirable goals within the context of nuclear conflict. However, if the U.S. is to achieve its objectives in a post-deterrence environment, it must have a comprehensive theory of victory. Damage limitation and the reestablishment of deterrence are limited negative objectives. They do not provide a positive driving force for the use of nuclear weapons. To reiterate, victory refers to a policy objective that must be achieved in the face of the enemy. And, as Clausewitz reminds us, the will of the enemy must be broken by destroying his ability to resist, or putting him in such a position as his defeat is inevitable.92 If we consider the conditions under which U.S. nuclear weapons could be used, as stipulated by the 2018 NPR, then we can assume that an enemy power (likely Russia, China, North Korea, or a state-sponsored terror group) has launched a substantial attack on either the U.S. or one of its allies. We can think in terms of a Russian assault on the Baltic States, a North Korean attack on South Korea, or perhaps a Chinese invasion of Taiwan. Alternatively, the U.S. may have been subjected to a substantial strategic attack, involving either weapons of mass destruction (including biological or chemical) or a crippling cyberattack. In any of these scenarios, more expansive objectives would be required. As Lieber and Press note, “In some cases, wars may be triggered by events that compel U.S. leaders to pursue decisive victory, conquest, and/or regime change.” 93 Thus, in order to achieve its objectives, the U.S. would variously need to: punish an aggressor to reinstate deterrence; defeat enemy forces for damage limitation or to reclaim lost territory; and, in the North Korean case, presumably overthrow a communist regime. In some of these cases, damage limitation and the reestablishment of deterrence would not be enough. Enemy forces would have to be defeated, removed, destroyed, or coerced (to withdraw from allied territory). Any operations in pursuit of these goals would need a theory of victory built on a detailed understanding of the use of nuclear weapons in the service of military objectives; i.e., nuclear warfighting. This could include defeating enemy nuclear forces for force protection of U.S. and allied conventional forces. Alternatively, U.S. nuclear forces may be required to defeat regionally superior enemy conventional forces. And yet, as previously noted, the NPR rules out a return to nuclear warfighting. This is a significant disjuncture in U.S. nuclear strategy. It is even more curious when one considers the range of modern forces the Trump administration seeks to acquire under the 2018 NPR.

#### We could initiate a strike in 22 minutes --- that would force a surrender

Johnson 17 [Sarah Johnson, Writer for BillTrack50, citing Jeffrey Lewis, director of the East Asia Nonproliferation Program for the James Martin Center for Nonproliferation Studies at the Middlebury Institute of International Studies at Monterey, April 27, 2017, “U.S. Nuclear First Strike Policy; Be Afraid,” <https://www.billtrack50.com/blog/in-the-news/u-s-nuclear-first-strike-policy-be-afraid>]

For example, if Russia launched a nuclear weapon, the US has the 30 minute flight time of the intercontinental ballistic missile (ICBM) to assess their desire to “launch under attack”. The many different steps in the notification process take up about 22 of the 30 minutes; like the time it takes for the missiles to break through clouds, detection of the launch, transmitting different messages, informing the president and authenticating orders to launch. All of this effectively gives the president eight minutes to decide to whether or not to blow up the world. The second situation is a preemptive strike — a first-strike attack with nuclear weapons carried out to destroy an enemy’s capacity to respond. Preemptive strikes can be based on the assumption that the enemy is planning an imminent attack, but don’t have to be. The methodology behind a preemptive nuclear strike is to attack the enemy’s strategic nuclear weapon facilities (missile silos, submarine bases, bomber airfields), command and control sites and storage depots first. By hitting these targets first the enemy will be so wounded with so little of their resources left that they will be forced to surrender with minimal damage to the attacking party.

#### Limited nuclear war won’t cause extinction, but solves future use

**Deudney 18** [Daniel H. Deudney, Associate Professor of Political Science at Johns Hopkins University, March 15, 2018, “The Great Debate,” The Oxford Handbook of International Security, www.oxfordhandbooks.com, doi:10.1093/oxfordhb/9780198777854.013.22]

Although nuclear war is the oldest of these technogenic threats to civilization and human survival, and although important steps to restraint, particularly at the end of the Cold War, have been achieved, the nuclear world is increasingly changing in major ways, and in almost entirely dangerous directions. The third “bombs away” phase of the great debate on the nuclear-political question is more consequentially divided than in the first two phases. Even more ominously, most of the momentum lies with the forces that are pulling states toward nuclear-use, and with the radical actors bent on inflicting catastrophic damage on the leading states in the international system, particularly the United States. In contrast, the arms control project, although intellectually vibrant, is largely in retreat on the world political stage. The arms control settlement of the Cold War is unraveling, and the world public is more divided and distracted than ever. With the recent election of President Donald Trump, the United States, which has played such a dominant role in nuclear politics since its scientists invented these fiendish engines, now has an impulsive and uninformed leader, boding ill for nuclear restraint and effective crisis management. Given current trends, it is prudent to assume that sooner or later, and probably sooner, nuclear weapons will again be the used in war. But this bad news may contain a “silver lining” of good news. Unlike a general nuclear war that might have occurred during the Cold War, such a nuclear event now would probably not mark the end of civilization (or of humanity), due to the great reductions in nuclear forces achieved at the end of the Cold War. Furthermore, politics on “the day after” could have immense potential for positive change. The survivors would not be likely to envy the dead, but would surely have a greatly renewed resolution for “never again.” Such an event, completely unpredictable in its particulars, would unambiguously put the nuclear-political question back at the top of the world political agenda. It would unmistakeably remind leading states of their vulnerability It might also trigger more robust efforts to achieve the global regulation of nuclear capability. Like the bombings of Hiroshima and Nagasaki that did so much to catalyze the elevated concern for nuclear security in the early Cold War, and like the experience “at the brink” in the Cuban Missile Crisis of 1962, the now bubbling nuclear caldron holds the possibility of inaugurating a major period of institutional innovation and adjustment toward a fully “bombs away” future.

#### Striking now is key – otherwise, Russia will continue developments and beat us later with new super weapons

**Schneider 19** [Mark B. Schneider is a Senior Analyst with the National Institute for Public Policy, joined the staff of the National Institute in September 2004 to provide on-site support to the Defense Policy Analysis Office of the Defense Logistic Agency, specializes in missile defense policy, nuclear weapons, deterrence, strategic forces, arms control, and arms control verification and compliance issues, “Russia's Massive Nuclear Weapons Arsenal Is a Threat,” National Interest, May 29, 2019, <https://nationalinterest.org/blog/buzz/russias-massive-nuclear-weapons-arsenal-threat-59947>]

The U.S. mainstream view of Russia has changed quite a bit in the last twenty years, particularly in the last five. We have moved from the fantasy that there was no threat from Russia after the demise of the Soviet Union to a recognition of a serious Russian threat to the U.S. and its allies, including a nuclear threat in the last two years of the Obama administration and the Trump administration. However, characterizing the relationship between the U.S. and Russia as “competition” as it now appears in U.S. Government documents, does not go far enough. Lockheed and Boeing compete; Russia threatens preemptive nuclear attack. It is unilaterally trying to create a sphere of influence in Eastern Europe and the former Soviet states in the classic 19th Century sense while building the largest nuclear arsenal in the world. There is no competition here but rather a serious threat from Russia. Russia and Nuclear Weapons Putin’s economic policies are a disaster for Russia; yet he continues to modernize and expand Russia’s military and nuclear capabilities. In January 2017, Russian Defense Minister General of the Army Sergei Shoigu stated that development of the strategic nuclear force was Russia’s first priority, noting that Russia will “…continue a massive program of nuclear rearmament, deploying modern ICBMs on land and sea, [and] modernizing the strategic bomber force.” The 2018 Nuclear Posture Review report agrees stating, “In addition to modernizing ‘legacy’ Soviet nuclear systems, Russia is developing and deploying new nuclear warheads and launchers. These efforts include multiple upgrades for every leg of the Russian nuclear triad of strategic bombers, sea-based missiles, and land-based missiles. Russia is also developing at least two new intercontinental range systems, a hypersonic glide vehicle, and a new intercontinental, nuclear-armed, nuclear-powered, undersea autonomous torpedo.” Secretary of Energy Rick Perry and National Nuclear Security Administration Director Lisa Gordon-Hagerty in April 2019 told the Senate Armed Services Committee, “[Russia](https://m.washingtontimes.com/topics/russia/) and [China](https://m.washingtontimes.com/topics/china/) are investing massive resources into upgrading and expanding their nuclear arsenals, all at a time when they seek to challenge U.S. interests and unravel U.S. alliances around the world.

#### Russia is developing genetically-engineered super soldiers – makes the future war unwinnable and causes extinction

**Holloway 16** [Henry Holloway is the Chief Reporter at Star Online, cites Bob Work, the deputy secretary of defense at the Pentagon and US Air Force Colonel Dave Shunk, Star Online, 2016 "Dawn of the super soldier: Russia 'creating steroid-fuelled bionic warriors for battle'"]

Top American military chiefs have warned Moscow is working to create “enhanced human operations” technology which they say “scares the crap out of us”. Super-soldiers are fast becoming a reality as armies across the world search for ways to beef up their troopers to make them stronger, faster, and more deadly. But while [most future weapons are based around robotics, lasers and exoskeletons](https://www.dailystar.co.uk/news/latest-news/533525/Super-Weapons-Future-Tech-Energy-Weapons-Cyber-Attacks-Aircraft-Nuclear-World-War-3), defense bigwigs in the United States believe Russia is going one step beyond to create the ultimate super soldier. Military science experts have predicted super soldiers could be very close to the horizon and Russia could be leading the way. Steroids and other performance enhancing drugs can be pumped into soldiers bodies to make them tougher on the battlefield. The drugs would allow troops to march for longer distances faster, carry more gear, and fight more fiercely in close combat. Brain implants can also be embedded into soldiers heads to allow them to shoot with better aim or be more susceptible to orders. Microscopic technology could also be implanted into men which would fix their wounds on the battlefield without need for a medic. Bionics could also be used to allow men to control machines or extensive prosthetics with their minds. Pentagon commander Bob Work, the deputy secretary of defense, said: “Our adversaries, quite frankly, are pursuing enhanced human operations. And it scares the crap out of us, really.” The former artillery battalion commander said the US is working on tech to assist soldiers such as exoskeletons– as opposed to the suggested biological Russian gear to enhance soldiers. He added the United States is facing a “big, big decision on whether or not we are comfortable going that way" in a speech. America’s secret science DARPA division is already exploring the tech needed to create super soldiers. Their scientists have researched mind-altering pain vaccines, drugs which mean soldiers can stay awake for longer periods, and microscopic magnets which would seal wounds in the wave of a hand. Russia’s [superhuman schemes extend to their athletes where a state-sponsoring doping programme landed them in trouble](https://www.dailystar.co.uk/news/latest-news/531215/Rio-2016-Putin-Russia-Olympics-prank-doping-scandal) at the Olympics. Maria Sharapova was caught out using the drug Meldonium – which the Soviet Union used to bolster their soldiers during the Cold War. The pharmaceutical was unwittingly necked by Russian troopers during the superpower’s invasion of Afghanistan after being given it by military chiefs to boost their endurance. The drug’s inventor Ivar Kalvins told a Latvian newspaper in a 2009 interview “They were all given meldonium. They themselves were not aware they were using it. No one was being asked if they agree to it back then”. Russia is not the only power to have been experimenting with superhuman technology – as America said they suspect China could also be working on “enhanced human operations”. Nazis during World War 2 also used performance enhancers to boost the Third Reich’s soldiers – using pills based on Crystal Meth to make them fight longer as they stormed across Europe. The British Ministry of Defence is looking into the feasibility of super soldiers in the next 30 years according to papers made public in 2013 – featuring augmented bodies and even telepathy by signalling from electronic chips in their brain. US Air Force Colonel Dave Shunk, now retired, described the possibilities of America’s war against supermen in a report about soldiers of the near future. He wrote: “The Army must come to terms not only with creating—or fighting against—enhanced soldiers but also with understanding the unforeseen ethical challenges He added: “The soldier of the future likely will be enhanced through neuroscience, biotechnology, nanotechnology, genetics, and drugs.” Stephen Hawking has warned [humanity's pursuit of deadlier weapons and new technology could lead to arms race](https://www.dailystar.co.uk/news/latest-news/526324/Stephen-Hawking-professor-robots-nuclear-drones-world-war-3-war-terminator-AI) which would spell our doom. Moscow archives also show a superhuman programme as early as the 1920s. Allegedly soviet dictator Stalin told scientist Ilya Ivanov “I want a new invincible human being, insensitive to pain, resistant and indifferent about the quality of food they eat.” The Kremlin passed a request to Russia’s top scientists to create a “living war machine”.

#### Russia is developing military AI – causes extinction

Rybarczyk 21 [Katarzyna Rybarczyk is a Political Correspondent for Immigration News, a media platform affiliated with Immigration Advice Service, "Russia’s Weapons of the Future: How AI Could Escalate Global Conflicts", Geopolitics, https://thegeopolitics.com/russias-weapons-of-the-future-how-ai-could-escalate-global-conflicts/] GBS-HW

Vladimir Putin once said ‘Whoever becomes the leader in AI will become the ruler of the world.’ In recent months, it has been evident that Russia is dedicated to surpassing other countries in the development and use of AI for military purposes.

Russia has been working on developing robots equipped with artificial intelligence that would be capable of fighting independently. Finally, on May 20, Russia’s defence minister Sergey Shoygu announced that the country has launched mass production of the new weapons.

As the Russian military is becoming more sophisticated, other countries also make substantial investments in AI. It seems, therefore, like the world is facing an AI arms race that risks disrupting international peace and stability.

Russia’s concerning technologies

The combat robots that are the newest addition to the Russian military will be able to assess a combat situation and react accordingly. They will be faster and more accurate when attacking targets than human fighters. Russian officials say that by 2025 they hope to substitute a significant proportion of regular soldiers with machines and deploy an army composed solely of robots into some combat operations.

The robots are not the only AI-dependent weapons that Russia has developed. The country has been manufacturing a new type of technologically advanced helicopter drones that can be used to eliminate opponents’ drones. Russia also has been working on producing surface and underwater vehicles equipped with a high level of Artificial Intelligence.

The main threat of the Russian military placing a great effort on developing AI-controlled weapons is integrating AI into nuclear command. Such a scenario would increase the risk of conflicts between nations escalating to nuclear use.

Are we facing a military AI arms race?

Russia is not the only country that has been putting more emphasis on developing AI-driven weapons. In fact, it can be argued that the main reason for the escalation of Russia’s efforts to manufacture them has been the need to keep up with the two frontrunners in the field, the US and China.

China has a goal of becoming the global leader in AI research by 2030, and the US has been a proponent of using AI for military purposes for over 60 years. Both the US and China have been producing AI-powered weapons such as target recognition systems, AI-enhanced drones, and cyberattack programmes that do not require human intervention.

When one power increases investment in AI, others feel threatened and also endeavour to make their weapons more sophisticated. In turn, the never-ending cycle of trying to prove their superiority over others challenges global stability and risks escalating conflicts between nations.

The rapidly advancing AI arms race is evident. For years, the field was dominated by the US and China. Now, however, Russia is realising Putin’s ambition and is gradually becoming the most prominent developer of AI-dependent weapons.

Using AI on the battlefield might come at a price

AI can be used to conduct complex military operations, including underwater ones, without putting soldiers’ lives at risk. In theory, it can do a lot of good and prevent innocent lives from being lost. In practice, however, it represents a new type of global threat.

‘Lethal autonomous weapons – machines with the power to kill on their own, without human judgment and accountability – are bringing us into unacceptable moral and political territory’, said Antonio Guterres, UN Secretary-General.

None of the countries wants to fall behind so the AI arms race is only intensifying and technologically advanced weapons that were once viewed as sci-fi are being invented.

AI-controlled weapons have the potential to be extremely destructive. There are no humans involved in operating them, so armed conflicts can quickly reach epic proportions. Furthermore, when AI is responsible for making decisions on the battlefield, instances of lethal force being used unjustifiably are likely to happen.

Concerns have been raised about the possibility of ‘AI undermining human control and states manufacturing AI-controlled weapons lacking ethical self-restraints’, Breaking Defense reported.. Hence, it is imperative that the international community keeps an eye on Russia’s grand AI-related ambitions and intervenes when the military AI race starts posing a tangible existential threat to humanity.

#### Russia is developing directed energy weapons---in the future, they’ll overtake the US

Atherton 20 [Kelsey D. Atherton is a defense technology journalist, "Russia Working On Directed Energy Weapon", Forbes, https://www.forbes.com/sites/kelseyatherton/2020/07/14/russia-working-on-directed-energy-weapon/?sh=16998423287b] GBS-HW

Since humans have bent electricity to war, there has been a hunt for a special weapon that renders the technology particularly useless. Lurking in the annals of weapon design, and periodically re-emerging as a novel solution to some new machine, exist tools that target electronics, and electronics only.

Early in July, Russian media described a weapon that roughly fits into this tempo, using the phrase “EMP cannon.” EMP, or electro-magnetic pulse, is a real, observable phenomenon, but the primary way to produce the effect at scale is to use a nuclear weapon. When the nuke is detonated low to the ground, an electromagnetic pulse is one effect of many, limited in range and whose effect is largely overshadowed by the fire and death of the nuclear blast. When the nuke is detonated at high altitude, in the lower reaches of space, the pulse can travel quite a distance, though the effect is mitigated by hardening of second-strike nuclear weapons and the almost certain nuclear retaliation that would follow.

This Russian EMP cannon is neither of those effects, which makes the moniker vexing. Instead, the weapon as described more closely resembles microwave guns, a kind of directed energy weapon that’s seeing modern usage as an anti-drone tool.

In that sense, the weapon can be seen as “an extension of Russia's pledge to develop breakthrough capabilities to counter what they perceive as the current Western overmatch in hi-tech and [Precision-Guided Munition] weapons,” says Samuel Bendett, adviser to the think tank CNA’s Russia program, who specializes in Russian unmanned military systems.

Creating a directed energy weapon that can specifically disable drones is one way to leap-frog into the future of war, as human-piloted and robotic aircraft look to contest skies filled with hostile machines. TASS notes that such a weapon is expected to be incorporated in the remotely piloted version of any sixth-generation fighters Russia produces.

“The cannons as described would also fit into Russia's overall counter-drone research, development, testing, and evaluations,” says Bendett. “This work is carried out as an extension of Russia's counter-drone lessons learned from its Syria experience, as well as part of defense against Western high-altitude drones that currently conduct surveillance missions near Russian borders.”

Whatever the nature of the anti-electronics weapon actually being developed, the future of war is likely to see far more new energy weapons, put to familiar use.

#### Extinction---outweighs nuclear war

Del Monte ’21 [Louis; March; CEO of Del Monte and Associates and has more than thirty years of experience in physics, technology, and engineering, was a leader in the development of microelectronics and sensors for IBM and Honeywell for over 30 years; “The Game of Cat and Mouse,” War at the Speed of Light: Directed-Energy Weapons and the Future of Twenty-First-Century Warfare, U of Nebraska Press, p. 13-64]

A new revolution is coming in warfare, and, if you will pardon the pun, it is coming at the speed of light. This revolution concerns the emergence of directed-energy weapons, which promise to be even more potent than nuclear weapons. If you are skeptical about this statement, let me relate a scenario involving a laser as a weapon to provide insight into the potency of directed-energy weapons.

Imagine a land-based laser capable of generating the power equivalence of a nuclear weapon. Now imagine bouncing the laser’s beam off a satellite's mirror and reflecting the beam to hit a target anywhere on Earth. What would its effect be on the target? The target would become plasma, the fourth state of matter, a jumble of excited nuclei, atoms stripped of their electrons. All life and structures within the diameter of the laser beam would be destroyed. Next, imagine the target is the city of Beijing. In an instant, 21.5 million people would die. In another fraction of a second, the laser could attack another target; in a minute, it could destroy China. I only used Beijing and China as an example. The same scenario would hold for New York City and the United States, or for any city and any country.

If you are incredulous, let me give you some facts. Numerous countries around the world are making powerful lasers for military purposes, and their ultimate goal is to make them as powerful as a nuclear weapon. Although we have a long way to go, the United States is actively building the world's largest continuous laser at the National Ignition Facility (NIF) of the Lawrence Livermore National Laboratory (LLNL).22 The LLNL website states, “NIF enables scientists to create extreme states of m atter [using a laser], including temperatures of 100 million degrees and pressures that exceed 100 billion times Earth’s atmosphere, NIF supports national security, fundamental science, energy security, and national competitiveness missions.”

## Offense

### AI Outweighs---2NC

#### AI outweighs nuclear war

**Turchin and Denkenberger 18** [Alexey Turchin is a researcher at the Science for Life Extension Foundation, and David, Denkenberger is with the Global Catastrophic Risk Institute (GCRI) @ Tennessee State University, Alliance to Feed the Earth in Disasters (ALLFED), May 3, 2018, “Classification of Global Catastrophic Risks Connected with Artificial Intelligence,” AI & SOCIETY, pp. 1–17]

According to Yampolskiy and Spellchecker (2016), the probability and seriousness of AI failures will increase with time. We estimate that they will reach their peak between the appearance of the first self-improving AI and the moment that an AI or group of AIs reach global power, and will later diminish, as late-stage AI halting seems to be a low-probability event. AI is an extremely powerful and completely unpredictable technology, millions of times more powerful than nuclear weapons. Its existence could create multiple individual global risks, most of which we can not currently imagine. We present several dozen separate global risk scenarios connected with AI in this article, but it is likely that some of the most serious are not included. The sheer number of possible failure modes suggests that there are more to come.

#### Greatest existential risk

Talks 16 [Martin, has twenty years’ experience in the digital technology and communications sectors, runs the company Matomico, a consultancy that helps companies and organisations with digital transformation and innovation initiatives, and aims to demystify the world of advanced technology, also cites Stephen Hawking, Bill Gates, and Elon Musk, “A Marketer’s Guide to Artificial Intelligence”, March 2016]

“Success in creating AI would be the biggest event in human history,” said Stephen Hawking in The Independent in 2014. “Unfortunately, it might also be the last, unless we learn how to avoid the risks.”11 In an interview with the BBC he added: “Humans, limited by slow biological evolution, couldn’t compete and would be superseded by AI.”12 Elon Musk called AI “our greatest existential threat” in a 2014 interview with MIT students at the AeroAstro Centennial Symposium. “I’m increasingly inclined to think that there should be some regulatory oversight, maybe at the national and international level, just to make sure that we don’t do something very foolish.”13 Musk has invested in a number of AI technologies through startups including DeepMind, acquired by Google for the rumoured sum of $400m (£285m) in 201414, and claims this is as a means to “just keep an eye on what’s going on with artificial intelligence”15. Bill Gates has also expressed concerns about AI. During a Q&A session on Reddit in January 2015, Gates said: “I am in the camp that is concerned about super intelligence. First the machines will do a lot of jobs for us and not be super intelligent. That should be positive if we manage it well. A few decades after that though the intelligence is strong enough to be a concern. I agree with Elon Musk and some others on this and don’t understand why some people are not concerned.”16 In July 2015, Stephen Hawking, Musk and more than 1,000 AI and robotics researchers signed a letter asking for a ban on AI warfare, warning of the potential for rampant destruction at the hands of autonomous weapon systems, which can select and engage targets without human intervention. “AI technology has reached a point where the deployment of such systems is — practically if not legally — feasible within years, not decades, and the stakes are high: autonomous weapons have been described as the third revolution in warfare, after gunpowder and nuclear arms,” the letter said.

### AI Development---2NC

#### Development is at an all-time high.

Dr. Sanur Sharma 22, Associate Fellow at Manohar Parrikar Institute for Defence Studies and Analyses, “Russia’s AI Enabled Military Ecosystem and Its Algorithmic Warfare,” https://www.idsa.in/idsacomments/russias-ai-enabled-military-ecosystem-ssharma-160322/micahw

Russia is spearheading its AI strategy with heavy investments in military, state-sponsored actors and the private sector. It has been stated that with Russia’s increasing adoption of futuristic technologies and modern battlefield capabilities, the US might be outmatched in the areas of armour, artillery, air defence, space and cyberspace.2

Russia’s AI strategy gained momentum in 2014 when the Russian Ministry of Defence (MoD) adopted the concept for the use of Robotic Systems for military use by 2030, with 30 per cent of combat power being robotised to partial or complete autonomy. In 2016, the strategy of scientific and technological development of the Russian Federation was approved with the priority on the creation of systems for Big Data, AI and ML. In 2017, Russia launched its AI-enabled virtual assistant Alice by Yandex and a cooperation agreement was signed between Yandex and Gazprom Neft to implement machine learning projects in the oil industry.3 The same year Vladimir Putin declared that “whichever country becomes the leader in artificial intelligence (AI) will become the ruler of the world”.4 Despite this, Russia is still behind when compared to US and China in terms of AI capabilities, according to a report by the US government-funded Center for Naval Analyses.5 Russia was not a leader in communication networks but used this technology for weaponising itself for advanced cyber capabilities and became a leader. Considering Russia’s capabilities in advanced weapon systems, it is likely that it will soon be a leader in AI-enabled warfare. In 2018, the Russian MoD hosted a joint conference with the Ministry of Education and Science and the Russian Academy of Sciences, which led to the 10-point statement that specifically focuses on innovative and AI-driven solutions.6 In 2019, another initiative was led by the Russian government for National Strategy for the Development of AI with AI Federal Project inclined towards the private sector. The AI Roadmap drafted by SberBank estimated an investment of US$ 5.13 billion, which was later revised to US$ 3.83 billion.7

In 2021, the Russian President again stated that 2021 will be the year of Science and Technology in Russia with a breakthrough in technology, economy and social progress.8 In the modernisation of Russian armed forces, AI has been highlighted as a priority for integrating autonomous and robotic weapon systems. For this, the National Defence Management Centre has been established to set up coordination between various military units.9

#### Russia is scaling up its AI development – will rival the United States

Tadjdeh 21 [Yasmin Tadjdeh is a Defense Reporter, “Algorithmic Warfare: Russia Expanding Fleet of AI-Enabled Weapons”, National Defense, <https://www.nationaldefensemagazine.org/articles/2021/7/20/russia-expanding-fleet-of-ai-enabled-weapons>] GBS-HW

Russia — which has made no secret of its artificial intelligence ambitions — is building a cadre of AI-enabled, autonomous weapon systems that could one day threaten the United States.

“The Russian military seeks to be a leader in weaponizing AI technology,” Lt. Gen. Michael Groen, director of the Pentagon’s Joint Artificial Intelligence Center, told National Defense.

The JAIC — which has been working to facilitate AI adoption across the Defense Department since 2018 — recently commissioned a report by CNA, a research organization based in Arlington, Virginia, to examine Russia’s developments.

The report — titled “Artificial Intelligence and Autonomy in Russia” — identified more than 150 AI-enabled military systems in various stages of development, Groen said in an email in June. Key areas of interest include autonomous air, underwater, surface and ground platforms.

The nation wants to use AI for electronic warfare, intelligence, surveillance, reconnaissance and strategic decision-making processes as leaders pursue information dominance on the battlefield, Groen said.

While Russia is not a leader in commercial and academic AI research — as the United States and China are — it would be a grave mistake for the Pentagon to take its eyes off the threat, he said.

“Russia was not a major leader in the development of the internet or computer networking, but Russia has become a leader in weaponizing those technologies for advanced cyberattacks and cybercrime capabilities,” he noted.

The Russian military has taken significant steps to reform and improve the organization of its research and development enterprise, he noted. This was done in part because Moscow believed its previous structures were stifling innovation in technology areas such as AI.

The scale of these reforms — such as creating a new advanced R&D organization modeled on the Pentagon’s Defense Advanced Research Projects Agency — demonstrates the nation’s seriousness about fielding an AI-enabled fighting force, he said.

Vice Chairman of the Joint Chiefs of Staff Gen. John Hyten noted that Russia has invested enormous resources into the development of artificial intelligence, big data and software technologies.

The country is moving quickly across many areas, including nuclear weapons, space and cyber, he said during remarks at the Defense Department’s AI Symposium in June. Embedded in each of those elements is new software, processing and artificial intelligence systems.

“Russia is a significant threat, especially in the near term,” he said. “It is a challenge to not just keep up with them but stay ahead of them.”

Like the United States, Russia is working to digitize its military. Its Ministry of Defense recently announced it intends to create a specialized department to develop AI, according to the CNA report. It is even working on developing a military information sharing structure that resembles the Pentagon’s joint all-domain command and control, or JADC2, effort.

#### Pentagon reports prove.

Ronald Watkins 21, Author at The Defense Post citing Lt. Gen. Michael Groen, Director of the Joint Artificial Intelligence Center, NOT the QAnon conspiracy theorist, “Russia ‘Weaponizing’ AI: Pentagon Intelligence Report,” https://www.thedefensepost.com/2021/07/21/russia-weaponizing-ai/micahw

Russia is on the fast track to developing a range of autonomous weapon systems in a challenge to US military dominance, according to a report commissioned by the Pentagon’s Joint Artificial Intelligence Center (JAIC).

“The Russian military seeks to be a leader in weaponizing AI technology,” JAIC director Lt. Gen. Michael Groen recently told National Defense.

AI in Russia

Titled Artificial Intelligence and Autonomy in Russia, the report details more than 150 AI-enabled military systems at various points of development in the country, including autonomous land, sea, air, space, and cyber platforms.

The goal of these platforms is “information dominance on the battlefield,” according to Groen, something the agency considers a potential threat to America and its allies.

“Russia was not a major leader in the development of the internet or computer networking, but Russia has become a leader in weaponizing those technologies for advanced cyberattacks and cybercrime capabilities,” Groen noted.

Ratcheting up Development

According to Gen. John Hyten of the Joint Chiefs of Staff, Moscow has recently accelerated its investments in big data, software, and artificial intelligence.

The country has rapidly accelerated development in areas such as cyberspace, next-gen nuclear weapons, and space, he explained at a June Defense Department AI Symposium. Enhanced AI systems feature prominently in this multi-pronged military approach.

“Russia is a significant threat, especially in the near term,” he said. “It is a challenge to not just keep up with them but stay ahead of them.”

#### AI weaponization is Russia’s top priority---proven by direct quotes from Putin.

Natalia Slavina 21, Grand Reporter for the Regional Voice Magazine, “Artificial intelligence may cause breakthrough to improve weapons' parameters — Putin,” 11/3/21, https://tass.com/defense/1357611/micahw

The use of artificial intelligence in the armed forces is acquiring top priority, because such technologies can bring about a breakthrough in improving weapons' combat parameters, Russian President Vladimir Putin said at another conference devoted to defense issues on Wednesday.

"Let me stress one fundamental aspect. The use of artificial intelligence technologies has top priority in creating these and other weapon systems of the future," Putin said while speaking about hypersonic systems.

He stressed that AI technologies "must bring about a qualitative breakthrough in enhancing weapons' combat capabilities."

"Such technologies should be used more actively in personnel and weapons command systems, communication and data transmission means and also high accuracy missiles," Putin believes.

Of no less importance, he said, is the introduction of AI technologies in creating new highly autonomous robots and in the remote control of drones and deep submergence vehicles.

"All these priorities and tasks must be reflected to the full extent in the new state program for armaments extending till 2033," he said.

Putin stressed that the work on a unified system of reference data for shaping the program was already underway at the Defense Ministry.

#### Russia is using AI to expand geopolitical influence---they perceive US AI development as existential.

Donat Sorokin 21, Freelance Political Photographer and Journalist, “Artificial intelligence becoming tool of geopolitical influence — Russian Security Council,” 8/24/21, https://tass.com/defense/1329505/micahw

Artificial intelligence technologies are turning into a tool of geopolitical influence, Russian Security Council Deputy Secretary Oleg Khramov said, addressing the Army-2021 International Military-Technical Forum on Tuesday.

"Artificial intelligence technologies are one of the key aspects of the Fourth Industrial Revolution and require attention in terms of ensuring security and protecting national interests. State agencies, research organizations, manufacturers and private companies actively seek to implement technologies capable of simulating human cognitive functions," he pointed out. "In a completely digitalized world, artificial intelligence technologies turn into a tool of geopolitical influence," Kharmov added. Moreover, in his words, the research community is discussing possible scenarios for future conflicts between human civilization and the community of machines.

The Russian Security Council deputy secretary emphasized that developed countries, primarily the United States and its closest allies, are promoting "certain approaches to the basic rules for the development and use of artificial intelligence systems in various fields, which they can take advantage of." "Clearly, the countries that have succeeded in the development of such rules and standards and seek to enshrine them internationally look for new opportunities to gain global dominance in a changing historical environment," Khramov stressed.

"This situation creates threats to Russia’s national security and makes it necessary to respond appropriately," he concluded.

#### Putin is committed to AI.

Alexei Nikolsky 20, Political Reporter and Photographer for The Moscow Times, “Artificial intelligence is not about hype, it will not 'fade away' over time — Putin,” 12/4/20, <https://tass.com/economy/1231575/micahw>

Artificial intelligence is not about hype and it will not "fade away" over time, Russian President Vladimir Putin said at a plenary session of the international online conference Artificial Intelligence Journey (AI Journey).

"We are allocating serious resources, both financial and administrative ones, on creation and development of technologies. It is not about spending these funds, purchasing high-status gadgets and other household appliances. Artificial intelligence is not about a so-called fashion hype or a prestigious trend, that will fade away, vanish tomorrow or the day after tomorrow. No, this will not happen," the president noted.

He recalled that "global history knows many cases when large, global corporations and even countries literally slept through a technological breakthrough and were swept off the historical stage overnight."

"We must remember this. I want my colleagues in ministries, departments, regions of the Russian Federation, in state companies, research centers and universities to hear me now: we have to tackle issues of a fundamentally new level of complexity," the head of state said.

#### It's Putin’s top interest.

Peter Suciu 21, Michigan-based writer who has contributed to more than four dozen magazines, newspapers, and websites. He regularly writes about military small arms, “Putin Wants Russia to Lead the Way in AI Weapons,” https://nationalinterest.org/blog/buzz/putin-wants-russia-lead-way-ai-weapons-195808/micahw

Even as numerous leaders in the tech world have repeatedly warned of the dangers that artificial intelligence- (AI) enabled weapons could present for the future of mankind, Russian Federation president Vladimir Putin has long been a firm supporter of AI weapons. In 2017, Putin proclaimed that the country that leads AI development could have a significant advantage over its rivals.

Putin also admitted that the development of AI could present challenges for humanity.

“Artificial intelligence is the future, not only for Russia, but for all humankind,” Putin remarked. “It comes with colossal opportunities, but also threats that are difficult to predict. Whoever becomes the leader in this sphere will become the ruler of the world.”

Fast forward to this week and Putin seems more than willing to overlook any of those difficulties to predict threats—as he stressed the need for Russia to introduce advanced technologies including AI, which could be used in unmanned combat aircraft.

“We need to continue work on [unmanned aerial vehicles], keep working as intensively as we have been doing lately,” the Russian leader said at a defense industry meeting in Sochi, TASS reported. “I also mean using artificial intelligence, state-of-the-art achievements of technology and science."

Putin, who said that there were more than 2,000 drones operational in the Russian Army at present, also recommended that the Russian domestic defense industry should use the analytical data from those autonomous devices that have already been employed in combat.

### ---AT: Ukraine Thumps

#### Even if Ukraine devastated Russia, they’ll still hang onto AI weaponization.

Dr. Christopher Whyte 22, assistant professor of homeland security and emergency preparedness at Virginia Commonwealth University, “Russia’s AI setbacks will likely heighten its cyber aggression,” <https://www.csoonline.com/article/3656957/russias-ai-setbacks-will-likely-heighten-its-cyber-aggression.html/micahw>, language edited.

With the weight of Western sanctions ~~crippling~~ [damaging] parts of the Russian economy, the consensus seems to be that Moscow’s ambitions of being a major player in the development of machine learning, robotics, natural language processing and other artificial intelligence (AI) tools are functionally dead. The consequences of the war waged against Ukraine on Russia’s wealth, workforce and access to sophisticated imported products such as microprocessors used to operate everything from mobile devices to automobiles are immense.

Without capital, talent and a line on critical commodities and technologies, Russia will struggle to be competitive in everything from medical technology development to national security practice. This likely result of increasing isolation seems doubly assured with AI. Russia’s relatively weak fundamentals and strong competition from both China and the West virtually guarantee vast opportunity costs to Russia in years to come. This outcome might be seen as a positive development that will cede techno-strategic advantages to defense communities in North America, Europe and East Asia--those most concerned about Russia’s military capabilities and intentions.

There may be some truth in that assumption but to equate the recession of Russia’s ability to build cutting-edge AI with diminished likelihood of conflict centered on AI would be disingenuous. Practitioners and policymakers across the West would do well to recognize that the subversive character of AI design and deployment creates perverse incentives toward conflict even, almost especially for actors that do not lead the field. In no place is this coming uptick in conflict more likely to manifest than in cyberspace.

#### Ukraine proves that Russia is INCREASING investment in AI weaponization.

Dr. Sanur Sharma 22, Associate Fellow at Manohar Parrikar Institute for Defence Studies and Analyses, “Russia’s AI Enabled Military Ecosystem and Its Algorithmic Warfare,” https://www.idsa.in/idsacomments/russias-ai-enabled-military-ecosystem-ssharma-160322/micahw

The ongoing Russia–Ukraine conflict showcases how various technologies can be vehemently used on the battlefield through both land and air. With Russia’s advanced air combat capabilities, it has reportedly used only Tu-22M3 bombers, Ka-52 attack helicopters, SU25, Su27 flanker and Su30 fighters to destroy Ukraine’s military bases and other critical infrastructures. Russia’s new Artificial Intelligence (AI) capabilities include AI-enabled robotic weapons, autonomous tanks, Unmanned Aerial Vehicles (UAVs), and long-range strikes involving high-precision missiles.1 Russia is heavily committed to the use of AI for military systems for intelligence gathering, C4ISR, logistics and development of autonomous weapons.

Despite having advanced AI-based military capabilities, Russia has not used any lethal autonomous weapon systems in the recent conflict. Moreover, Russia’s development and use of weaponised AI is not only attributed to the quest of power or the global AI race but also to the strategic implications and risks involved with autonomy. The technological modernisation with AI has been declared as one of the key areas for the future of defence strategy. One significant aspect of AI is that it is not a weapon but a range of functions and technologies that can be devised through integrating it with systems to gain a strategic advantage over adversaries.

Today, countries with geopolitical conflicts are using AI and Machine Learning (ML) in cyberattacks, misinformation and disinformation campaigns to their advantage. This has been visible in the current Russia–Ukraine conflict, where Russia has been suspected of having used asymmetric warfare by using AI-based cyber-attacks, electronic warfare and information weapons on Ukraine’s infrastructure like electrical grids and communication systems before the incursion. Russia has in the past also used this discreet use of technology for destabilising its opponents’ infrastructures. The discourse on the use of weaponised AI in such conflicts entails domestic challenges in addition to geopolitical implications. Therefore, Russia is being careful and heading with a strategised course of action in using this technology on battlefield.

### DEWs---2NC

#### Russia is developing DEWs – causes them to leapfrog the US militarily

CTG 21 [The Counterterrorism Group is a Security service based in Washington, D.C., "Executive Summary: DIRECTED ENERGY WEAPONS: RECENT DEVELOPMENTS AND UTILIZATION", https://www.counterterrorismgroup.com/post/executive-summary-directed-energy-weapons-recent-developments-and-utilization] GBS-HW

China and Russia have developed several new technologies in recent years that might threaten the supremacy of the US in the military sphere, including Directed Energy Weapons (DEWs). These weapons systems belong to the category of "non-lethal weapons,'' which complement the conventional ones and, in many cases, even replace them and are available in technologically advanced countries. DEWs use beams of intense energy to target people, vehicles, and other weapons to disable or destroy them, which can be in the form of lasers, radiation, microwave, and sound. The principle of operation of guided energy weapons is the concentration of energy in small rays or microwaves and the concentration of energy at a point for the destruction of the electronic equipment of the battle platform. China's and Russia’s willingness to rapidly develop emerging technologies on a massive scale means that it is highly likely their military will quickly reap the benefits of any scientific progress and potential military operation, despite the US efforts to respectively advance such weapons so that it can face its competitors.

China has been working on several different types of DEWs, the most prominent of which is the anti-satellite weapon system (ASAT) that will use a beam of energy to disable the satellite. China, in recent years, has been working on perfecting this weapon and has utilized it against the US in 2006 to strike US satellites in orbit.[2] If China were able to perfect this weapon, it could be used to take out any military or intelligence satellites in orbit, causing an increase in tensions between all countries involved. In addition, at the International Aerospace Exhibition in Moscow in 2019, China’s Aerospace Science and Industry Company demonstrated the LW-30 laser weapon system, which could use high-energy emitted lasers to instantly track and intercept various aerial targets from photoelectric guidance equipment to aircraft, guided bombs, and mortar shells.[3] For instance, utilizing this weapon in any potential military operations in the South China Sea, where China is particularly aggressive in the recent months deploying more forces, would be highly efficient for the defense and protection of its already militarized artificial islands in these disputed waters, and for encountering the US navy armed forces.

Furthermore, microwave weapons are widely used in China's large surface warships. For example, Type 055 is equipped with a high-power microwave launcher (HPM) missile system, which combines microwave weapons with indoor pistols and defense missiles to form a complete missile network.[4] Undoubtedly, China is one of the most important competing forces that the US has to face, not only economically and commercially, but also in armaments. The advanced weapons systems of both countries seek to gain the upper hand so that the technological advantage becomes a victory lead on the battlefield in a possible US-China war. China's State Broadcasting Corporation (CCTV) has released footage showing a new system of guided energy weapons or the Chinese laser weapon, but details of the development of this new weapon were not disclosed.[5] According to identified sources, the system was designed to immediately eliminate offshore enemy threats, such as small boats, warships, and unmanned vehicles and aircrafts.[6] However, the Chinese Type 055 equipped with the microwave launcher and integrated electric power plant is highly likely to be used against low-level asymmetric threats and, if successful, will likely be made part of the People's Liberation Army Navy arsenal, as it is expected that the new system could have escalating levels of power, depending on the purpose it seeks to achieve, whether it is preventing suspicious forces or destroying enemy targets.

On November 11, 2020, there were claims by the expert Jin Canrong that the Chinese PLA soldiers had used DEWs (laser weapons) against the duration of clashes at the Ladakh border.[7] According to these claims, the Chinese military made innovative use of high-powered microwave weapons when Indian soldiers were in control of Ladakh peaks. The army was able to emit microwaves from the mountain base to the top of the mountain, where the Indian soldiers took up positions, turning it into an 'oven,' causing the Indian soldiers to withdraw from their dominant positions quickly.[8] Such an incident demonstrates that a direct energy attack is impossible or difficult to be prevented and proves that the utilization of DEWs is effective for secret military missions.

Another incident identifying the utilization of DEWs was when US diplomats posted in China and Cuba, who have been reported to experience severe headaches, memory loss, dizziness, hearing loud noises, and then loss of hearing, balance and concentration problems, along with concussion symptoms and other issues since early 2016. The mysterious condition became unofficially known as "Havana Syndrome," and it is suspected that these officials were attacked with laser weapons and guided microwaves.[9] A recent report claimed that a CIA investigation revealed that Russian agents were using a secret laser weapon to inflict brain damage on US spies and diplomats worldwide - even on US soil.[10] The waves helped implant information errors in the embassy walls, paving the way for US intelligence to infiltrate Russian communications networks. Moreover, the US is investigating attacks in Syria in 2021 that appear to have the characteristics of directed energy strikes against US troops, which appear to be mysteriously ill in Syria, and the Pentagon suspects Russia.[11] If true, this would mean that DEWs could be utilized in areas where Russia wants to be involved and still stay undetected and could be rapidly advanced further to be deployed for the major attack in a conflict as they can disable almost the entire personnel of the troops.

Along with China, Russia is also making plans to develop DEWs. Some of the weapons that Russia is pursuing include laser weapons, radio-electric weapons, and sonic weapons.[12] The Peresvet, a mobile laser system mounted to a truck, targets satellites and attempts to blind or dazzle them. It does this to keep the satellites from collecting intelligence such as geographical images.[13] Russia is also working on an electronic countermeasures system called Khibiny. This system can be mounted on aircraft and other vehicles and interrupts the electronic system of an opposing target. The Russian military claims to have used this weapon in 2014 against the USS Donald Cook; however, there is no actual evidence that this took place.[14] While the claims of its use have not been substantiated, Russia is continuing to develop the weapon and mount it on its aircraft.[15] It is expected that these systems will momentarily disrupt the electronics of a targeted vessel or vehicle, but it is unlikely to cause severe impacts. If Russia did develop this weapon to be as effective as hoped, it could prove nearly impossible for the US and its allies to track aircraft, thus giving Russia an advantage. If Russia were to gain a military advantage over the US and its allies, the nation would likely be more willing to launch military action in Eastern Europe.

### Supersoldiers---2NC

#### Russia creates supersoldiers---extinction.

Henry Holloway 19, Senior Foreign News Reporter in London, citing Robert O. Work, Former United States Deputy Secretary of Defense, “Dawn of the super soldier: Russia 'creating steroid-fuelled bionic warriors for battle',” Updated 6/20/19, https://www.dailystar.co.uk/news/latest-news/super-soldiers-russian-army-marines-17103386/micahw

Top American military chiefs have warned Moscow is working to create “enhanced human operations” technology which they say “scares the crap out of us”.

Supersoldiers are fast becoming a reality as armies across the world search for ways to beef up their troopers to make them stronger, faster, and more deadly.

But while most future weapons are based around robotics, lasers and exoskeletons, defense bigwigs in the United States believe Russia is going one step beyond to create the ultimate super soldier.

Military science experts have predicted super soldiers could be very close to the horizon and Russia could be leading the way.

Steroids and other performance enhancing drugs can be pumped into soldiers bodies to make them tougher on the battlefield.

The drugs would allow troops to march for longer distances faster, carry more gear, and fight more fiercely in close combat.

Brian implants can also be embedded into soldiers heads to allow them to shoot with better aim or be more susceptible to orders.

Microscopic technology could also be implanted into men which would fix their wounds on the battlefield without need for a medic.

Bionics could also be used to allow men to control machines or extensive prosthetics with their minds.

Pentagon commander Bob Work, the deputy secretary of defense, said: “Our adversaries, quite frankly, are pursuing enhanced human operations. And it scares the crap out of us, really.”

The former artillery battalion commander said the US is working on tech to assist soldiers such as exoskeletons– as opposed to the suggested biological Russian gear to enhance soldiers.

He added the United States is facing a “big, big decision on whether or not we are comfortable going that way" in a speech.

America’s secret science DARPA division is already exploring the tech needed to create super soldiers.

Their scientists have researched mind-altering pain vaccines, drugs which mean soldiers can stay awake for longer periods, and microscopic magnets which would seal wounds in the wave of a hand.

Russia’s superhuman schemes extend to their athletes where a state-sponsoring doping programme landed them in trouble at the Olympics.

Maria Sharapova was caught out using the drug Meldonium – which the Soviet Union used to bolster their soldiers during the Cold War.

The pharmaceutical was unwittingly necked by Russian troopers during the superpower’s invasion of Afghanistan after being given it by military chiefs to boost their endurance.

The drug’s inventor Ivar Kalvins told a Latvian newspaper in a 2009 interview “They were all given meldonium. They themselves were not aware they were using it. No one was being asked if they agree to it back then”.

Russia is not the only power to have been experimenting with superhuman technology – as America said they suspect China could also be working on “enhanced human operations”.

Nazis during World War 2 also used performance enhancers to boost the Third Reich’s soldiers – using pills based on Crystal Meth to make them fight longer as they stormed across Europe.

The British Ministry of Defence is looking into the feasibility of super soldiers in the next 30 years according to papers made public in 2013 – featuring augmented bodies and even telepathy by signalling from electronic chips in their brain.

US Air Force Colonel Dave Shunk, now retired, described the possibilities of America’s war against supermen in a report about soldiers of the near future.

He wrote: “The Army must come to terms not only with creating—or fighting against—enhanced soldiers but also with understanding the unforeseen ethical challenges

He added: “The soldier of the future likely will be enhanced through neuroscience, biotechnology, nanotechnology, genetics, and drugs.”

Stephen Hawking has warned humanity's pursuit of deadlier weapons and new technology could lead to arms race which would spell our doom.

Moscow archives also show a superhuman programme as early as the 1920s.

Allegedly soviet dictator Stalin told scientist Ilya Ivanov “I want a new invincible human being, insensitive to pain, resistant and indifferent about the quality of food they eat.”

The Kremlin passed a request to Russia’s top scientists to create a “living war machine”.

### AT: TASS Bad ---2NC

#### They’re reliable.

Xinhua 21, “Interview: Media must fight disinformation amid global pandemic: TASS editor-in-chief,” http://www.news.cn/english/2021-11/23/c\_1310326421.htm/

Media play a vital role during the global pandemic, with the duty of providing accurate information and fighting fake news, Mikhail Petrov, deputy director general and editor-in-chief of TASS Russian News Agency has said. "The media's goal is to create a clear and reliable picture for its audience with regard to events that happen in any field, including in the healthcare system," Petrov told Xinhua in an interview ahead of the 4th World Media Summit (WMS). Noting that disinformation could lead to fatal consequences, he stressed that "the fight against fake news is vitally important, particularly in the event of a pandemic." The editor-in-chief also said new technologies would undoubtedly have an impact on the development of media. New technologies have influenced information processing as well as the ways in which contents are distributed, and have made it possible to format contents in new methods, Petrov said. "Each media outlet will have to keep up with the times to not only keep up with its audience, but also to remain as useful and convenient as possible for end-users," he said. In an age of rapid technological progress, the volume of information and its speed of production have noticeably increased, which has made the media's role in verifying information increasingly important, Petrov said. "The development of technology brings not only new opportunities for journalists, but also new responsibilities," he added. The WMS was co-initiated by nine media organizations with global influence, including Xinhua News Agency, the Associated Press, Reuters, TASS Russian News Agency and News Corporation.

### AT: Russian AI Safe

#### Absent U.S. action, Russia follows through with advanced AI that causes extinction

**Rogers 17** [Mike Rogers is a former US Representative from Michigan, chairman of the House Permanent Select Committee on Intelligence, “Artificial intelligence — the arms race we may not be able to control," TheHill, September 21, 2017, <https://thehill.com/opinion/technology/351725-artificial-intelligence-is-the-new-arms-race-we-may-not-be-able-to-control>]

“Whoever becomes the leader in this sphere will become ruler of the world,” [said](https://www.theverge.com/2017/9/4/16251226/russia-ai-putin-rule-the-world) Vladimir Putin. The sphere the President of Russia is referring to is artificial intelligence (AI) and his comments should give you a moment of pause. Addressing students at the beginning of our Labor Day weekend, Putin remarked “Artificial intelligence is the future, not only for Russia, but for all humankind,” adding, “It comes with colossal opportunities, but also threats that are difficult to predict.” For once, I find myself in agreement with the President of Russia, but just this once. Artificial Intelligence offers incredible promise and peril. Nowhere is this clearer than in the realm of national security. Today un-crewed systems are a fact of modern warfare. Nearly every country is adopting systems where personnel are far removed from the conflict and wage war by remote control. AI [stands](https://www.nytimes.com/2016/10/26/us/pentagon-artificial-intelligence-terminator.html) to sever that ground connection. Imagine a fully autonomous Predator or Reaper drone. Managed by an AI system, the drone could identify targets, determine their legitimacy, and conduct a strike all without human intervention. Indeed, the Ministry of Defence of the United Kingdom issued a press [statement](https://www.theverge.com/2017/9/12/16286580/uk-government-killer-robots-drones-weapons) in September that the country “does not possess fully autonomous weapon systems and has no intention of developing them,” and that its weapons systems “will always be under control as an absolute guarantee of human oversight and authority and accountability.” Let’s think smaller. Imagine a tiny insect-sized drone loaded with explosive. Guided by a [pre-programmed AI](https://www.amazon.com/Life-3-0-Being-Artificial-Intelligence/dp/1101946598), it could hunt down a specific target — a politician, a general, or an opposition figure — determine when to strike, how to strike, and if to strike based on its own learning. Howard Hughes Medical Center [recently](https://qz.com/1000011/scientists-attached-an-electronic-backpack-to-a-genetically-modified-dragonfly-and-turned-it-into-a-drone/) attached a backpack to a genetically modified dragonfly and flew it remotely. These examples are, however, where humans are involved and largely control the left and right limits of AI. Yet, there are examples of AI purposely and independently going beyond programed parameters. Rogue algorithms led to a [flash crash](http://gizmodo.com/rogue-algorithm-blamed-for-historic-crash-of-the-britis-1787523587) of the British Pound. In 2016, in-game AIs created super AIs weapons and [hunted down](http://www.kotaku.co.uk/2016/06/03/elites-ai-created-super-weapons-and-started-hunting-players-skynet-is-here) human players, and AIs have [created](https://www.forbes.com/sites/tonybradley/2017/07/31/facebook-ai-creates-its-own-language-in-creepy-preview-of-our-potential-future/#1cf69787292c) their own languages that were indecipherable to humans. AIs proved more effective than their human counterparts in producing and catching users in spear phishing programs. Not only did the AIs create more content, they successfully [captured](https://www.blackhat.com/docs/us-16/materials/us-16-Seymour-Tully-Weaponizing-Data-Science-For-Social-Engineering-Automated-E2E-Spear-Phishing-On-Twitter.pdf) more users with their deception. While seemingly simple and low stakes in nature, extrapolate these scenarios into more significant and risky areas and the consequences become much greater. Cybersecurity is no different. Today we are focused on the hackers, trolls, and cyber criminals (officially sanctioned and otherwise) who seek to penetrate our networks, steal our intellectual property, and leave behind malicious code for activation in the event of a conflict. Replace the individual with an AI and imagine how fast hacking takes place; networks against networks, at machine speed all without a human in the loop. Sound far-fetched? It’s not. In 2016, the Defense Advanced Research Projects Agency held an AI on AI capture the flag contest called the [Cyber Grand Challenge](https://www.youtube.com/watch?v=qSgYu3w3DMM) at the DEF CON event. AI networks against AI networks. In August of this year the founders of 116 AI and robotics companies signed a letter petitioning the United Nations [to ban](https://www.theverge.com/2017/8/21/16177828/killer-robots-ban-elon-musk-un-petition) lethal autonomous systems. Signatories to this letter included Google DeepMind’s co-founder Mustafa Suleyman and Elon Musk who, in response to Putin’s quote [tweeted](https://twitter.com/elonmusk/status/904638455761612800), “Competition for AI superiority at national level most likely cause of WW3 imo (sic)”. AI is not some far off future challenge. It is a challenge today and one with which we must grapple. I am in favor of fielding any system that enhances our national security, but we must have an open and honest conversation about the implications of AI, the consequences of which we do not, and may not, fully understand. This is not a new type of bullet or missile. This is a potentially fully autonomous system that even with human oversight and guidance will make its own decisions on the battlefield and in cyberspace. How can we ensure that the system does not escape our control? How can we prevent such systems from falling into the hands of terrorists or insurgents? Who controls the source code? How and can we build in so-called impenetrable kill switches? AI and AI-like systems are slowly being introduced into our arsenal. Our adversaries, China, Russia, and others are also introducing AI systems into their arsenals as well. Implementation is happening faster than our ability to fully comprehend the consequences. Putin’s new call spells out a new arms race. Rushing to AI weapon systems without guiding principles is a dangerous. It risks an escalation that we do not fully understand and may not be able to control. The cost of limiting AI intelligence being weaponized [could vastly exceed](https://www.belfercenter.org/sites/default/files/files/publication/AI%20NatSec%20-%20final.pdf) all of our nuclear proliferation efforts to date. More troubling, the consequences of failure are equally existential.

### Weather Weapons---2NC

#### They’ll develop weather weapons

Emory 11 [Dave, political researcher and broadcaster whose California-based radio programs are heard on a regular basis in the United States, Canada and Europe, focuses on the U.S. military and intelligence community’s historical involvement with international fascism, citing Duma member Vladimir Zhirinovsky, “Vladimir Zhirinovsky: Russia Can Use Environmental Weapons of Mass Destruction”, <http://spitfirelist.com/news/vladimir-zhironovsky-russia-can-use-environmental-weapons-of-mass-destruction>]

COMMENT: Russian fascist and Duma member Vladimir Zhirinovsky has made threatening statements about using weather weaponry against countries perceived as threatening Russia. Financed by German fascist Gerhard Frey, Zhirinovsky has always been viewed as a loose cannon. His comments about the existence of environmental weaponry should not be dismissed out of hand, however. This is NOT to say that his hints about the Fukushima disaster can be taken at face value. Nor should we automatically dismiss them. With the U.S./U.S.S.R. treaty thirty-plus years in the past, the possibility that other countries have developed such technology should be carefully considered. That devastating tragedy may well have been a natural occurrence. For the record, so to speak, I am NOT saying, necessarily, that HAARP was involved in the Japan quake. As discussed in FTR #272, other nations are developing or have developed such systems. Another thing to consider is just WHO is controlling HAARP? Might Underground Reich elements have access to the technology? “Secret Weather Weapons Can Kill Millions, Warns Top Russian Politician”; The Nation; 5/18/2011. EXCERPT: . . . Zhirinovsky made reference to the recent tsunami in Japan, suggesting that the “new weapons” to which he refers are related to weather control technology, which has been intensely studied by both the U.S. and Russia since the 1950′s and is commonly used today. Threatening to annex Georgia completely, Zhirinovsky warned, “And then there will be another tsunami, on the other side of the planet, in the Caucasus.” Zhirinovsky’s reference to the Kuril Islands in connection with the devastating tsunami that hit Japan in March is a not so subtle suggestion that Russia had something to do with causing the natural disaster that killed thousands, led to the Fukushima crisis and threatened to derail Japan’s economic recovery. Zhirinovsky also warned of a coming “third world war” emerging from the current turmoil in the Middle East and North Africa that would lead to the collapse of current global institutions like the EU and the WTO and the rise of a new international order led by Russia. . . . . . . However, as the revelations of weather modification expert Ben Livingston, a former Navy Physicist who briefed President Lyndon B. Johnson on the effectiveness of weather control back in the 1960′s during the Vietnam era, have documented, as far back as the early 1950′s the United States was funneling money into programs aimed at using the weather as a weapon during the cold war. It would be naive to think that the Russians weren’t engaged in similar research. Moreover, in an April 1997 speech to the University of Georgia, Athens, then US Secretary of Defense William Cohen spoke of the threat of an “eco-type of terrorism whereby they can alter the climate, set off earthquakes, volcanoes remotely through the use of electromagnetic waves.” For many years, suspicions have circulated around the purpose of the High Frequency Active Auroral Research Program (HAARP), an ionospheric research program jointly funded by the US Air Force, the US Navy, the University of Alaska and DARPA. In his underground bestseller Angels Don’t Play This HAARP, author Nick Begich summarizes the evidence that suggests HAARP is involved in weather control for nefarious purposes. Scientists at NASA have discovered “A close link between electrical disturbances on the edge of our atmosphere and impending quakes on the ground below,” which has led to claims that earthquakes are being artificially induced as a form of modern warfare by HAARP. The technology to which Zhirinovsky refers is rapidly moving out of the realms of science fiction and into scientific fact as we progress further into the 21st century.

#### Extinction

Hill 13 [Michael, Professor and Chair of the Humanities @ SUNY-Albany. “Ecologies of War”, eBook]

In the mid-1970s, the Soviet Union, who had its own long standing ENMOD programs, publicized previous US activities in Indochina. Since 1977, then, the final version of the treaty defines ENMOD to encompass: any technique for changing—through the deliberate manipulation of natural processes—the dynamics, composition or structure of the earth, including the biota, lithosphere, hy - drosphere, and atmosphere, or of outer space, so as to cause effects such as earthquakes and tsunamis, an upset in the ecological balance of a region, or changes in weather patterns (clouds, precipitation, cyclones of various types and tornado storms), in the state of the ozone layer or atmosphere, in cli - mate patterns or in ocean currents. However, the conditions under which this treaty was ratified, a ma - jor point of contention between the opposing Cold War blocks, was the US insistence that “each State Party to the Convention undertakes not to engage in military or any other hostile use of environmental modifi - cation techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury to another State Party” (empha - sis mine). By attaching the definition of “severe” to the time-space caveats of “widespread and long-lasting,” the DOD aligned US delegates to the UN introduced a provision that would allow for a future deployment of environmental war. They managed to put key loopholes around the most important variables in war: as we have seen above in the context of emer - gent war technology, the control of space and time. These variables be - gan to be re-introduced in a serious way as recently as 1996. In a paper, collectively authored by 7 Air Force Officers, called “Weather as Force Multiplier: Owning the Weather in 2025,” the idea of “full spectrum con - flict” presents weather manipulation as a “more important weapon than the [atomic] bomb” (House 5). “Air Force 2025” measures hurricane energy in terms of bomb capacity, noting that a worthwhile “tropical storm is equal 10,000 one megaton hydrogen bombs” [House 18]). The 45,000 lightning strikes that hit the planet daily are said to contain “elec - tro-potential...with offensive military benefit” that might be induced by “atmospherically buoyant...microscopic” computer drones, designed to seed the sky with the chemistry necessary for “aimed and timed lighten - ing strikes” (House 27). The connection between this version of electro- potential and brain wave interface is not an immediate one, since the lat - ter interface, insofar as it absorbs the human in the war machine, is more akin to ENMOD by default. With specific focus on the ionosphere (the atmospheric layer 1200 miles above earth where radio waves are reflect - ed as a natural mirror), AF 2025 also evokes the High-frequency Active Auroral Research Program (HAARP). Established in 1992 and based in Gokona Alaska, HAARP is an array of 180 tower transmitters, 72 feet in height mounted on thermopiles spaced 80 feet apart in a 12 by 15 rect - angular grid. 26 Put simply, HAARP is an ionospheric heater designed to excite low atmospheric particles, the largest such machine ever built. 27 Thus ENMOD by design is by no means off the military table (and note: the American Meteorological Society now endorses an ENMOD approach to curb global warming), but it is not as fully apparent in (pub - licly assessable) doctrinal discussion in the way that ENMOD by default currently is (“Re-engineering” 7). The time-and-space caveats attached to the 1977 UN ENMOD convention have taken on unprecedented significance given the current climate change reality, which is no longer overtly dodged by the current US ruling apparatus (military, govern - ment, corporate). Rather, climate change is embraced as a target enhancing operational environment, the purest form of ENMOD by default. This adaptation to, indeed embracing of, planetary risk makes military strategy out of a forgone conclusion of anthropogenic climate catastrophe. However, anthropogenesis—a crucial qualification—does not at all translate to the preservation of the human being. Consistent with both military technology and national security policy, ENMOD by default disintegrates the efficacy as much of human will as of the human being as such. Humanity may appear to determine war in the aerial empire, but we are by no means in control of the new dynamics of planetary violence. At 350 ppm, we are at—and are surpassing—a level of “dangerous anthropogenic interference” (DAI), with CO2 levels to approach 450 parts per million by 2012 (Kolber 42). 28 (China’s toleration proves higher, at 550 ppm and even 750 ppm.) Ice caps are melting, sea levels rising, faster than the conservative International Panel on Climate Change (IPCC) 262 Mike Hill predicted in 2007. At the current pace of extinction more than half the earth’s animal species will be gone by the end of the century, and accord - ing to a 2009 MIT Integrated Global Systems model, it will be too late to stem eco-catastrophe much sooner than predicted. IPCC panel head Rejendra Pachauri cites 2012, the expiration date of the US rebuked Kyo - to Protocol, as the planet’s next tipping-point (qtd. in Vanderheiden xi). The same 2009 Strategic Studies Institute (SSI) document that we cited by way of introducing drono-spheric SkyOps several moves above also displaces the human-centered notion of ENMOD by deliberate design à la Operation Popeye with a far more complicated (if not also suicidal) strategy of ENMOD by default: adaptation to, as much as mobilization of, the destructive power unleashed by coal-produced CO2 gases. Here the term climate change moves the problem of ecology from the limited context of anthropogenesis toward a more perversely expansive morpho - genic realm of agitated particles, chance compounds, and aleatory aggre - gates that are given human purpose only in the wake of this or that event of mass crisis. The ecology of war is seen here as a way of fighting so- called cross-border wars that are not merely trans -national (as across na - tional lines) but are also infranational (as within nations) because war is phylogenic now. Climate change becomes an accelerant and a multiplier of military force ( TSC 4) that eventually turns on its masters. We have seen the mutation of space and acceleration of time as noted in the SSI climate change materials already at work in brain-machine in - terface technologies (BMI), and in the drono-sphere, examined above. Here, recall, we found a set of innovative war applications that fused ma - chinery and meat. Let’s also emphasize that, given the blurriness of con - temporary security doctrine and the twenty-first century war machine, we also detected an elaborate data-driven war analytic that no longer cares to divide war from peace, foe from friend, risk from security, al - terity from homeland, state power from civility, and so on and so forth with the traditional divisions of Western modernity. The notion of climate change as a form of tactical enhancement may also be applied to the way in which fractals and chaos are being considered with renewed pervasiveness in emergent military systems. A 1996 Navel War College paper, “Chaos Theory: the Essentials of Military Applications,” provides a theoretical foreshadowing of drone technology, using chaos analysis in a precisely analogous way that De Landa’s uses the term machinic phy - lum. In the temporal sense, chaos is defined, apropos James Gleick’s well- known work, as “behavior that is not periodic, [but is] apparently random , where the system response is still recurrent (the pendulum still swings back and forth) but no longer in a predictable way ” ( James 14; emphasis origi - nal). 29 By the chance synchronizing of aleatory time signatures that both cut across and recombine biotic and non-biotic strata (for example, cli - mate change and human beings), computer technology produces similar mutations of space. Like fractal media, chaos theory allows us to identify “ transitions between various dynamics, that are common to many sys - tems” (14). But again these dynamics cannot be visualized in an intelligi- bly useful way without the mathematical reading ability brought about by electronic machine vision. Algorithms turn chaos into otherwise invisi - ble new phylogenic lines. Consistent with fractal media, the chance event is seized upon to coordinate unforeseen alignments between unlike enti - ties, as drone vision produces a probable calculus—Las Vegas style—of a virtual battlefield that we cannot simply model in advance. “Chaotic flow generates time intervals with no periodicity of apparent pattern” (15), which is the operational equivalent of security predicated on proximate and perpetual war. And most importantly for understanding the relations of violence in the aerial imperium, the intra-systemic dynamics of chaos gain military application by modeling weapons on climate at several lev - els. Climate change is conceived of in the literal sense with ENMOD by design. In turn, ENMOD by default eventuates in a stage of war that transcends humanity’s capacity to control what we might as well summarize as an atmospheric army about to go rogue. Chaos theory seeks military benefit by reorganizing war according to the asymmetrical systems of “weather dynamics and clouds.” And on the order of the machinic phylum, twenty-first century war is predicated on non-linear similar turbu - lence events, wind patterns, storm systems, lightening-bombs, ecological weapons, that are literally tipped by mechanical “swarms where battle - fields are filled with new clouds that carry lethal capabilities” ( James 79). Climate change is a new—and will become the predominant—means of waging if not also of modeling war. The atmosphere has now become a weapon both by design and by default. And to the same extent, related technologies such as BCI and fractal media efface and reabsorb the human being. This effacement/reabsorption happens, in the first instance, as the war machine has wedged a new machinic phylum across carbon- and non-carbon based life forms; secondly, and more dramatically, this process of effacement/absorption happens in the sense that humanity has stacked the odds against its long-term survival. The victory for this or that side of the global human population is no longer a presumptive goal in the context of an aerial imperium. As mentioned above once be - fore, there are 50 million environmental refugees in 2010, and according to UN estimates there will be more than 200 million by 2050, marking an epoch of population culling if not also a set of re-divisions within the human species (Glenn and Gordon 2). In the eco-suicidal register that is coterminous with ENMOD by default, humanity itself becomes a side, a losing side, within a meshwork of trans-biotic agency that wins by en - veloping its human other. Rather than being apparent as a category that might be divisible into simply national oppositions, so-called transna - tional war means that the human being is becoming barely traceable as a fading bio-political ideal. With the 1925 Geneva protocols against chemi - cal warfare in mind, the International Committee of the Red Cross “urges [us] to...remember our common humanity” (International Committee of the Red Cross 3). Within the aerial empire, remembering humanity may be all we are going to have.

### Kinetic Weapons---2NC

#### Otherwise, they’ll develop military future tech – specifically, kinetic energy weapons

RBTH 16 [Russia’s Armed Forces put prototype laser weapons in operation”, <https://www.rbth.com/defence/2016/08/04/russias-armed-forces-put-prototype-laser-weapons-in-operation_618071>

Russian specialists developing a weapon based on new physical principles The first prototype laser weapons have been made operational with Russia’s Armed Forces, Russian Deputy Defense Minister Yuri Borisov said. Borisov made this statement on the occasion of the 70th anniversary of the Russian Federal Nuclear Center - All-Russian Research Institute of Experimental Physics (RFNC-VNIIEF). "This is not something unusual. These are prototype rather than experimental weapons. We have already put several laser weapons into operation," Borisov said, adding that weapons based on new physical principles were becoming a reality in our days. As Borisov said earlier, the development of a weapon based on new physical principles should be included in the new state armament program for 2018-2025. As a source in Russia’s defense and industrial sector told TASS, Russian specialists developing a weapon based on new physical principles are aware of the work on a directed energy weapon, which is being carried out abroad. According to the source, the main weapons based on new physical principles included laser, acoustic, holographic and kinetic weapons.

#### Extinction

Gettings 1 [Paul, Professor of Geophysics, at U of Utah, Weapons of Mass Destruction]

Planetary K.E. Munitions. The current title-holder in pure destructive force is the planetary K.E. munition. Consisting of a large rock (typically tens of cubic km of rock) with a full Shield drive, these weapons are expensive. However, for a typical large asteroid (160 km3) at 0.5c (the limit of a standard Shield drive), the impact energy is 42,464x1012 tons of TNT. This is more than 10 million times the destructive potential of the entire 20th century Terran nuclear arsenal. The impact energy of a planetary munition will exterminate entire continents. The direct blast can devastate entire hemispheres. There is no report of any of these ever being deployed.

### AT: War Doesn’t Solve Impacts

#### Russia will surrender

Martel 81 [William, DPhil, UMass Political Science, “A nuclear war-fighting strategy for the United States”, <https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=2900&context=dissertations_1>]

In the second model, surrender occurs when a nation ceases to fight after the war has begun. In contrast to the first option in which the United States would surrender before beginning a futile nuclear war, in this case it would surrender after a nuclear exchange. The criteria for this decision rests on the costs of the first exchange: U.S. versus Soviet losses, the size of U.S. and Soviet reserve forces, and the relative standing of the United States. Thus, the pressure to surrender could be irresistible if a nation sees itself in a losing position. Although surrender is not as "overt" as passing the sword from the defeated to the victorious general, unilateral cessation of hostilities by the United States is symbolic, especially if the Soviet Union sustains less casualties. In summary, nuclear war is limited if the United States or the Soviet Union terminates hostilities before its nuclear arsenal is depleted. This is, therefore, the definition of limited nuclear war.

#### Escalation dominance proves

**Wirtz 14** [James J., Dean of the School of International Graduate Studies at the US Naval Postgraduate School, and Director of the Global Center for Security Cooperation for the Defense Security Cooperation Agency, April 2, 2014, Limited Nuclear War Reconsidered,” On Limited Nuclear War in the 21st Century, Stanford University Press]

In the event of a failure of deterrence—if nuclear first use by an opponent appears imminent or has already occurred—the need for war termination on grounds favorable to US interests will become painfully apparent to US policymakers. Under these circumstances, the goal of disarming the opponent using minimal amounts of nuclear firepower in an effort to limit collateral damage will appear as a desirable strategy. In other words, a denial strategy that relies on a mix of conventional precision-strike weapons, missile defenses, and low-yield nuclear weapons should appear even more credible to an opponent during a crisis or the early stages of a nuclear war, as circumstances increase the incentives for US policymakers to actually execute deterrent threats. At the same time, the ability of the United States to inflict catastrophic levels of death and destruction in a massive nuclear attack creates a further incentive for an opponent to terminate a nuclear conflict quickly rather than suffer existential retaliation. US escalation dominance creates an incentive for the opponent not to unleash its remaining weapons in some spasmodic attack, while conventional and possibly nuclear counterforce attacks quickly degrade its remaining capabilities.

#### Russia without nukes couldn’t compete with us on anything

Weitz 18 [Richard, Director, Center for Political-Military Analysis @ Hudson, “Exploiting Sino-Russian Nuclear Divergence,” Hudson, <https://www.hudson.org/research/14601-exploiting-sino-russian-nuclear-divergence>]

Several possible reasons explain these contrasting responses. First, Russian leaders are preoccupied with nuclear capabilities because Moscow relies on them to maintain great power status. Without nuclear weapons, Russians rightly fear their country would become a regional power of limited international influence – the dread of Russian strategists.

#### They wouldn’t even be a sovereign state

Couretas 9 [John, “Patriarch Kirill: Russia needs nuclear weapons”, <http://www.aoiusa.org/patriarch-kirill-russia-needs-nuclear-weapons>]

The head of Russia’s Orthodox Church said on Friday that Russia needed nuclear weapons. Speaking in the Volga Region town of Sarov, Patriarch Kirill of Moscow and All Russia said that while the Church was in favor of “a world without weapons,” Russia required nuclear arms to ensure that it was able to “remain a sovereign state.” Sarov is the center of Russia’s nuclear weapon industry and closed to foreigners. Speaking before several thousand young people, the patriarch said “the reason for war is sin and evil in man’s heart,” and that peace can only be guaranteed by “fighting against sin.” “You can have excellently developed systems of international law, international organizations, but fall into the abyss of war,” he added.

#### A nuclear war would prevent future tech development

Caldwell 3 [Joseph G. Caldwell, 2003, Economic Growth Supervisor with a PhD in Mathematical Statistics, “The End of the World, and the New World Order,” <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.693.9552&amp;rep=rep1&amp;type=pdf>]

Of the anthropogenic factors that might reduce mankind’s destruction of the biosphere – famine, plague, and war – it appears that famine and plague would have little effect on stopping the mass species extinction. They may cause a temporary reduction in human numbers, but the population would rebound, and high levels of industrial production would continue, and damage to the biosphere would continue. The industrial nations of the world, which account for most of the global energy use, would likely continue in numbers and in industrial activity pretty much as before. These eventualities would do little to stop the destruction of the biosphere and the mass species extinction. But war is different. The main difference is not that it may reduce human numbers faster or to a greater degree than famine or plague, but that it can cause a catastrophic decrease in the level of industrial production, which is the major cause of environmental destruction. Also, it can occur at any time – it does not have to wait until fossil fuels run out, after many more species have been destroyed. It can occur tomorrow, and prevent the species loss that would otherwise occur over the last half century of the petroleum age. By reducing industrial activity by a large amount, it could reduce the current horrific rate of consumption of fossil fuels, leaving some for many future generations to take advantage of – to use for mankind’s benefit, rather than for a few generations’ mindless pleasure. (Of course, economics does not distinguish between production spent on war 7 or video games or tourism or religion or art or philosophy, and the discounted “present value” of things in the far distant future is negligible, so this argument is of little consequence in today’s world.) And the likelihood of its occurrence is increasing fast.

#### Every empirical example of effective arms control followed a nuclear crisis

**Fuhrmann 16** [Matthew, associate professor of political science at Texas A&M University, November 2016, “After Armageddon: Pondering the Potential Political Consequences of Third Use,” Should We Let the Bomb Spread?,” edited by Henry D. Sokolski, United States Army War College Press, <http://www.dtic.mil/dtic/tr/fulltext/u2/1021744.pdf>]

The discussion in this section so far assumes that the third use of nuclear weapons would negatively affect the nonproliferation regime. It is also possible, and somewhat paradoxical, that nuclear use would result in a stronger regime. The international community often reacts to disasters by instituting sweeping reforms. Most of the major improvements to the nonproliferation regime since 1970 resulted from crises of confidence in existing measures. India’s nuclear test in 1974 led to the creation of the Nuclear Suppliers Group (NSG), a cartel designed to regulate trade in nuclear technology and materials. Iraq’s violations of the NPT prior to the 1991 Persian Gulf War caused the international community to give the International Atomic Energy Agency (IAEA), the main enforcer of the NPT, more teeth through the 1997 Additional Protocol. In addition, the international community sought to strengthen global export controls by passing United Nations Security Council Resolution 1540 after the public exposure of the A. Q. Khan network, a Pakistani-based operation that supplied nuclear weapon-related technology to Iran, Libya, and North Korea. As these examples illustrate, sweeping reforms are sometimes possible in a time of crisis. The third use of nuclear weapons would no doubt be horrific. It might, therefore, create a broad international consensus to strengthen nonproliferation norms in an attempt to lower the odds that the bomb would be used a fourth time. This does not imply that the third use of nuclear weapons would be a good thing. The negative consequences would outweigh any marginal improvement in the nonproliferation regime resulting from nuclear use.

#### Movements will literally overthrow recalcitrant governments. Nuclear use makes the audience costs huge

**David 18** [David, Professor of Political Science at Johns Hopkins University, 2018, “The Nuclear Worlds of 2030,” Fletcher Forum of World Affairs, vol. 42, pp. 107–118]

CATASTROPHE AND THE END OF NUCLEAR WEAPONS In the year 2025, the world very nearly came to an end. Smarting after several years of economic downturn and angry at American efforts to encircle it with NATO bases, Russia responded to a "plea" for help from co-ethnics in the Baltic states. Thousands of Russian troops, disguised as contract "volunteers" dashed across international borders allegedly to protect Russian speakers from governmental assaults. The Baltic countries invoked Article 5 of the NATO Treaty while American forces, deployed there precisely to deter this kind of aggression, clashed with Russian troops. Hundreds of Americans were killed. Washington warned Moscow to halt its invasion to no avail. The United States then prepared for a major airlift of its forces to the beleaguered countries, with Moscow threatening America with "unrestrained force" if it followed through. Washington ignored the threat and Moscow, seeking to "de-escalate by escalating," destroyed the American base of Diego Garcia in the Indian Ocean with a nuclear-armed cruise missile. The United States responded with limited nuclear strikes against Russian bases in Siberia. Thus far, the collateral damage had been kept to a minimum, but this bit of encouragement did not last. Fearing a massive American pre-emptive strike aimed at disarming its nuclear arsenal, Russia struck first against the range of US nuclear forces both in the United States and at sea. America responded with its surviving weapons, destroying much (but not all) of the remaining Russian nuclear arms. And then, both sides took a breather, but it was too late. Although cities had been largely spared, millions had died on each side. Making matters worse, predictions of nuclear winter came to pass - producing massive changes in the weather and killing millions more, especially in developing states. The world finally had enough. A dawning realization emerged that leaders of countries simply could not be trusted with weapons that could destroy humankind.3 Protests swept the globe calling for total disarmament. Mass demonstrations engulfed the United States and Russia demanding the replacement of their existing governments with ones committed to ending nuclear weapons. Voices calling for more moderate disarmament that would preserve a modest nuclear deterrent were angrily (and sometimes violently) quashed. The possession of nuclear weapons became morally repugnant and unacceptable. No longer were the intricacies of nuclear doctrine or force levels subject to debate. The only question remaining was how one could get rid of these loathsome weapons as quickly as possible. Under the auspices of the United Nations, a joint committee composed of the Security Council members, other countries known to possess nuclear arms, and several non-nuclear powers was established. Drawing on the structure and precedent of the Chemical Weapons Convention, this UN body drew up the Treaty that called for the complete disarmament of nuclear arms by 2030. The development, possession, and use of nuclear weapons was prohibited. An airtight inspection regime, enhancing the procedures already in existence through the Non-Proliferation Treaty, was established to first account for all nuclear arms and fissile material and then monitor the destruction of the nuclear weaponry. All countries were subject to the Treaty, whether they maintained nuclear facilities or not. Violations would produce a range of punishment from global economic sanctions to massive conventional attack.' 6 By 2030, all the nations of the world had agreed to the Treaty. No violations occurred. Armed conflicts persisted, but they proved to be of modest scale, erupting only within countries but not between them. Insofar as the fear of nuclear weapons helped keep the peace during the Cold War and post-Cold War eras, the horror of nuclear use now made war all but unthinkable. A feeling of relief swept the globe as the specter of nuclear holocaust vanished, tempered only by the painful regret that it took the death of millions to realize a goal that for so many had been self-evident since 1945.

## US Wins/Defense

### US Wins---2NC

#### Biden would strike first.

Sara Sirota 04-11-22 [Sara Sirota is a Politics Reporter at The Intercept. She was previously an Air Force reporter at Inside Defense, The Intercept, “Biden’s Nuclear Strike Policy is the Same as Russia’s,” https://theintercept.com/2022/04/11/nuclear-weapons-biden-russia-strike-policy///ZW]

DURING HIS CAMPAIGN for president, Joe Biden penned an article in Foreign Affairs titled “Why America Must Lead Again.” In it, he laid out his thoughts on the most dangerous arms in the U.S. stockpile. “I believe that the sole purpose of the U.S. nuclear arsenal should be deterring—and, if necessary, retaliating against—a nuclear attack,” the then-candidate wrote. “As president, I will work to put that belief into practice, in consultation with the U.S. military and U.S. allies.” The declaration gave arms control advocates hope that the president would adopt a no-first-use policy — meaning that the U.S. would commit to never initiating a nuclear conflict. Current policy allows the president to strike first in an extreme circumstance, like in response to a devastating chemical attack, which can lower the threshold for nuclear war to break out. But now, at a time when the world is closer to a nuclear exchange than ever, thanks to Russian President Vladimir Putin’s devastating war against Ukraine, Biden has gone back on his word. On March 29, the White House released a short summary of Biden’s upcoming strategy on nuclear forces indicating his decision: “The United States would only consider the use of nuclear weapons in extreme circumstances to defend the vital interests of the United States or its allies and partners.” This effectively makes the U.S. stance on nuclear employment indistinguishable from Russia’s. According to its military doctrine, Russia may use a nuclear weapon if it faces an “existential” threat — a fact of which Putin has reminded observers around the world in recent weeks as he pummels Ukraine. Biden’s decision to keep U.S. policy so similar to Russia’s amounts to a missed opportunity to build an international coalition against nuclear conflict, disarmament advocates say. Sen. Ed Markey, D-Mass., co-chair of the Nuclear Weapon and Arms Control Working Group, took to the Senate floor on March 31 to indict the policy: “Unfortunately, our American democracy and Russia’s autocracy do share one major thing in common: Both our systems give the United States and Russian presidents the godlike powers known as sole authority to end life on the planet as we know it by ordering a nuclear first strike.” According to the Wall Street Journal, which first reported Biden’s decision to maintain first-strike authority on March 25, the president faced pressure from allies to renege on his campaign pledge. He met with European partners late last month amid apparent concerns that Russia may use a nuclear or chemical weapon as part of its war against Ukraine. (NBC reported last week that three U.S. officials admitted there is no evidence that Russia brought chemical weapons near Ukraine.) Tom Collina, policy director at the nuclear arms control group Ploughshares Fund, argued that rolling back the strike authority could have benefited international efforts against Russia. “Putin is threatening the first use of nuclear weapons to hold Ukraine hostage and keep the US and NATO out,” he wrote to The Intercept. “This is nuclear blackmail, and its a dangerous precedent that we must oppose. Its therefore deeply disappointing that the Biden administration just missed a key opportunity to reject first use. Instead, Biden’s policy also allows first use and is essentially the same as Russia’s, and this undermines Biden’s ability to build international opposition to what Putin is doing.” That may be the case for lawmakers of at least one ally. On April 1, dozens of members of the Progressive Caucus of Japan, a minority coalition to the left of the conservative Liberal Democratic Party fronted by Japanese Prime Minister Fumio Kishida, joined American lawmakers in the Congressional Progressive Caucus to call on Biden to commit to a no-first-use policy. “A U.S. declaration stating that it would never start a nuclear war, supported by Japan, would breathe new life into international efforts to reduce and eventually eliminate the danger of nuclear war,” the letter, led by CPC Chair Pramila Jayapal, D-Wash., said. The lawmakers cited the importance of such a policy as tensions between the U.S. and China, also a nuclear power, continue to worsen. (China owns significantly fewer nuclear weapons than the U.S. or Russia, but the Defense Department says it’s engaging in a buildup.) Other Democrats have remained quiet or indicated tacit support of the status quo. Republicans took advantage of a Senate Armed Services Committee hearing with the head of U.S. Strategic Command, Adm. Charles Richard, last month to defend the logic of first-strike authority. When Richard said that changes to declaratory policy would harm relationships with allies, the panel’s chair, Sen. Jack Reed, D-R.I., did not question the argument, and no other Democrats broached the subject. Despite the dangers that nuclear weapons pose, Democrats are allowing their fear of appearing weak amid Russia’s war on Ukraine to triumph over meaningful reform that could make the world safer. “I’m certainly in favor of making it clear that the United States is not going to be the first to use nuclear weapons,” Sen. Chris Murphy, D-Conn., told The Intercept. “I’d have to think a little bit more about whether this is the right time or what the mechanism would be to make that policy.” He downplayed the idea, though, that the U.S.’s strike policy is indistinguishable from Russia’s: “Russia’s policy is whatever is in Vladimir Putin’s head at the moment.” While maintaining first-strike authority, Biden’s nuclear policy is slated to roll back certain nuclear weapon programs started under the Trump administration. According to the Wall Street Journal, he’s planning to get rid of the B83 gravity bomb, the largest in the U.S. nuclear stockpile, which was on track for retirement until the previous White House decided to keep it around. Biden’s also planning to get rid of a nuclear-armed, sea-launched cruise missile that the Trump administration had greenlighted. “If media reports are true, President Biden has missed an historic opportunity to reduce the role of existential nuclear weapons in U.S. military strategy.” Biden has, however, reportedly decided to stick with the Trump administration’s plan to deploy the “low-yield” W76-2 warhead on nuclear submarines. This class of weapons has lower explosive power compared with the most destructive nuclear weapons, like intercontinental ballistic missiles, potentially lowering the threshold for nuclear war. Russia notoriously has more low-yield nuclear weapons than the U.S., which has raised concerns about their potential use in the war against Ukraine, especially if Putin believes that he has no other way to defeat the resistance. Murphy called for the U.S. to take action to prevent their proliferation worldwide. “I think it’s time for us to lead a global conversation around the proliferation of these smaller tactical nuclear weapons, because they will ultimately allow a madman to justify using it and believing they can ultimately get away with it,” he said. In the meantime, Biden has foregone his primary chance to rally allies around the push for a no-first-use policy. “If media reports are true, President Biden has missed an historic opportunity to reduce the role of existential nuclear weapons in U.S. military strategy,” said Markey in a statement following the Wall Street Journal report. “Retaining a warfighting role for U.S. nuclear weapons is a triumph for the trillion-dollar defense industry, but it is a tragedy for everyone counting on the President to keep his campaign promise to make deterrence the sole purpose of nuclear weapons.”

Optional:

#### Super-Fuze and SSBMs guarantee a victory --- our ev does the math

Kristensen et al. 17 [Hans, Associate Senior Fellow with the SIPRI Disarmament, Arms Control and Non-proliferation Programme, director of the Nuclear Information Project with the Federation of American Scientists, co-author to the world nuclear forces overview in the SIPRI Yearbook (Oxford University Press) and a frequent adviser to the news media on nuclear weapons policy and operations, “How US nuclear force modernization is undermining strategic stability: The burst-height compensating super-fuze,” Bulletin of the Atomic Scientists, <https://thebulletin.org/2017/03/how-us-nuclear-force-modernization-is-undermining-strategic-stability-the-burst-height-compensating-super-fuze>]

The US nuclear forces modernization program has been portrayed to the public as an effort to ensure the reliability and safety of warheads in the US nuclear arsenal, rather than to enhance their military capabilities. In reality, however, that program has implemented revolutionary new technologies that will vastly increase the targeting capability of the US ballistic missile arsenal. This increase in capability is astonishing—boosting the overall killing power of existing US ballistic missile forces by a factor of roughly three—and it creates exactly what one would expect to see, if a nuclear-armed state were planning to have the capacity to fight and win a nuclear war by disarming enemies with a surprise first strike. Because of improvements in the killing power of US submarine-launched ballistic missiles, those submarines now patrol with more than three times the number of warheads needed to destroy the entire fleet of Russian land-based missiles in their silos. US submarine-based missiles can carry multiple warheads, so hundreds of others, now in storage, could be added to the submarine-based missile force, making it all the more lethal. The revolutionary increase in the lethality of submarine-borne US nuclear forces comes from a “super-fuze” device that since 2009 has been incorporated into the Navy’s W76-1/Mk4A warhead as part of a decade-long life-extension program. We estimate that all warheads deployed on US ballistic missile submarines now have this fuzing capability. Because the innovations in the super-fuze appear, to the non-technical eye, to be minor, policymakers outside of the US government (and probably inside the government as well) have completely missed its revolutionary impact on military capabilities and its important implications for global security. Before the invention of this new fuzing mechanism, even the most accurate ballistic missile warheads might not detonate close enough to targets hardened against nuclear attack to destroy them. But the new super-fuze is designed to destroy fixed targets by detonating above and around a target in a much more effective way. Warheads that would otherwise overfly a target and land too far away will now, because of the new fuzing system, detonate above the target. FIGURE 1. The deployment of the new MC4700 arming, fuzing, and firing system on the W76-1/Mk4A significantly increases the number of hard target kill-capable warheads on US ballistic missile submarines. The result of this fuzing scheme is a significant increase in the probability that a warhead will explode close enough to destroy the target even though the accuracy of the missile-warhead system has itself not improved. As a consequence, the US submarine force today is much more capable than it was previously against hardened targets such as Russian ICBM silos. A decade ago, only about 20 percent of US submarine warheads had hard-target kill capability; today they all do. (See Figure 1.) This vast increase in US nuclear targeting capability, which has largely been concealed from the general public, has serious implications for strategic stability and perceptions of US nuclear strategy and intentions. Russian planners will almost surely see the advance in fuzing capability as empowering an increasingly feasible US preemptive nuclear strike capability—a capability that would require Russia to undertake countermeasures that would further increase the already dangerously high readiness of Russian nuclear forces. Tense nuclear postures based on worst-case planning assumptions already pose the possibility of a nuclear response to false warning of attack. The new kill capability created by super-fuzing increases the tension and the risk that US or Russian nuclear forces will be used in response to early warning of an attack—even when an attack has not occurred. The increased capability of the US submarine force will likely be seen as even more threatening because Russia does not have a functioning space-based infrared early warning system but relies primarily on ground-based early warning radars to detect a US missile attack. Since these radars cannot see over the horizon, Russia has less than half as much early-warning time as the United States. (The United States has about 30 minutes, Russia 15 minutes or less.) The inability of Russia to globally monitor missile launches from space means that Russian military and political leaders would have no “situational awareness” to help them assess whether an early-warning radar indication of a surprise attack is real or the result of a technical error. The combination of this lack of Russian situational awareness, dangerously short warning times, high-readiness alert postures, and the increasing US strike capacity has created a deeply destabilizing and dangerous strategic nuclear situation. When viewed in the alarming context of deteriorating political relations between Russia and the West, and the threats and counter-threats that are now becoming the norm for both sides in this evolving standoff, it may well be that the danger of an accident leading to nuclear war is as high now as it was in periods of peak crisis during the Cold War. How the new accuracy-enhancing fuze works. The significant increase in the ability of the W76-1/Mk4A warhead to destroy hardened targets—including Russian silo-based ICBMs—derives from a simple physical fact: Explosions that occur near and above the ground over a target can be lethal to it. This above-target area is known as a “lethal volume”; the detonation of a warhead of appropriate yield in this volume will result in the destruction of the target. The recognition that the killing power of the W76 warhead could be vastly increased by equipping it with a new fuze was discussed in a 1994 alternate warhead study conducted by the Defense and Energy departments. The study calculated the number of warheads that would be needed for the W76 to attack the Russian target base, if START II were implemented. At the time, W76/Mk4 warheads had a fixed height-of-burst fuze (meaning the fuze could not adjust its detonation at an optimal location if it were falling short or long of a target). With those fixed-height fuzes, submarine-launched nuclear missiles were mainly aimed at softer targets such as military bases. But the study found that an enhanced Mk4A reentry-body with a new fuze that provided for an adjustable height-of-burst as it arrives would have significant capabilities against harder targets, compared to warheads with the earlier fuzes. The study assumed that a smaller number of Mk4 nuclear warheads with higher killing power per warhead could cover the Russian target base and be more effective than multiple attacks on targets with less destructive warheads. In other words, an enhanced fuze would allow the United States to reduce the number of warheads on its ballistic missile submarines, but increase the targeting effectiveness of the fleet. Figure 2 illustrates the kill distribution of US submarine-launched nuclear missiles equipped with the earlier, fixed height-of-burst fuzes. The dome-shaped volume outlined in gray shows the lethal volume within which a 100-kiloton nuclear explosion will generate 10,000 pounds per square inch or more of blast pressure on the ground. In other words, if a target on the ground cannot survive a blast of 10,000 pounds per square inch or more, it will be destroyed if a 100-kt nuclear weapon detonates anywhere within that dome-shaped volume. To show the physical relationship of the lethal volume for a particular ground target of interest—in this case a Russian SS-18 ICBM silo—Figure 2 was drawn to scale. Also shown to scale is the approximate spread of warhead trajectories that correspond to a missile that is accurate to 100 meters, a miss distance roughly the same as what is achieved by the Trident II sea-launched ballistic missile. Miss distances are typically characterized in terms of a quantity called the “circular error probable,” or CEP, which is defined as the radius of a circle around the aim point within which half of the warheads aimed at a target are expected to impact. In the case of a Trident II 100-kt W76-1 ballistic missile warhead, the lethal distance on the ground and the CEP are roughly equal. As a result, roughly half of the warheads equipped with the old, fixed-height fuze system could be expected to fall close enough to detonate on the ground within the lethal range. The new super-fuze for W76-1/Mk4A has a flexible height-of-burst capability that enables it to detonate at any height within the lethal volume over a target. Figure 3 shows how the new fuze vastly increases the chances that the target will be destroyed, even though the arriving warheads have essentially the same ballistic accuracy. The super-fuze is designed to measure its altitude well before it arrives near the target and while it is still outside the atmosphere. This measurement would typically be taken at an altitude of 60 to 80 kilometers, where the effects of atmospheric drag are very small. At this point, the intended trajectory is known to very high precision before the warhead begins to substantially slow from atmospheric drag. If the warhead altitude measured by the super-fuze at that time were exactly equal to the altitude expected for the intended trajectory, the warhead would be exactly on target. But if the altitude were higher than expected, the warhead could be expected to hit beyond the intended aim point. Likewise, if the altitude is lower than that expected, the warhead would likely hit short of the intended aim point. Testing has established the statistical shape and orientation of the expected spread of warhead locations as they fly towards the target. In the case of Trident II, the spread of trajectories around the intended trajectory is so small that the best way to increase the chances of detonating inside the lethal volume is to intentionally shift the aim point slightly beyond the location of the target. (Note that the intended trajectory in Figure 3 is shifted slightly down range.) By shifting the aim point down range by a distance roughly equal to a CEP, warheads that would otherwise fall short or long of the target using the conventional Mk4 fuze instead will detonate—at different heights dictated by the super fuze—within the lethal volume above a target. This shift in the down-range aim point will result in a very high percentage of warheads that overfly the target detonating in the lethal volume. The end result is that with the new Mk4A super-fuze, a substantially higher percentage of launched warheads detonate inside the lethal volume, resulting in a considerable increase in the likelihood that the target is destroyed. The ultimate effect of the super fuze’s flexible burst-height capability is a significantly increased target kill probability of the new W76-1/Mk4A warhead compared with the conventional warhead of the same type. Figure 4 shows the probability that warheads will detonate close enough to destroy the ground-target for both the conventional fuze and the super-fuze. As can be seen from figure 4, the probability of kill using a submarine-launched warhead with the new super-fuze (W76-1/Mk4A) is about 0.86. This 86 percent probability is very close to what could be achieved using three warheads with conventional fuzes to attack the same target. To put it differently: In the case of the 100-kt Trident II warhead, the super fuze triples the killing power of the nuclear force it has been applied to. Many Russian targets are not hardened to 10,000 pounds per square inch blast overpressure. Figure 5 shows the same probability of kill curves for the case of a target that is only hard to 2,000 pounds per square inch or more of blast overpressure, which is the actual case for almost all targets hardened to nuclear attack—ICBMs and supporting command posts, hardened structures at strategic airbases, submarines at pierside or in protected tunnels, hardened command posts at road mobile missile bases and elsewhere, etc. In this case, the super-fuze achieves a probability of kill of about 0.99—or very near certainty. This case also is equivalent to achieving a probability of kill associated with using three warheads with a 0.83 probability to achieve a 0.99 probability of kill. The probability of kills revealed by figures 4 and 5 have enormous security ramifications. The US military assumes that Russian SS-18 and TOPOL missile silos are hardened to withstand a pressure of 10,000 pounds per square inch or more. Since with the new super-fuze, the probability of kill against these silos is near 0.9, the entire force of 100-kt W76-1/Mk4A Trident II warheads now “qualifies” for use against the hardest of Russian silos. This, in turn, means that essentially all of the higher-yield nuclear weapons (such as the W88/Mk5) that were formerly assigned to these Russian hard targets can now be focused on other, more demanding missions, including attacks against deeply-buried underground command facilities. In effect, the significant increase in the killing power of the W76 warhead allows the United States to use its submarine-based weapons more decisively in a wider range of missions than was the case before the introduction of this fuze. The history of the US super-fuze program. The super-fuze is officially known as the arming, fuzing and firing (AF&F) system. It consists of a fuze, an arming subsystem (which includes the radar), a firing subsystem, and a thermal battery that powers the system. The AF&F is located in the tip of the cone-shaped reentry body above the nuclear explosive package itself. The AF&F developed for the new W76-1/Mk4A is known as MC4700 and forms part of the W76 life-extension program intended to extend the service life of the W76—the most numerous warhead in the US stockpile—out to the time period 2040-2050. The new super-fuze uses a technology first deployed on the high-yield W88/Mk5 Trident II warhead. The Navy’s Strategic Systems Program contracted with the Lockheed Missile and Space Corporation in the early 1980s to develop a new fuze that included “a radar-updated, path-length compensating fuze … that could adjust for trajectory errors and significantly improve the ability to destroy a target. This was an early and sophisticated use of artificial intelligence in a weapon.” It was the radar-updated, path-length compensating fuze—combined with the increased accuracy of the Trident II missile—that gave an SLBM the ability to hold a hardened target at risk. Efforts to incorporate the W88/Mk5 fuze capability into the W76/Mk4 was part of the Energy Department’s Warhead Protection Program in the mid-1990s to permit “Mk5 fuzing functionality (including radar-updated path length fuzing, and radar proximity fuzing) as an option to replacement of the much smaller Mk4 AF&F,” according to the partially declassified 1996 Stockpile Stewardship and Management Plan (emphasis added). Apart from the inherent drive to improve military capabilities whenever possible, the motivation for increasing the target kill capability of the submarine-borne W76 was that the Air Force’s hard-target killer, the MX Peacekeeper ICBM, was scheduled to be retired under the START II treaty. The Navy only had 400 W88 hard-target kill warheads, so a decision was made to add the capability to the W76. In an article in April 1997, Strategic Systems Program director Rear Adm. George P. Nanos publicly explained that “just by changing the fuze in the Mk4 reentry body, you get a significant improvement. The Mk4, with a modified fuze and Trident II accuracy, can meet the original D5 [submarine-borne missile] hard target requirement,” [Nanos stated](https://fas.org/wp-content/uploads/sites/4/W76nanos.pdf). Later that same year, the Energy Department’s Stockpile Stewardship and Management Plan formally described the objective of the fuze modernization program “to enable W76 to take advantage of [the] higher accuracy of [the] D5 missile.” By 1998, the fuze modernization effort became a formal project, with five SLBM flight tests planned for 2001-2008. Full-scale production of the super-fuze equipped W76-1/Mk4A began in September 2008, with the first warhead delivered to the Navy in February 2009. By the end of 2016, roughly 1,200 of an estimated 1,600 planned W76-1/Mk4As had been produced, of which about 506 are currently deployed on ballistic missile submarines. The implications. The newly created capability to destroy Russian silo-based nuclear forces with 100-kt W76-1/Mk4A warheads—the most numerous in the US stockpile—vastly expands the nuclear warfighting capabilities of US nuclear forces. Since only part of the W76 force would be needed to eliminate Russia’s silo-based ICBMs, the United States will be left with an enormous number of higher-yield warheads that would then be available to be reprogrammed for other missions. Approximately 890 warheads are deployed on US ballistic missile submarines (506 W76-1/Mk4A and 384 W88/Mk5). Assuming that the 506 deployed W76-1s equipped with the super-fuze were used against Russian silo-based ICBMs, essentially all 136 Russian silo-based ICBMs could be potentially eliminated by attacking each silo with two W76-1 warheads—a total of 272 warheads. This would consume only 54 percent of the deployed W76-1 warheads, leaving roughly 234 of the 500 warheads free to be targeted on yet other installations. And hundreds of additional submarine warheads are in storage for increasing the missile warhead loading if so ordered. The Trident II missiles that are deployed today carry an average of four to five W76-1 warheads each. However, each missile could carry eight such warheads if the US were to suddenly decide to carry a maximum load of W76 warheads on its deployed Trident II ballistic missiles. And the missile was tested with up to 12 warheads. Essentially all the 384 W88 “heavy” Trident II warheads, with yields of 455 kt, would also be available for use against deeply-buried targets. In addition, about 400 Minuteman III warheads, with yields of about 300 kt, could be used to target hardened Russian targets. In all, the entire Russian silo-based forces could potentially be destroyed while leaving the US with 79 percent of its ballistic missile warheads unused. Even after Russia’s silo-based missiles were attacked, the US nuclear firepower remaining would be staggering—and certainly of concern to Russia or any other country worried about a US first strike. Because of the new kill capabilities of US submarine-launched ballistic missiles (SLBMs), the United States would be able to target huge portions of its nuclear force against non-hardened targets, the destruction of which would be crucial to a “successful” first strike. One such mission would likely involve the destruction of road-mobile ICBMs that had left their garrisons to hide in Russia’s vast forests in anticipation of attack. The garrisons and their support facilities would probably be destroyed quickly, and some of the dispersed road-mobile launchers would also be quickly destroyed as they were in the process of dispersing. To destroy or expose the remaining launchers, United States planners would have the nuclear forces needed to undertake truly scorched-earth tactics: Just 125 US Minuteman III warheads could set fire to some 8,000 square miles of forest area where the road-mobile missiles are most likely to be deployed. This would be the equivalent of a circular area with a diameter of 100 miles. Such an attack would be potentially aimed at destroying all road-mobile launchers either as they disperse or after they have taken up position some short distance from roads that give them access to forested areas. Many of the nearly 300 remaining deployed W76 warheads could be used to attack all command posts associated with Russian ICBMs. A very small number of Russia’s major leadership command posts are deeply buried, to protect them from direct destruction by nuclear attack. The US military would likely reserve the highest-yield warheads for those targets. Figure 7 below shows an example of a structure that is roughly the size of the US Capitol building that is postulated to have rooms and tunnels as deep as 800 feet or more. Shelters that have rooms and tunnels at even greater depths could be sealed by using multiple nuclear warheads to crater every location where an entrance or exit might conceivably have been built.

#### BMD will absorb any missiles that survive our initial strike

Lieber and Press 6 [Keir, Professor @ Georgetown, Daryl, Professor @ Dartmouth, “The End of MAD? The Nuclear Dimension of U.S. Primacy,” <https://www.mitpressjournals.org/doi/pdf/10.1162/isec.2006.30.4.7>]

MISSILE DEFENSE. U.S. offensive nuclear capabilities will grow as the United States deploys a national missile defense (NMD) system. In 2001 the United States withdrew from the Antiballistic Missile Treaty and began to build a missile shield. The first contingent of NMD interceptors was deployed in 2004, but this step is only the starting point for a large, multilayered missile defense system. To this end, the United States has doubled investment in missile defense and accelerated research and development on a range of land-, air-, sea-, and space-based missile defense systems.52 Opponents of national missile defense raise two important critiques regarding its feasibility. First, they note that even a few hundred incoming warheads would overwhelm any plausible defense. Second, a missile defense system based on intercepting warheads outside the Earth’s atmosphere is impractical because it is extremely difficult to differentiate decoys from warheads in space.53 Although both criticisms are cogent, even a limited missile shield could be a powerful complement to the offensive capabilities of U.S. nuclear forces. Russia has approximately 3,500 strategic nuclear warheads today, but if the United States struck before Russian forces were alerted, Russia would be lucky if a half-dozen warheads survived. A functioning missile defense system could conceivably destroy six warheads. Furthermore, the problem of differentiating warheads from decoys becomes less important if only a handful of surviving enemy warheads and decoys are left to intercept. Facing a small number of incoming warheads and decoys, U.S. interceptors could simply target them all.

#### Their aircraft and submarines are a joke --- we’d crush them

Rogan 18 [Tom, a senior fellow with the Steamboat Institute, MSc in Middle Eastern Politics from the School of Oriental and African Studies @ Kings College, and a Graduate Diploma in Law from The College of Law in London, “Don't worry, the US would win a nuclear war with Russia,” Washington Examiner, <https://www.washingtonexaminer.com/opinion/dont-worry-the-us-would-win-a-nuclear-war-with-russia>]

Do not be alarmed by Russia's announcement of production on a new nuclear-armed intercontinental ballistic missile. While the ICBM, RS-28 Sarmat, will likely be operational within the next few years, it will not change the nuclear strike balance of power in Russia's favor. In a nuclear war with Russia, U.S. victory would remain the most likely outcome. That's primarily because the U.S. has better potential to get more nuclear warheads onto Russian targets than Russia could get onto U.S. targets. The extension here is that while both nations retain a triad of nuclear strike forces -- ICBM-armed ground bases, aircraft, and submarines -- Russia would struggle to utilize the aircraft and submarine components effectively. For a start, Russia's strategic bomber force is aged and nonstealth in nature. While the Russians are attempting to upgrade these capabilities, they are [a long way](https://www.washingtonexaminer.com/blowing-28-billion-on-10-strategic-bombers-putin-proves-his-egotistical-strategic-flaws) from being able to rival U.S.-equivalent platforms such as the B-2 bomber. Correspondingly, in the event of war, Russian strategic bombers would find themselves highly vulnerable to detection, interception, and destruction by U.S. fighter interceptors. Similarly, Russian nuclear strategic submarine, or SSBN, forces are also less adept than their U.S. counterparts. Yes, the Russians have developed a relatively new class of SSBN, the Borei class, but that program has been delayed repeatedly and only three boats are currently operational. While the Russian Navy has ten other SSBNs, all those boats were built in the Soviet era and they struggle with maintenance issues. They are also loud. That matters in better enabling U.S. intelligence services to monitor the location of Russia's SSBN force at all times. In war, this would enable U.S. Virginia class attack submarines to hunt and kill the Russian fleet before they reached their launch patrol sectors. In a crisis, the U.S. would surge its attack submarines to ensure redundant capability. Moreover, the U.S. Navy is considering placing nuclear-armed missiles on some of its Virginia class attack submarines and is actively developing a next generation SSBN boat, the Columbia class. The second weakness of Russian nuclear forces is that they are underfunded and less competent than their U.S. counterparts. Put simply, their equipment is less reliable, less available, and their leadership lower in quality. This is a problem for Russia in that the exigency of effective nuclear strike command, control, and operational competency is impossible to overstate. If one unit fails to deliver on its mission, an adversary could launch a counterstrike or its second wave strikes.

#### Err neg --- all of their evidence comes from the position that civilian deaths are unacceptable, but all we actually need to win is that it doesn’t cause extinction

Kroenig 17 [Matthew Kroenig is an associate professor in the Department of Government and School of Foreign Service at Georgetown University and a senior fellow in the Brent Scowcroft Center on International Security at the Atlantic Council, Summer 2017, “The Limits of Damage Limitation,”]

In “Should the United States Reject MAD?” Charles Glaser and Steve Fetter argue that the United States should forgo a damage-limitation capability against China’s strategic forces.1 To arrive at this conclusion, however, they underestimate the advantages of a [End Page 199] damage-limitation strategy and do not even consider more feasible and desirable policy options for a strategic equilibrium with China. When these steps are corrected, it becomes clear that the United States should not forgo this capability. Rather, it should preserve its damage-limitation capability and quantitative nuclear superiority over China, while accepting the inevitability of China’s possession of an assured nuclear retaliatory capability. Glaser and Fetter begin by making the conceptual mistake of searching for an arbitrary threshold for meaningful damage limitation. In doing so, they underestimate the value of limiting damage in the event of nuclear war. Glaser and Fetter are correct that completely denying China’s nuclear deterrent is increasingly difficult if not impossible as China expands and modernizes its arsenal, but this is an unnecessarily high bar. Damage limitation is better conceived of as a continuous, not a binary, variable. There is no magical threshold beyond which the ability to limit damage in a nuclear war ceases to matter. Any U.S. president would want to protect as much of the country as possible in the event of a nuclear exchange, and any damage-limitation capability (even far below the threshold set by Glaser and Fetter) would therefore be valuable. To argue otherwise, one would have to argue that saving millions of American lives is unimportant or politically irrelevant, which is an untenable position.

### ---AT: Tunnels

#### We know all about their tunnels

Kristensen et al. 17 [Hans, Associate Senior Fellow with the SIPRI Disarmament, Arms Control and Non-proliferation Programme, director of the Nuclear Information Project with the Federation of American Scientists, co-author to the world nuclear forces overview in the SIPRI Yearbook (Oxford University Press) and a frequent adviser to the news media on nuclear weapons policy and operations, “How US nuclear force modernization is undermining strategic stability: The burst-height compensating super-fuze,” Bulletin of the Atomic Scientists, <https://thebulletin.org/2017/03/how-us-nuclear-force-modernization-is-undermining-strategic-stability-the-burst-height-compensating-super-fuze>]

The US nuclear forces modernization program has been portrayed to the public as an effort to ensure the reliability and safety of warheads in the US nuclear arsenal, rather than to enhance their military capabilities. In reality, however, that program has implemented revolutionary new technologies that will vastly increase the targeting capability of the US ballistic missile arsenal. This increase in capability is astonishing—boosting the overall killing power of existing US ballistic missile forces by a factor of roughly three—and it creates exactly what one would expect to see, if a nuclear-armed state were planning to have the capacity to fight and win a nuclear war by disarming enemies with a surprise first strike. Because of improvements in the killing power of US submarine-launched ballistic missiles, those submarines now patrol with more than three times the number of warheads needed to destroy the entire fleet of Russian land-based missiles in their silos. 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The combination of this lack of Russian situational awareness, dangerously short warning times, high-readiness alert postures, and the increasing US strike capacity has created a deeply destabilizing and dangerous strategic nuclear situation. When viewed in the alarming context of deteriorating political relations between Russia and the West, and the threats and counter-threats that are now becoming the norm for both sides in this evolving standoff, it may well be that the danger of an accident leading to nuclear war is as high now as it was in periods of peak crisis during the Cold War. How the new accuracy-enhancing fuze works. The significant increase in the ability of the W76-1/Mk4A warhead to destroy hardened targets—including Russian silo-based ICBMs—derives from a simple physical fact: Explosions that occur near and above the ground over a target can be lethal to it. This above-target area is known as a “lethal volume”; the detonation of a warhead of appropriate yield in this volume will result in the destruction of the target. The recognition that the killing power of the W76 warhead could be vastly increased by equipping it with a new fuze was discussed in a 1994 alternate warhead study conducted by the Defense and Energy departments. The study calculated the number of warheads that would be needed for the W76 to attack the Russian target base, if START II were implemented. At the time, W76/Mk4 warheads had a fixed height-of-burst fuze (meaning the fuze could not adjust its detonation at an optimal location if it were falling short or long of a target). With those fixed-height fuzes, submarine-launched nuclear missiles were mainly aimed at softer targets such as military bases. But the study found that an enhanced Mk4A reentry-body with a new fuze that provided for an adjustable height-of-burst as it arrives would have significant capabilities against harder targets, compared to warheads with the earlier fuzes. The study assumed that a smaller number of Mk4 nuclear warheads with higher killing power per warhead could cover the Russian target base and be more effective than multiple attacks on targets with less destructive warheads. In other words, an enhanced fuze would allow the United States to reduce the number of warheads on its ballistic missile submarines, but increase the targeting effectiveness of the fleet. Figure 2 illustrates the kill distribution of US submarine-launched nuclear missiles equipped with the earlier, fixed height-of-burst fuzes. The dome-shaped volume outlined in gray shows the lethal volume within which a 100-kiloton nuclear explosion will generate 10,000 pounds per square inch or more of blast pressure on the ground. In other words, if a target on the ground cannot survive a blast of 10,000 pounds per square inch or more, it will be destroyed if a 100-kt nuclear weapon detonates anywhere within that dome-shaped volume. To show the physical relationship of the lethal volume for a particular ground target of interest—in this case a Russian SS-18 ICBM silo—Figure 2 was drawn to scale. Also shown to scale is the approximate spread of warhead trajectories that correspond to a missile that is accurate to 100 meters, a miss distance roughly the same as what is achieved by the Trident II sea-launched ballistic missile. Miss distances are typically characterized in terms of a quantity called the “circular error probable,” or CEP, which is defined as the radius of a circle around the aim point within which half of the warheads aimed at a target are expected to impact. In the case of a Trident II 100-kt W76-1 ballistic missile warhead, the lethal distance on the ground and the CEP are roughly equal. As a result, roughly half of the warheads equipped with the old, fixed-height fuze system could be expected to fall close enough to detonate on the ground within the lethal range. The new super-fuze for W76-1/Mk4A has a flexible height-of-burst capability that enables it to detonate at any height within the lethal volume over a target. Figure 3 shows how the new fuze vastly increases the chances that the target will be destroyed, even though the arriving warheads have essentially the same ballistic accuracy. The super-fuze is designed to measure its altitude well before it arrives near the target and while it is still outside the atmosphere. This measurement would typically be taken at an altitude of 60 to 80 kilometers, where the effects of atmospheric drag are very small. At this point, the intended trajectory is known to very high precision before the warhead begins to substantially slow from atmospheric drag. If the warhead altitude measured by the super-fuze at that time were exactly equal to the altitude expected for the intended trajectory, the warhead would be exactly on target. But if the altitude were higher than expected, the warhead could be expected to hit beyond the intended aim point. Likewise, if the altitude is lower than that expected, the warhead would likely hit short of the intended aim point. Testing has established the statistical shape and orientation of the expected spread of warhead locations as they fly towards the target. In the case of Trident II, the spread of trajectories around the intended trajectory is so small that the best way to increase the chances of detonating inside the lethal volume is to intentionally shift the aim point slightly beyond the location of the target. (Note that the intended trajectory in Figure 3 is shifted slightly down range.) By shifting the aim point down range by a distance roughly equal to a CEP, warheads that would otherwise fall short or long of the target using the conventional Mk4 fuze instead will detonate—at different heights dictated by the super fuze—within the lethal volume above a target. This shift in the down-range aim point will result in a very high percentage of warheads that overfly the target detonating in the lethal volume. The end result is that with the new Mk4A super-fuze, a substantially higher percentage of launched warheads detonate inside the lethal volume, resulting in a considerable increase in the likelihood that the target is destroyed. The ultimate effect of the super fuze’s flexible burst-height capability is a significantly increased target kill probability of the new W76-1/Mk4A warhead compared with the conventional warhead of the same type. Figure 4 shows the probability that warheads will detonate close enough to destroy the ground-target for both the conventional fuze and the super-fuze. As can be seen from figure 4, the probability of kill using a submarine-launched warhead with the new super-fuze (W76-1/Mk4A) is about 0.86. This 86 percent probability is very close to what could be achieved using three warheads with conventional fuzes to attack the same target. To put it differently: In the case of the 100-kt Trident II warhead, the super fuze triples the killing power of the nuclear force it has been applied to. Many Russian targets are not hardened to 10,000 pounds per square inch blast overpressure. Figure 5 shows the same probability of kill curves for the case of a target that is only hard to 2,000 pounds per square inch or more of blast overpressure, which is the actual case for almost all targets hardened to nuclear attack—ICBMs and supporting command posts, hardened structures at strategic airbases, submarines at pierside or in protected tunnels, hardened command posts at road mobile missile bases and elsewhere, etc. In this case, the super-fuze achieves a probability of kill of about 0.99—or very near certainty. This case also is equivalent to achieving a probability of kill associated with using three warheads with a 0.83 probability to achieve a 0.99 probability of kill. The probability of kills revealed by figures 4 and 5 have enormous security ramifications. The US military assumes that Russian SS-18 and TOPOL missile silos are hardened to withstand a pressure of 10,000 pounds per square inch or more. Since with the new super-fuze, the probability of kill against these silos is near 0.9, the entire force of 100-kt W76-1/Mk4A Trident II warheads now “qualifies” for use against the hardest of Russian silos. This, in turn, means that essentially all of the higher-yield nuclear weapons (such as the W88/Mk5) that were formerly assigned to these Russian hard targets can now be focused on other, more demanding missions, including attacks against deeply-buried underground command facilities. In effect, the significant increase in the killing power of the W76 warhead allows the United States to use its submarine-based weapons more decisively in a wider range of missions than was the case before the introduction of this fuze. The history of the US super-fuze program. The super-fuze is officially known as the arming, fuzing and firing (AF&F) system. It consists of a fuze, an arming subsystem (which includes the radar), a firing subsystem, and a thermal battery that powers the system. The AF&F is located in the tip of the cone-shaped reentry body above the nuclear explosive package itself. The AF&F developed for the new W76-1/Mk4A is known as MC4700 and forms part of the W76 life-extension program intended to extend the service life of the W76—the most numerous warhead in the US stockpile—out to the time period 2040-2050. The new super-fuze uses a technology first deployed on the high-yield W88/Mk5 Trident II warhead. The Navy’s Strategic Systems Program contracted with the Lockheed Missile and Space Corporation in the early 1980s to develop a new fuze that included “a radar-updated, path-length compensating fuze … that could adjust for trajectory errors and significantly improve the ability to destroy a target. This was an early and sophisticated use of artificial intelligence in a weapon.” It was the radar-updated, path-length compensating fuze—combined with the increased accuracy of the Trident II missile—that gave an SLBM the ability to hold a hardened target at risk. Efforts to incorporate the W88/Mk5 fuze capability into the W76/Mk4 was part of the Energy Department’s Warhead Protection Program in the mid-1990s to permit “Mk5 fuzing functionality (including radar-updated path length fuzing, and radar proximity fuzing) as an option to replacement of the much smaller Mk4 AF&F,” according to the partially declassified 1996 Stockpile Stewardship and Management Plan (emphasis added). Apart from the inherent drive to improve military capabilities whenever possible, the motivation for increasing the target kill capability of the submarine-borne W76 was that the Air Force’s hard-target killer, the MX Peacekeeper ICBM, was scheduled to be retired under the START II treaty. The Navy only had 400 W88 hard-target kill warheads, so a decision was made to add the capability to the W76. In an article in April 1997, Strategic Systems Program director Rear Adm. George P. Nanos publicly explained that “just by changing the fuze in the Mk4 reentry body, you get a significant improvement. The Mk4, with a modified fuze and Trident II accuracy, can meet the original D5 [submarine-borne missile] hard target requirement,” [Nanos stated](https://fas.org/wp-content/uploads/sites/4/W76nanos.pdf). Later that same year, the Energy Department’s Stockpile Stewardship and Management Plan formally described the objective of the fuze modernization program “to enable W76 to take advantage of [the] higher accuracy of [the] D5 missile.” By 1998, the fuze modernization effort became a formal project, with five SLBM flight tests planned for 2001-2008. Full-scale production of the super-fuze equipped W76-1/Mk4A began in September 2008, with the first warhead delivered to the Navy in February 2009. By the end of 2016, roughly 1,200 of an estimated 1,600 planned W76-1/Mk4As had been produced, of which about 506 are currently deployed on ballistic missile submarines. The implications. The newly created capability to destroy Russian silo-based nuclear forces with 100-kt W76-1/Mk4A warheads—the most numerous in the US stockpile—vastly expands the nuclear warfighting capabilities of US nuclear forces. Since only part of the W76 force would be needed to eliminate Russia’s silo-based ICBMs, the United States will be left with an enormous number of higher-yield warheads that would then be available to be reprogrammed for other missions. Approximately 890 warheads are deployed on US ballistic missile submarines (506 W76-1/Mk4A and 384 W88/Mk5). Assuming that the 506 deployed W76-1s equipped with the super-fuze were used against Russian silo-based ICBMs, essentially all 136 Russian silo-based ICBMs could be potentially eliminated by attacking each silo with two W76-1 warheads—a total of 272 warheads. This would consume only 54 percent of the deployed W76-1 warheads, leaving roughly 234 of the 500 warheads free to be targeted on yet other installations. And hundreds of additional submarine warheads are in storage for increasing the missile warhead loading if so ordered. The Trident II missiles that are deployed today carry an average of four to five W76-1 warheads each. However, each missile could carry eight such warheads if the US were to suddenly decide to carry a maximum load of W76 warheads on its deployed Trident II ballistic missiles. And the missile was tested with up to 12 warheads. Essentially all the 384 W88 “heavy” Trident II warheads, with yields of 455 kt, would also be available for use against deeply-buried targets. In addition, about 400 Minuteman III warheads, with yields of about 300 kt, could be used to target hardened Russian targets. In all, the entire Russian silo-based forces could potentially be destroyed while leaving the US with 79 percent of its ballistic missile warheads unused. Even after Russia’s silo-based missiles were attacked, the US nuclear firepower remaining would be staggering—and certainly of concern to Russia or any other country worried about a US first strike. Because of the new kill capabilities of US submarine-launched ballistic missiles (SLBMs), the United States would be able to target huge portions of its nuclear force against non-hardened targets, the destruction of which would be crucial to a “successful” first strike. One such mission would likely involve the destruction of road-mobile ICBMs that had left their garrisons to hide in Russia’s vast forests in anticipation of attack. The garrisons and their support facilities would probably be destroyed quickly, and some of the dispersed road-mobile launchers would also be quickly destroyed as they were in the process of dispersing. To destroy or expose the remaining launchers, United States planners would have the nuclear forces needed to undertake truly scorched-earth tactics: Just 125 US Minuteman III warheads could set fire to some 8,000 square miles of forest area where the road-mobile missiles are most likely to be deployed. This would be the equivalent of a circular area with a diameter of 100 miles. Such an attack would be potentially aimed at destroying all road-mobile launchers either as they disperse or after they have taken up position some short distance from roads that give them access to forested areas. Many of the nearly 300 remaining deployed W76 warheads could be used to attack all command posts associated with Russian ICBMs. A very small number of Russia’s major leadership command posts are deeply buried, to protect them from direct destruction by nuclear attack. The US military would likely reserve the highest-yield warheads for those targets. Figure 7 below shows an example of a structure that is roughly the size of the US Capitol building that is postulated to have rooms and tunnels as deep as 800 feet or more. Shelters that have rooms and tunnels at even greater depths could be sealed by using multiple nuclear warheads to crater every location where an entrance or exit might conceivably have been built.

### ---AT: BMD Fails

#### BMD works against an ICBM attack

Gates 10 [Robert, Ph.D. in Russian and Soviet history @ Georgetown University, Air Force officer, was Director of Central Intelligence under President George H. W. Bush, US Secretary of Defense, “Report to Congress on Assessment of the Ground-Based Midcourse Defense Element of the Ballistic Missile Defense System,” <https://www.hsdl.org/?abstract&did=14313>]

The United States is currently protected against limited ICBM attacks. This is a result of investments made over the past decade in a system based on ground-based midcourse defense (GMD). Because of continuing improvements in the GMD system and the number of ground-based interceptors now deployed compared to potential North Korean and Iranian long-range ballistic missile capabilities, the United States possesses a capability to counter the projected threat from North Korea and Iran for the foreseeable future. Given uncertainty about the future ICBM threat, including the rate at which it will mature, it is important that the United States maintain this advantageous position. But doing so does not require that the United States develop these capabilities at the same accelerated rate or with the same level of risk as in recent years. Rather, the United States will refocus its homeland ballistic missile defense program as it began to do with the fiscal year (FY) 2010 budget—maintaining the current level of capability with 30 ground-based interceptors (GBIs) and further developing proven capabilities that will enhance homeland defense should a new threat emerge.

#### Protected now – AND, their evidence doesn’t assume new discrimination capabilities

CAS 15 [Committee on Armed Services, US Congress, “NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2016,” <https://www.congress.gov/114/crpt/srpt49/CRPT-114srpt49.pdf>]

The committee notes that the currently deployed ground-based midcourse missile defense system protects the entire United States homeland, including the East Coast, against the threat of limited ballistic missile attack from North Korea and Iran. In testimony to the committee on March 25, 2015, the Director of the Missile Defense Agency stated, ‘‘the discrimination capability of the system’’ is one of the ‘‘two fundamental means for improving homeland missile defense capability and capacity.’’ Furthermore, according to the Director of the Missile Defense Agency, long-range discrimination radar will provide larger hit assessment coverage, thereby enabling improved warfighting capabilities to manage ground-based interceptor inventory and improve the capacity of the ballistic missile defense system. The Department of Defense will deploy by 2020 a new midcourse tracking radar to provide persistent coverage and improve discrimination capabilities against threats to the United States homeland from the Pacific, an action this committee endorses.

#### We have workable missile defense now – BUT, the asymptote of our limits to tech advancement is coming in less than 10 years – so war now is key

Meisel 17 [Collin, Major General John G. Rossi Military Fellow at the Missile Defense Advocacy Alliance and a McCourt Fellow and Master of Public Policy Candidate at Georgetown University's McCourt School of Public Policy, "Stopping the Unstoppable: How will the U.S. Defeat Missiles of the Future?", RCD, <https://www.realcleardefense.com/articles/2017/04/04/stopping_the_unstoppable_how_will_the_us_defeat_missiles_of_the_future_111095.html>]

Earlier this year, former U.S. Chief of Naval Operations Admiral Jonathan Greenert [asserted](http://missiledefenseadvocacy.org/alert/a-clear-coherent-architecture/) that current ballistic missile defense technology would "reac[h] the asymptote of our limits” within “about ten years.” This fact stands in stark contrast to another cold reality: the offensive ballistic missile capabilities of U.S. adversaries only appear to be accelerating. Despite critics’ [calls](http://www.latimes.com/nation/la-na-missile-defense-unlimited-20161221-snap-20161221-story.html) to shy away from investing in ballistic missile defense (BMD) to address this threat, the U.S. must continue to vigorously research and develop revolutionary BMD technologies. Otherwise, it risks allowing the balance of offensive and defensive ballistic missile capabilities to grow increasingly asymmetric as defensive technological progress becomes asymptotic. As then-Commanding General of U.S. Army Space and Missile Defense Command Lieutenant General David L. Mann [testified](https://www.armed-services.senate.gov/imo/media/doc/Mann_04-13-16.pdf) before the Senate Armed Services Strategic Forces Subcommittee last April, “many foreign ballistic and cruise missile systems are progressively incorporating advanced countermeasures” to defeat present BMD systems. For example, along with integrating “maneuverable reentry vehicles, [maneuverable independent reentry vehicles], decoys, chaff, jamming, and thermal shielding” technologies into its ballistic missile arsenal, [China](https://www.defense.gov/Portals/1/Documents/pubs/2016%20China%20Military%20Power%20Report.pdf) has constructed the world’s largest hypersonic wind tunnel to realize its goal of developing a hypersonic re-entry vehicle. Russia [reportedly](http://thediplomat.com/2016/09/russia-to-field-hypersonic-weapons-by-2020/) has plans to deploy its own hypersonic glide vehicle by 2020. For context, these hypersonic weapons can travel at [speeds](http://gizmodo.com/chinas-new-hypersonic-missile-can-scream-past-us-air-d-1501458331) up to Mach 10 – more than double the speed of most current BMD systems. In light of these developments, Keith B. Payne, head of Missouri State University’s Graduate Department of Defense and Strategic Studies, has [postulated](https://csis-prod.s3.amazonaws.com/s3fs-public/publication/170228_Karako_MissileDefenseDefeat_Web.pdf?.oYEfXIARU6HCqtRN3Zuq7mKljU3jIlq) that “U.S. ICBM survivability will once again become a concern” if nothing is done. Given the [central role](http://www.realcleardefense.com/articles/2017/01/11/strategic_stability_and_the_critical_value_of_americas_icbms_110614.html), ICBMs play in nuclear deterrence, this is a scary prospect indeed. How will the U.S. address the looming gap in BMD capabilities? The Missile Defense Agency (MDA) is developing three primary solutions: directed energy weapons, railguns, and “left-of-launch” capabilities. Directed energy weapons (DEW), including lasers and high-power microwaves, provide one potential answer to the threat posed by hypersonic glide vehicles and other ballistic missile enhancements. [DEW](https://my.nps.edu/documents/105988579/106076800/SEA-19B_DEW_Final_Report.pdf/eaaa7ba9-fe90-4bb5-9522-1efd6b1358f3) provides the ability to engage targets at the speed of light, but are limited to line-of-sight engagements and must overcome [atmospheric attenuation](http://calhoun.nps.edu/bitstream/handle/10945/42628/14Jun_Fussman_Chris.pdf?sequence=1) caused by inclement weather or scattering from [intentionally released](http://www.popsci.com/china-plans-to-defeat-american-lasers-with-smoke) high albedo gasses. MDA is actively working to overcome these challenges and eventually plans to “deploy lasers on high altitude, long endurance Unmanned Aerial Vehicle (UAV) platforms,” [according](https://www.armed-services.senate.gov/imo/media/doc/Syring_04-13-16.pdf) to MDA Director Vice Admiral James D. Syring. Utilized for boost-phase intercept – which engages targets before they reach hypersonic speeds or enable other countermeasures – this system has the potential to revolutionize BMD. Railguns, another platform currently being explored by MDA, also act to close the speed gap created by hypersonic attacks. Presently capable of firing projectiles reaching speeds beyond Mach 5, [railguns](http://www.janes.com/article/60546/general-atomics-commits-private-funding-to-develop-10-mj-medium-range-railgun) allow for multiple attempts at destroying missiles as they approach. While current railgun systems face [questions](http://www.popularmechanics.com/military/weapons/a21174/navy-electromagnetic-railgun/) regarding the endurance of their components, the ability to engage fast-moving targets on their final approach remains a vital component of MDA’s [full spectrum](https://www.mda.mil/system/elements.html) BMD system. Finally, left-of-launch capabilities – methods meant to stop a missile attack before it can take place, including cyber weapons – “remain a novel adjunct to wider antimissile efforts,” [according](https://www.nytimes.com/2017/03/04/world/asia/left-of-launch-missile-defense.html?_r=0) to former Vice Chairman of the Joint Chiefs Admiral James A. Winnefield Jr. In fact, there has been some [speculation](https://www.nytimes.com/2017/03/22/world/asia/north-korea-missile-launch-failure.html) whether cyber weapons were used to thwart North Korea’s failed missile test on March 22 of this year. Regardless of the role left-of-launch tactics play in MDA’s BMD toolkit, the unlikelihood that the U.S. will be able to stay ahead of every attack means, according to Winnefield, there will always be a need for a “solid right-of-launch capability.” None of this is to say that development and deployment of the BMD technologies described above will mark an end to the missile proliferation threat as we know it. It will not. However, it will narrow the gap between offensive and defensive ballistic missile capabilities, and provide a modicum of stability to regions presently outside of an effective BMD umbrella. If Admiral Greenert’s estimation is to be heeded, the U.S. has less than ten years until it lies outside of this umbrella as well. The clock is ticking.

### ---AT: Lieber/Press Bad

#### Their model uses publicly accessible standard data – and DOESN’T exaggerate

Lieber and Press 6 [Keir, Professor @ Georgetown, Daryl, Professor @ Dartmouth, “The Rise of U.S. Nuclear Primacy”, <https://www.foreignaffairs.com/articles/united-states/2006-03-01/rise-us-nuclear-primacy>]

According to our model, such a simplified surprise attack would have a good chance of destroying every Russian bomber base, submarine, and ICBM. [See Footnote #1] This finding is not based on best-case assumptions or an unrealistic scenario in which U.S. missiles perform perfectly and the warheads hit their targets without fail. Rather, we used standard assumptions to estimate the likely inaccuracy and unreliability of U.S. weapons systems. Moreover, our model indicates that all of Russia's strategic nuclear arsenal would still be destroyed even if U.S. weapons were 20 percent less accurate than we assumed, or if U.S. weapons were only 70 percent reliable, or if Russian ICBM silos were 50 percent "harder" (more reinforced, and hence more resistant to attack) than we expected. (Of course, the unclassified estimates we used may understate the capabilities of U.S. forces, making an attack even more likely to succeed.)

#### Their research is sound, important, and verifiable – and no impact to minor exaggeration

Ludvik 17 [Jan, Assistant Professor at the Department of Security Studies and a researcher at the Center for Security Policy, Charles University in Prague, "ISSF Article Review 88 on “The New Era of Counterforce: Technological Change and the Future of Nuclear Deterrence,” No Publication, <https://networks.h-net.org/node/28443/discussions/526933/issf-article-review-88-%E2%80%9C-new-era-counterforce-technological-change>]

More than ten years ago Kier A. Lieber and Daryl G. Press forged a productive co-authorship and in “The End of MAD? The Nuclear Dimension of U.S. Primacy” questioned entrenched beliefs about the strategic nuclear balance supposedly existing between the United States and Russia. They then warned that “for the first time in decades, it [United States] could conceivably disarm the long-range nuclear arsenals of Russia or China with a nuclear first strike.”[1] In “The New Era of Counterforce: Technological Challenge and the Future of Nuclear Deterrence,” Lieber and Press return to the topic of the survivability of modern nuclear forces. To Lieber and Press, nuclear deterrence no longer appears. Their sobering analysis of the impacts of ongoing technological changes on the survivability of nuclear forces demonstrates an increased possibility of counterforce attacks. Technological changes, from minor improvements to major breakthroughs like the development of intercontinental ballistic missiles (ICBMs), hardened missile silos, multiple independent reentry vehicle warheads (MIRVs), and submarine launched ballistic missiles (SLBMs), were major driving forces shaping American and Soviet nuclear postures and expected deterrence requirements for a better part of the Cold War. Both superpowers committed enormous resources to constantly improving their nuclear arsenals. As the superpowers’ arsenals were growing in size to the tens of thousands, too many scholars and pundits started to take it for granted that sufficient capacities to deliver nuclear retaliation would be always available. By a fresh contribution discussing the impacts of technological development on the nuclear-armed state’s capacity to fulfill the threat of nuclear retaliation, which is the cornerstone of nuclear deterrence, Lieber and Press bring a welcome advancement of the debate about nuclear deterrence in the twenty-first century. They argue that hardening, concealment, and redundancy – three legs that have historically helped ensure survivability of nuclear arsenals vis-à-vis any realistic attempts to destroy them in the first strike – are steadily being undermined.[2] First, hardening seems an increasingly unviable strategy for protecting nuclear forces due to the increased accuracy of modern nuclear weapons’ delivery systems. Even hardened structures like ICBM silos cannot typically survive a direct hit by a nuclear weapon. Reinforced structures can protect missiles, bombers, and command and control facilities from incoming weapons exploding close to the target, but not from those exploding very close to it. Lieber and Press illustrate the effects of improved accuracy with an example of the evolution of the U.S. nuclear arsenal from 1985 to 2017. Whereas roughly a quarter of the 1985 ICBMs and virtually all of the 1985 SLBMs would have missed small hardened targets like the enemy’s ICBM silos, and exploded too far from the target to destroy it, there would be no missed targets today (19-21). Hence, usefulness of hardening for a nuclear force protection wanes against highly accurate weapons. Lieber and Press further argue that increased accuracy of nuclear weapons eliminates the problem of ‘fratricide’ that prevents further immediate attacks on the same target.[3] Even today, some attacking weapons will likely fail, but no will miss. Since no targets will be missed in a modern nuclear first strike, there will also be no fratricide. Therefore, more than one attacking weapon can be assigned to any single target to compensate for a weapon that might fail in flight, and consequently all targets that can be located can also be destroyed (21-27). Furthermore, the increased accuracy lets the attacker use lower-yield nuclear weapons. Accurate low yield weapons can be set to explode above the fallout threshold and still destroy a hardened target. Without nuclear fallout, the likely number of civilian causalities of a nuclear first strike drops radically (27-32). The cumulative effects of increased accuracy introduce a novel strategic situation when it is possible to destroy the enemy’s hardened nuclear arsenal with few civilian casualties, a development that greatly enhances the attractiveness of the first strike, especially during a crisis. The second common strategy to protect a nuclear arsenal, mobility and concealment, is undermined by improvements in remote sensing. Traditional sensor platforms like satellites and manned aircraft are improved and supplemented by new systems such as remotely piloted aircraft, underwater drones, autonomous sensors, and cyberspying. State-of-the-art sensors collect “a widening array of signals for analysis using a growing list of techniques” and, in contrast to the Cold-War generation of sensors, the twenty-first century monitoring is persistent and data are transmitted in the real time (33). The aggregate effects of this development put the survivability of systems like submarines and mobile missile launchers in jeopardy. These systems have always been relatively easy to destroy, but historically it had been nearly impossible to locate all of them. Lieber and Press argue that modern sensors make locating and destroying possible. However persuasive Lieber and Press’s analysis of the effects of the revolution in remote sensing is, it is not without some imperfections. For instance, the heavy secrecy that shrouds the real capabilities of modern nuclear submarines and their opponents’ capabilities in anti-submarine warfare (ASW) precludes Lieber and Press from using current data to assess how vulnerable the submarines are. They must rely on the data about the vulnerability of Soviet Cold-War submarines to the United States’ ASW capabilities to support their general argument about the vulnerability of this weapon’s platform. Consequently, the article can show how vulnerable the submarines were and illustrate how vulnerable the submarines could be, but it remains uncertain how vulnerable they actually are. While logically sound, Lieber and Press’s deductive argument about the vulnerability of modern submarines is inevitably not without some speculation. It is also possible to argue that a reader can easily get a somewhat exaggerated impression about the degree of vulnerability of mobile missiles launchers to remote detection. Whereas Lieber and Press provide an impressive geospatial analysis of the possible remote-sensing coverage of North Korea’s road network to show how vulnerable North Korea’s mobile missiles are to detection and subsequent destruction, in a footnote they admit that such results cannot be directly applied to much bigger countries like Russia and China (fn. 98). Yet while the degree of vulnerability of submarines and mobile launchers to detection might have been slightly exaggerated, Lieber and Press certainly identify the trends that unequivocally undermine nuclear arsenals’ survivability. Furthermore, Lieber and Press rightly point out that the development of conventional arms, a trend out of the scope of their study, puts the survivability of nuclear forces in a further jeopardy. In fact, the increasing usefulness of conventional weapons in nuclear counterforce might be – at least in the long term – an even greater challenge to the survivability of nuclear arsenals than similar improvements in the accuracy of nuclear weapons. The historical data from past crises when a preventive strike against nuclear arsenal was contemplated show that would-be attackers tend to harbor strong preferences for conventional weapons to knock out the enemy’s nuclear arsenal.[4] With the pinpoint accuracy of modern conventional weapons, even hardened targets such as ICBM silos can be knocked out in a conventional strike.[5] Arguably, great powers will be able to maintain highly survivable nuclear postures as long as they remain ready to bear the costs. But smaller regional powers might be unable to compete in the possible arms races between increasingly effective first-strike forces and an increasingly difficult nuclear force protection. Then, as Lieber and Press insightfully point out, “in extreme circumstances—for example, if an adversary threatens escalation (or begins to escalate) during a conventional war—the temptation to launch a disarming strike may be powerful” (16). How dangerous and how novel this strategic situation is remains an open question. Lieber and Press identify the trends undermining survivability of nuclear arsenals. Decreased survivability of nuclear forces might be quite a novel challenge for countries like the United States and Russia, whose second- strike forces have been largely considered invulnerable at least since the 1970s. Countries with sophisticated medium-sized nuclear arsenals like France and Britain will face an even greater challenge. Likely the most important question, however, is how the technological change influences already unstable relations between smaller nuclear powers that face much stronger, first strike capable enemies (North Korea is a prime example). For small nuclear powers a dubious survivability is much less novel. Survivability of small nuclear arsenals has always been uncertain, and disarming attacks on the nuclear arsenals of small nuclear powers were contemplated by their stronger enemies. Yet none of the historical crises between a small nuclear power and a first strike-capable great power culminated in a disarming strike on the small nuclear power’s nuclear weapons. Various factors, most prominently conventional deterrence, but also alliance dynamics, norms, and geography contributed to the absence of disarming strikes.[6] The importance of previously stabilizing factors will likely grow with the declining survivability of nuclear arsenals. It remains open to further inquiry how exactly technological changes analyzed by Leiber and Press impact these historical ‘stabilizers’. Lieber and Press’s contribution to the debate about nuclear deterrence is an important one. It points to the trends that will likely shape the international security in years to come and shows what is possible with the state-of-the-art military technologies. Lieber and Press not only answer important questions, but also open equally important ones. Whether we are in the ‘new era of counterforce’ depends on how ‘the technologically possible’ matches ‘the politically desirable.’ This is a pertinent question that needs to be addressed by further research.

### AT: Russia Goes First

#### US would strike first – destroys Russian second-strike capacity and solves the impact

Abramowicz 22 [Victor Abramowicz is PhD candidate and sessional academic at Curtin University, specializing in defense policy and strategy, military technology, security relations in East Asia and Eastern Europe, and military history. He is also the Principal of Ostoya Consulting, which provides advisory and business development services to a range of companies in the defense sector, "Damage limitation and US nuclear strategy", The Interpreter, https://www.lowyinstitute.org/the-interpreter/damage-limitation-and-us-nuclear-strategy] GBS-HW

In particular, while the United States and Russia’s primary aim is to avoid a nuclear war, should this arise both of course still seek to minimize harm to themselves, including by saving the lives of millions of their citizens. In turn, both sought to achieve this imperative in many common ways – such as storing medicines or building civil bunkers.

Yet one key means, referred to as “damage limitation” appears to have only been pursued by America, perhaps because of its extraordinary expense. Damage limitation refers to the vastly complex task of seeking to be able to destroy (mainly by atomic attack) most and ideally all of Russia’s missiles before they are launched, including fixed silo-based and mobile land and sea-based weapons.

Washington’s interest in being able to pre-emptively ruin all these types of rockets is obvious and arguably even benign: they present a threat to millions of US lives. But by potentially successfully seeking such a capability it has also dramatically increased, from Moscow’s perspective, the risk of nuclear war.

This outcome reflects that both sides’ mobile assets in particular have been the crux of stability by enabling an “assured second strike”. That is, by being moveable and hence hard to destroy in an atomic first strike, such weapons helped ensure such an attack would never come as they promised obliteration in return.

In a real nuclear crisis, what would a future president do if advised that America had a possibly fleeting fix on all of Russia’s weapons?

Yet if America is able to target all of Russia’s missiles, this creates an incentive for the United States to try a damage‑limiting preventative attack that otherwise it would never have attempted.

It is within this situation that the Kremlin’s concern over even limited BMD can be placed, as any such defenses further-increase the imperative to attack. So, while some Russian rockets would almost certainly survive a first strike, their reduced numbers are much more likely to be defeated by even a handful of interceptors. And should Washington manufacture more, even out of purely defensive intent, the appeal of a pre-emptive attack increases in turn.

In this light, Moscow’s novel weapons appear much more rational. They do not require unreasonable American malevolence, simply a recognition of Washington’s aim to save US lives.

After all, in a real nuclear crisis, what would a future president do if advised that America had a possibly fleeting fix on all of Russia’s weapons? What if, in such a scenario, Washington realized that Moscow had detected – and might at any moment fire upon – an American attack submarine that had been trailing a Russian missile‑sub, noting such vessels each hold enough warheads to wipe out the United States?

In such situations the incentives to strike first would be enormous. And to offset this grim calculus, even small numbers of BMD-immune weapons can disproportionately rebalance the scales and thus present a sensible investment.

#### C3I entanglement would push the US to nuke first

Zhao et al. 18 [Tong, fellow @ Carnegie, PhD in Science, Technology, and International Affairs @ Georgia Institute of Technology, MA in International Relations @ Tsinghua University, “Reducing the Risks of Nuclear Entanglement,” <https://carnegieendowment.org/2018/09/12/reducing-risks-of-nuclear-entanglement-pub-77236>]

Chinese or Russian non-nuclear strikes against the United States could also spark escalation—a risk that has been overlooked since the Cold War—for reasons other than crisis instability. The risk would be most acute if China or Russia launched non-nuclear attacks against dual-use U.S. C3I assets (including early-warning and communication satellites, as well as ground-based radars and transmitters). Even if conducted exclusively for the purpose of winning (or at least not losing) a conventional war, such non-nuclear attacks could be misinterpreted by Washington as preparations for nuclear use. As a result, Washington might come to believe (wrongly) that it was about to become the victim of a nuclear attack—an effect termed misinterpreted warning. For example, China or Russia might attack U.S. early-warning satellites to enable their regional non-nuclear ballistic missiles (or, perhaps, non-nuclear ICBMs or boost-glide weapons in the future) to penetrate U.S. missile defenses. However, such an attack might be misinterpreted by the United States as an attempt to disable missile defenses designed to protect the homeland against limited nuclear strikes. Even if the United States did not believe that nuclear use by an adversary was imminent, it might still worry that non-nuclear strikes against its dual-use C3I assets could compromise its ability to limit the damage it would suffer if the war turned nuclear at some later point. Such damage-limitation operations, which are an acknowledged part of U.S. nuclear strategy, would probably involve nuclear or non-nuclear attacks on the adversary’s nuclear forces backed up by missile defenses. To have any chance of success, these operations would require very sophisticated C3I capabilities (to target mobile missiles, for example). Attacks on—or even perceived threats to—these C3I assets (many of which are dual use) could lead to concerns in Washington that, unless it took action now, effective damage limitation might be impossible—that is, the damage-limitation window might already have closed—if the war turned nuclear. The United States might respond to either of these concerns in ways that could further escalate the crisis. Washington would probably take steps to protect surviving C3I capabilities. It might, for example, attack anti-satellite weapons that were seen as particularly threatening. Such strikes could prove especially escalatory if they were conducted deeper inside the adversary’s borders than the United States had previously struck. Alternatively, or additionally, Washington might issue explicit or implicit nuclear threats against nuclear use or further attacks on C3I assets. In fact, the 2018 U.S. Nuclear Posture Review even goes so far as to threaten to use nuclear weapons in response to attacks on C3I assets. Risk mitigation will likely prove challenging. China may not want to disentangle its nuclear and non-nuclear forces because doing so might weaken its ability to deter U.S. attacks against the latter and because such disentanglement might prove challenging organizationally for the People’s Liberation Army Rocket Force (which operates China’s land-based nuclear forces). For Russia, the financial costs associated with disentanglement are likely to be a significant barrier. Moreover, inadvertent escalation is not generally regarded as a serious risk in China or Russia. Unfortunately, the belief that inadvertent escalation is unlikely actually makes it more probable because it leaves political and military leaders less inclined, in peacetime, to take steps that could mitigate the risks and more inclined, in wartime, to interpret ambiguous events in the worst possible light. Although there is more acceptance of the possibility of inadvertent escalation in the United States, there is little evidence that the U.S. government and military have fully factored the risks of entanglement into procurement policies and war planning. There is also little evidence that the administration of President Donald Trump is willing to invest significant political capital in reducing the risk of inadvertent escalation.

#### Russia will not go first – history proves

CRS 19 [Congressional Research Service, “Nonstrategic Nuclear Weapons”, <https://www.everycrsreport.com/files/20190117_RL32572_4df6b9c2e0db93313c8fd6a9cf0317d1c50ca37f.html>]

Russia has revised its national security and military strategy several times in the past 20 years, with successive versions appearing to place a greater reliance on nuclear weapons.[81](https://www.everycrsreport.com/files/20190117_RL32572_4df6b9c2e0db93313c8fd6a9cf0317d1c50ca37f.html#fn81) For example, the military doctrine issued in 1997 allowed for the use of nuclear weapons "in case of a threat to the existence of the Russian Federation." The doctrine published in 2000 expanded the circumstances when Russia might use nuclear weapons to include attacks using weapons of mass destruction against Russia or its allies "as well as in response to large-scale aggression utilizing conventional weapons in situations critical to the national security of the Russian Federation."[82](https://www.everycrsreport.com/files/20190117_RL32572_4df6b9c2e0db93313c8fd6a9cf0317d1c50ca37f.html#fn82) In mid-2009, when discussing the revision of Russia's defense strategy that was expected late in 2009 or early 2010, Nikolai Patrushev, the head of Russia's Presidential Security Council, indicated that Russia would have the option to launch a "preemptive nuclear strike" against an aggressor "using conventional weapons in an all-out, regional, or even local war."[83](https://www.everycrsreport.com/files/20190117_RL32572_4df6b9c2e0db93313c8fd6a9cf0317d1c50ca37f.html#fn83) However, when Russia published the final draft of the doctrine, in early 2010, it did not specifically authorize the preemptive use of nuclear weapons. Instead, it stated that "Russia reserves the right to use nuclear weapons in response to a use of nuclear or other weapons of mass destruction against her and (or) her allies, and in a case of an aggression against her with conventional weapons that would put in danger the very existence of the state."[84](https://www.everycrsreport.com/files/20190117_RL32572_4df6b9c2e0db93313c8fd6a9cf0317d1c50ca37f.html#fn84) Instead of expanding the range of circumstances when Russia might use nuclear weapons, this actually seemed to narrow the range, from the 2000 version that allowed for nuclear use "in situations critical to the national security of the Russian Federation" to the current form that states they might be used in a case "that would put in danger the very existence of the state."[85](https://www.everycrsreport.com/files/20190117_RL32572_4df6b9c2e0db93313c8fd6a9cf0317d1c50ca37f.html#fn85) Hence, there is little indication that Russia plans to use nuclear weapons at the outset of a conflict, before it has engaged with conventional weapons, even though Russia could resort to the use of nuclear weapons first, during an ongoing conventional conflict.[86](https://www.everycrsreport.com/files/20190117_RL32572_4df6b9c2e0db93313c8fd6a9cf0317d1c50ca37f.html#fn86) This is not new, and has been a part of Russian military doctrine for years.

#### No way Russia uses nukes first – BUT, the US will

SF 19 ["US Military Doctrine: Nuclear Weapons, Cyber Attacks, Fifth Columns", citing US Defense Secretary Patrick Shanahan and Gen. Joseph Dunford, United States Marine Corps general and the 19th Chairman of the Joint Chiefs of Staff, was also the 36th Commandant of the Marine Corps, https://southfront.org/us-military-doctrine-nuclear-weapons-cyber-attacks-fifth-column]

On March 14, US Defense Secretary Patrick Shanahan and Gen. Joseph Dunford, the Joint Chiefs of Staff chair, [testified before the Senate Armed Services Committee](https://www.c-span.org/video/?458694-1/pentagon-leadership-testifies-presidents-2020-defense-budget-request) on President Donald Trump’s 2020 defense budget request. The chairman of the Joint Chiefs of Staff came out with several important remarks regarding the current US military doctrine and its expected actions in the event of conflict with some “adversary”. Dunford warned against changing the current US military policy which allows the country to be the first to use nuclear weapons during a possible conflict. The general emphasized that he “absolutely” believes that “the current policy is the right policy”. “I wouldn’t make any decisions to simplify an adversary’s decision-making calculus. I can also imagine a few situations where we wouldn’t want to remove that option from the president”, he stressed. Dunford added that cyber weapons will unlikely replace nuclear forces, but stressed that the US should be ready to carry out offensive cyber operations. Describing the need for cyber operations, he mentioned China and Russia as well as cyber attacks allegedly conducted by these two states as the reason behind this need. These remarks come in crouse of the newly appearing US military doctrine, which actively employs nuclear threats, cyber attacks and ‘fifth columns’ in order to contain and defeat supposed US ‘adversaries’. [This doctrine was in details described by the Chief of the General Staff of the Armed Forces of Russia General Valeriy Gerasimov earlier in March](https://southfront.org/vectors-of-development-of-russian-military-strategy-in-current-conditions/). “Pentagon started to develop a qualitatively new strategy of military operations which has already been dubbed the “Trojan horse”. It amounts to active use of the “protest potential of a potential fifth column” in the interests of destabilizing situation while simultaneously precision-guided munition (PGM) strikes are launched at key targets,” General Gerasimov sated describing a part of it. Most likely, [this new US doctrine is currently being employed in Venezuela](https://southfront.org/venezuela-blackout-cyber-attacks-sabotage-and-political-horror-movies/). However, in the event of conflict with Russia the success of this strategy of aggression will hardly be possible without the employment of nuclear forces, at least precision tactical nuclear strikes. This is the real reason of Dunford’s remarks in favor of the first-strike nuclear policy. The rest is mostly a formal justification for such an approach. Speculations that Russia may employ tactical nuclear weapons in some conflict in order to achieve a victory before the intervention of US or NATO forces are ridiculous. There are two main reasons: The political and military doctrine of Russia does not include such provisions. The Russian leadership does not have levers to conduct such a step. All possible local conflicts in which Russia may participate in the coming decades could appear in regions near Russian borders only. These are Ukraine, Belarus, the Caucasus and Central Asia. If one supposes that Russia is ready to use nuclear weapons in these regions, the same person should believe that Russia is ready to strike with nuclear weapons itself. This seems too much even for the “bloody Putin regime”.

### ---AT: E2D

#### Escalate-to-de-escalate is fake

Oliker 18 [Olga, senior associate of the Russia and Eurasia Program at the Center for Strategic and International Studies, “The Nuclear Posture Review and Russian ‘De-Escalation:’ A Dangerous Solution to a Nonexistent Problem,” War on the Rocks, <https://warontherocks.com/2018/02/nuclear-posture-review-russian-de-escalation-dangerous-solution-nonexistent-problem>]

There is a [growing certainty](https://www.wsj.com/articles/the-case-for-tactical-u-s-nukes-1516836395) in the West that [Russia has adopted](https://cisac.fsi.stanford.edu/news/william-perry-warns-nuclear-dangers-drell-lecture) an “escalate to de-escalate” nuclear strategy, which [lowers the bar](https://warontherocks.com/2016/03/three-minutes-to-midnight-closer-to-nuclear-conflict-than-we-think/) for nuclear weapons use to a terrifyingly low level. Importantly, it’s referenced as fact in the Trump administration’s new [Nuclear Posture Review ,](https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF) which argues that the United States itself therefore needs new low-yield nuclear weapons to deter Russia at lower levels of conflict. But the evidence of a dropped threshold for Russian nuclear employment is weak. Moreover, even if this was Russia’s doctrine, a shift to more American reliance on lower-yield nuclear weapons would be the wrong solution to the problem. Understanding Russian Doctrine What do people mean when they say “escalate to de-escalate?” The words themselves are not particularly helpful. Any action that is neither a perfectly symmetrical nor smaller response to adversary action is escalation. Any threat (nuclear or otherwise) to raise the costs of conflict is a threat of escalation. And countries both escalate and threaten to do so fairly regularly as they seek to convince adversaries to rethink plans. The fact is that most escalation is intended to, well, de-escalate. Western analysts have developed a range of descriptions of Russian nuclear strategy that all fall, with varying degrees of consistency and contradiction, under the “escalate to de-escalate” umbrella. The [new NPR](https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF) and political scientist [Matthew Kroenig](https://www.wsj.com/articles/the-case-for-tactical-u-s-nukes-1516836395) hold that Russia intends to use nuclear weapons early in a conflict to attain an advantageous battlefield outcome. So does current Pentagon official [Elbridge Colby,](https://www.cnas.org/publications/commentary/countering-russian-nuclear-strategy-in-central-europe) [Juri Luik and Tomas Jermalavicius believe](http://www.tandfonline.com/eprint/umSnuTKFrMZggbaRv3SR/full) Russia would turn to nuclear weapons in the face of imminent battlefield defeat: e.g., to make up for conventional inferiority in a conflict with the NATO alliance. [Evelyn Farkas holds](http://foreignpolicy.com/2017/02/15/trump-needs-a-russia-policy-or-putin-will-force-one-on-him/) that Russia simply likes escalation, nuclear and otherwise. The notion that Russia might use nuclear weapons on the battlefield may originate in arguments in a 1999 paper published in the Russian military journal Voennaia Mysl. The authors, military officers and analysts V. I. Levshin, A. V. Nedelin, and M. E. Sosnovskii, [posited](http://militaryarticle.ru/zarubezhnoe-voennoe-obozrenie/1999-zvo/8995-o-primenenii-jadernogo-oruzhija-dlja-dejeskalacii) that the use of nuclear weapons in a heretofore conventional conflict could demonstrate credibility and convince the adversary to stand down for fear of further escalation. The argument for more nuclear steps on the escalation ladder has been made more recently as [well](http://nvo.ng.ru/concepts/2015-11-27/1_stairway.html). It was even promised by a senior Russian official prior to the release of a new military doctrine almost a decade [ago](https://www.rbc.ru/politics/14/10/2009/5703d6e19a7947733180bb63). However, neither that [doctrine](http://carnegieendowment.org/files/2010russia_military_doctrine.pdf) nor the one that followed it in [2014](https://rusemb.org.uk/press/2029) (the most recent) in fact lowers the nuclear use threshold. As one of us has argued [previously](https://www.csis.org/analysis/russia%E2%80%99s-nuclear-doctrine), the official statements, followed by a doctrine that did not deliver on them, suggest that proponents of a lowered threshold ultimately lost a bureaucratic fight. To this day, Russian “escalation” advocates occasionally publish an article, still hoping to change the policy — but continue to fail. Nor does Russian doctrine call for the use of nuclear weapons if Moscow is losing a conventional conflict. To the contrary, military doctrine clearly states that nuclear weapons will be used only in response to an adversary using nuclear or other weapons of mass destruction and/or “when the very existence of the state is [in](https://rusemb.org.uk/press/2029) [jeopardy.](http://www.mid.ru/ru/foreign_policy/news/-/asset_publisher/cKNonkJE02Bw/content/id/3054726)” One can argue what does and does not qualify as existential jeopardy, but the scenarios in which Western analysts envision Russian nuclear escalation — most of which involve ending a conventional conflict — seem to fall short by most definitions. In the past, Russia’s bar for nuclear use has been both higher and lower. In 1993, [Moscow dropped the no-first-use pledge](http://www.nytimes.com/1993/11/04/world/russia-drops-pledge-of-no-first-use-of-atom-arms.html) it inherited from the Soviet Union. In 2000, however, following the NATO air campaign in Yugoslavia, Russia’s new military doctrine allowed for first use in case of large-scale conventional aggression against Russia or its [allies](https://www.armscontrol.org/act/2000_05/dc3ma00). It is plausible that at this time, plans indeed looked something like “escalate to de-escalate.” But soon after that, proponents of reliance on nuclear weapons found their views eclipsed by Russian government decisions to instead invest in conventional [forces](https://dspace.mit.edu/handle/1721.1/107537). At the time, this was mainly because Russia believed [most of its battles would be smaller-scale](http://milrf.ru/conference/cf_030604/5ru_esin.htm). Today, however, Russia is [increasingly confident](https://sputniknews.com/russia/201701121049508492-precision-weapons-russia/) that its conventional capabilities can play at least some of the strategic deterrence roles historically played by nuclear weapons. A Secret Plan to Escalate? Those who believe in a lowered Russian threshold for nuclear use thus believe that Russia’s formal doctrine is intentionally disingenuous. Indeed, speculation about a secret annex to the doctrine that clandestinely lowers the nuclear threshold [abounds](https://www.usni.org/magazines/proceedings/2017-02/escalate-de-escalate). But as [Kristin ven Bruusgaard has pointed out](https://warontherocks.com/2017/09/the-myth-of-russias-lowered-nuclear-threshold/) in in War on the Rocks, if Russia’s goal is deterrence, a stated strategy of restraint at odds with a real strategy of escalation seems counterproductive. Deterrence works best when the adversary understands which actions will trigger an undesirable response. Three categories of evidence are offered to support the argument that Russia’s true nuclear threshold today is lower than its doctrine indicates: exercises, capability, and rhetoric. Like other nuclear states, Russia runs exercises that involve [nuclear weapons](https://www.foi.se/reportsummary?reportNo=FOI-R--4326--SE). The vast majority of these test strategic readiness, command and control, and interoperability. In a handful of recent cases, various sources [have](https://www.nato.int/nato_static_fl2014/assets/pdf/pdf_2016_01/20160128_SG_AnnualReport_2015_en.pdf) [reported](http://www.businessinsider.com/nato-report-russia-sweden-nuclear-2016-2)[that](https://jamestown.org/program/reflections-on-vostok-2010-selling-an-image/) [nuclear](https://jamestown.org/program/belarus-and-russia-prepare-zapad-2013-military-exercise/) use was simulated in otherwise conventional Russian exercises, supposedly boosting the evidence for “escalate to de-escalate.” It does not, however, appear that scenarios for these exercises fit the model of a small-scale nuclear strike early in a conflict—as one of us has argued in the [past](https://csis-prod.s3.amazonaws.com/s3fs-public/publication/160504_Oliker_RussiasNuclearDoctrine_Web.pdf). If one believes the strikes happened, conditions of a battlefield defeat posing an existential threat to the state are more plausible. However, as Bruno Tertrais explains, the evidence for simulated nuclear use in large conventional exercises is itself not fully [convincing](https://www.iiss.org/en/politics%20and%20strategy/blogsections/2018-4cda/february-e91d/does-russia-really-include-limited-nuclear-strikes-bf12). Importantly, Russia’s most recent large-scale military exercise focused on its Western flank, Zapad 2017, did not have any evident nuclear [strike](https://www.chathamhouse.org/expert/comment/five-things-know-about-zapad-2017-military-exercise) [component](https://news.err.ee/650543/michael-kofman-what-actually-happened-during-zapad-2017), despite positing a conflict with the NATO alliance. Then there’s Russian capability, specifically smaller-scale, shorter-range nuclear capabilities suitable for the battlefield. Russia maintains a substantial legacy [arsenal](https://fas.org/sgp/crs/nuke/RL32572.pdf) of nonstrategic weapons, which some may believe suggests a willingness to use them. Moreover, in recent years, Moscow has emphasized the development of new warfighting systems that can be deployed with either nuclear or conventional firepower, the oft-touted Iskander being one [example](https://www.csis.org/analysis/russia%E2%80%99s-nuclear-doctrine). Russia is also working on hypersonic [systems](https://www.csis.org/analysis/russia%E2%80%99s-nuclear-doctrine). Finally, the “accidental” leak of plans (in the form of a presentation slide) for a nuclear [torpedo](http://www.bbc.com/news/world-europe-34797252) in 2015 fueled speculation that Russia is thinking creatively about nuclear warfighting (although the destructive power of the purported weapon would surely have strategic, not merely “de-escalatory,” effects). Some may argue that capability is evidence enough of possible “escalate to de-escalate” plans, and the West should therefore respond in kind. This is wrong, for two reasons: First, weapons can be used for all sorts of things, and one cannot plan for all possible contingencies — only those that seem plausible. Russia could also, in principle, plan to set off all of its nuclear weapons at once, or fire some of them into space. If a possible strategy is not supported by the evidence, it should not drive planning. Second, the argument that capabilities prove intent works both ways. The United States also has low-yield nuclear capabilities (and will have more if proponents have their way). Should Russia therefore expect the United States to use nuclear weapons first if American conventional forces were losing, say in a fight against Russia over Ukraine? Indeed, such an approach would be consistent with the American doctrine outlined in the new Nuclear Posture Review. But while the review may make this scenario less ludicrous than it was in the past, Russia would still be dangerously paranoid to base its planning on the possibility. There is no evidence of U.S. plans to start an offensive war against a major nuclear power like Russia or China, much less to use a preemptive nuclear strike to “de-escalate” a conventional conflict once it went wrong. So what is Russia’s very large nonstrategic arsenal for, and why is it emphasizing dual-use systems? First, as regards the nonstrategic arsenal as a whole, Russia is quite simply loath to give up something it has a lot of without getting something else in return. Second, Moscow knows that its nuclear capabilities make Brussels and Washington nervous. Russians did not discuss a nuclear role for the Iskander—and, indeed, rejected the possibility—until the Western press started describing the system as [dual-capable.](https://www.csis.org/analysis/russia%E2%80%99s-nuclear-doctrine) To be blunt, if not reassuring, Moscow has noticed that an emphasis on dual-capable systems keeps the West off-balance, and sees that as a clear benefit. This brings us to the last category of evidence for a clandestine lowered threshold: Russian rhetoric. While some Russian pundits recklessly talk of turning countries to [ash](https://www.reuters.com/article/ukraine-crisis-russia-kiselyov/russia-can-turn-us-to-radioactive-ash-kremlin-backed-journalist-idUSL6N0MD0P920140316), senior officials, including President Vladimir Putin, have been far more careful with their threats. Putin may [mention](https://www.cnn.com/2015/03/16/europe/russia-putin-crimea-nuclear/index.html) that the Crimea crisis could, in some contingencies, have led him to place nuclear weapons on alert. However, this never happened, and it is something of a stretch to interpret that as meaning he would have used a tactical nuclear weapon to end a conventional conflict. Moreover, in the face of recent nuclear [rhetoric](https://twitter.com/realDonaldTrump/status/948355557022420992?ref_src=twsrc%5Etfw&ref_url=https%3A%2F%2Fwww.cnn.com%2F2018%2F01%2F03%2Fpolitics%2Ftrump-nuclear-authority%2Findex.html)from America’s own president, the comments Putin has made seem almost circumspect. Putin’s rhetoric is meant not to signal plans to use nuclear weapons recklessly, but rather to remind any who may have forgotten that Russia is a nuclear weapons state. While this is prospectively destabilizing, it does not indicate a deep occult doctrine, much less a doctrine that has been consistently and publicly rejected. Russian rhetoric reflects the fact that Russia, much like the Soviet Union before it, sees NATO posing a threat that needs to be deterred. Moscow continues to believe, and Russian generals in private conversations emphasize, that any conventional conflict with NATO risks rapid escalation without “de-escalation” — into all-destroying nuclear war. It must therefore be avoided at all costs. This logic is consistent with that put forward by American scholars who have [argue](https://www.jstor.org/stable/1962764)d [that](http://www.newsweek.com/how-nuclear-weapons-can-keep-you-safe-78907) nuclear weapons kept the peace during the Cold War. The success of the nuclear peace, in this view, lay in the threat of extreme escalation, not the bespoke step-by-step deterrence the Nuclear Posture Review seems to advocate and that the postulated Russian “de-escalation” doctrine would implicitly endorse.

### AT: Biden No First-Strike

#### Biden has created an aggressive nuclear posture – allied assurances, increased funding, and refusal of NFU prove

Willick 22 [Jason Willick writes a regular Washington Post column on legal issues, political ideas and foreign affairs, "Opinion: Biden sends Putin a muddled nuclear message", Washington Post, https://www.washingtonpost.com/opinions/2022/03/31/biden-sends-putin-muddled-nuclear-message/] GBS-HW

Joe Biden campaigned in 2020 as a nuclear arms-control enthusiast, declaring that “the United States does not need new nuclear weapons” and embracing a “sole purpose” policy that would narrow the circumstances in which he might direct the military to use one. Fourteen months into his presidency, he has been forced to abandon both commitments.

Two intervening events explain the change. First, in 2021, satellite images made public the construction of as many as 300 silos, apparently for intercontinental ballistic missiles, in western China. The extent of Beijing’s nuclear ambitions could no longer be ignored.

Then Russia invaded Ukraine while rattling its nuclear saber. Nuclear weapons haven’t been used, but they’ve already set the terms for the conflict: It’s only because of these weapons that Russia’s military can fight a conventional war in Ukraine without a credible threat of direct Western intervention.

Specifically, Vladimir Putin’s war has highlighted Russia’s yawning advantage over the United States in nonstrategic, or “tactical,” nuclear weapons, which have shorter ranges and smaller yields. Moscow’s military doctrine exploits its roughly 10-to-1 advantage in the smaller weapons, and greater diversity of delivery systems, by contemplating their use on the European battlefield in a conventional war with NATO. If an American president has fewer options for a proportionate response to a limited, tactical nuclear strike, such a strike might look more attractive to Russia. It could gamble that the president (no matter America’s official policy) would back down rather than risk escalating toward a full-fledged, or “strategic,” nuclear exchange.

The administration has responded to the changed circumstances. Biden reportedly told European heads of state last week that he would not formally weaken the United States’ nuclear-use policy, as some of them feared. Meanwhile, his fiscal 2023 defense budget released this week funds several nuclear weapons programs initiated in the Trump administration that are under attack from disarmament advocates.

Unfortunately, it may not be enough. The budget still terminates the Pentagon’s development of a tactical nuclear weapon delivered by a sea-launched cruise missile (or SLCM, sometimes pronounced “slick-em”). This decision, announced in the middle of Putin’s war on NATO’s doorstep, could needlessly create doubt in Moscow about Washington’s will in a nuclear standoff. Putin has a huge advantage in the kind of nuclear weapon he would be most likely to use The commander of U.S. forces in Europe is already sounding the alarm. In testimony before the House Armed Services Committee on Wednesday, Gen. Tod Wolters said the United States should continue developing the SLCM. “Having multiple options,” Wolters said, “exacerbates the challenge for the potential enemies” probing for ways to circumvent our nuclear deterrent. Multiple options means more than one type of low-yield weapon for a president to choose from to respond to a limited Russian nuclear strike on a NATO ally. The aim would be to restore deterrence without unduly escalating. The defense budget wisely doesn’t seek to dismantle the W76-2, a submarine-launched low-yield weapon that Biden opposed when it was first deployed in 2019. In an email, a senior Pentagon official cited “the deterrence contribution of the W76-2,” as well as cost constraints, to explain the cancellation of the SLCM. But the W76-2 is delivered by a long-range ballistic missile, which means it can’t be carried on most Navy submarines and would look like a “strategic” weapon on enemy radar. The Pentagon fielded it as a second-best alternative to the SLCM only because it could be ready earlier. To Biden’s credit, the budget maintains funding to develop the planned Long-Range Standoff Weapon, a nuclear cruise missile launched from an Air Force bomber. But planes are easier to detect than submarines and might take longer to get into position. The SLCM — which was also deployed late in the Cold War — is a powerful complement to the Air Force’s planned weapon. It’s true that NATO’s conventional firepower could overwhelm Russia’s military. But consider that early in the Cold War, the roles were reversed. The Soviet Union had the more powerful land army in Europe, while the United States, under its doctrine of “massive retaliation,” planned to use nuclear weapons to meet a conventional attack. There is nothing especially irrational, then, about Russian threats of nuclear force in a conventional war against a superior opponent. The solution is to show Moscow that it has no hope of victory from a limited nuclear escalation because of NATO’s ability to match it at every step.

Nuclear deterrence can be debated endlessly because there’s mercifully little empirical evidence against which to test theories of how it works (or doesn’t). But China’s nuclear rise and the simultaneous return of war in Europe have shattered, at least for the foreseeable future, any claim that unreciprocated American nuclear disarmament is a realistic path to peace.

#### Biden has maintained first-strike policy – he’s remained firm in the face of pressure

Sirota 22 [Sara Sirota is a former Politics Reporter at The Intercept, "Biden’s Nuclear Strike Policy Is the Same as Russia’s", Intercept, https://theintercept.com/2022/04/11/nuclear-weapons-biden-russia-strike-policy/] GBS-HW

DURING HIS CAMPAIGN for president, Joe Biden penned an article in Foreign Affairs titled “Why America Must Lead Again.” In it, he laid out his thoughts on the most dangerous arms in the U.S. stockpile. “I believe that the sole purpose of the U.S. nuclear arsenal should be deterring—and, if necessary, retaliating against—a nuclear attack,” the then-candidate wrote. “As president, I will work to put that belief into practice, in consultation with the U.S. military and U.S. allies.”

The declaration gave arms control advocates hope that the president would adopt a no-first-use policy — meaning that the U.S. would commit to never initiating a nuclear conflict. Current policy allows the president to strike first in an extreme circumstance, like in response to a devastating chemical attack, which can lower the threshold for nuclear war to break out. But now, at a time when the world is closer to a nuclear exchange than ever, thanks to Russian President Vladimir Putin’s devastating war against Ukraine, Biden has gone back on his word.

On March 29, the White House released a short summary of Biden’s upcoming strategy on nuclear forces indicating his decision: “The United States would only consider the use of nuclear weapons in extreme circumstances to defend the vital interests of the United States or its allies and partners.”

This effectively makes the U.S. stance on nuclear employment indistinguishable from Russia’s. According to its military doctrine, Russia may use a nuclear weapon if it faces an “existential” threat — a fact of which Putin has reminded observers around the world in recent weeks as he pummels Ukraine.

Biden’s decision to keep U.S. policy so similar to Russia’s amounts to a missed opportunity to build an international coalition against nuclear conflict, disarmament advocates say.

Sen. Ed Markey, D-Mass., co-chair of the Nuclear Weapon and Arms Control Working Group, took to the Senate floor on March 31 to indict the policy: “Unfortunately, our American democracy and Russia’s autocracy do share one major thing in common: Both our systems give the United States and Russian presidents the godlike powers known as sole authority to end life on the planet as we know it by ordering a nuclear first strike.”

According to the Wall Street Journal, which first reported Biden’s decision to maintain first-strike authority on March 25, the president faced pressure from allies to renege on his campaign pledge. He met with European partners late last month amid apparent concerns that Russia may use a nuclear or chemical weapon as part of its war against Ukraine. (NBC reported last week that three U.S. officials admitted there is no evidence that Russia brought chemical weapons near Ukraine.)

Tom Collina, policy director at the nuclear arms control group Ploughshares Fund, argued that rolling back the strike authority could have benefited international efforts against Russia. “Putin is threatening the first use of nuclear weapons to hold Ukraine hostage and keep the US and NATO out,” he wrote to The Intercept. “This is nuclear blackmail, and its a dangerous precedent that we must oppose. Its therefore deeply disappointing that the Biden administration just missed a key opportunity to reject first use. Instead, Biden’s policy also allows first use and is essentially the same as Russia’s, and this undermines Biden’s ability to build international opposition to what Putin is doing.”

#### Biden’s nuclear posture is aggressive – he is reserving his right to first-strike

Griffith 22 [Keith Griffith is a Reporter with broad experience covering courts, financial markets, and breaking news, "Biden refuses to rule out first-strike use of nuclear weapons under extreme circumstances", NewsHunt365, https://newshunt365.net/biden-refuses-to-rule-out-first-strike-use-of-nuclear-weapons-under-extreme-circumstances/] GBS-HW

President Joe Biden is abandoning his campaign promise to change the long-standing US nuclear doctrine and will instead adopt existing policies that reserve America’s right to use nuclear weapons in a first-strike scenario.

The new Nuclear Posture Review says the US would only use nuclear weapons under “extreme circumstances,” similar to language used in previous reviews.

Instead, Biden’s most recent Nuclear Posture Review reiterates that nuclear deterrence is the nuclear arsenal’s “fundamental role” and not its “sole purpose,” U.S. officials told the Wall Street Journal.

Though the difference in wording may seem minor, Biden’s proposed “single purpose” doctrine sparked apprehension among allies from Europe to Japan, who feared the change in stance would embolden opponents.

And given Vladimir Putin’s recent moves against Ukraine, NATO allies in particular feared that a change of course would encourage Russia to launch new conventional attacks or use chemical weapons, knowing that a US nuclear response was out of the question.

Russia currently maintains the world’s largest nuclear arsenal, with 6,257 warheads compared to America’s 5,550, the authorities said Arms Control Association.

Instead of the “single purpose” doctrine, the new Nuclear Posture Review says the US would only use nuclear weapons under “extreme circumstances,” similar to language used in previous reviews conducted by both the Obama and Trump administrations became.

An insider said Biden decided to abandon his “single purpose” vow, particularly after Russia invaded Ukraine.

“You don’t want to look weak. It was on the president’s desk awaiting his decision, then Ukraine happened,” an arms control expert who had consulted with Biden’s

### AT: Nuclear Taboo---2NC

#### The nuclear taboo is correlation not causation- nuclear use is determined by specific geopolitical factors

Sherrill 17 [Clifton Sherrill is an Associate Professor of International Relations at Troy University, May 25, 2017, “The Myth of the Nuclear Taboo,” <http://webcache.googleusercontent.com/search?q=cache:IpNKXVZRPuIJ:www.asianisr.org/Manage/Include/download.asp%3FFileName%3DAISR_18_1_R1_Clifton_W_Sherrill.pdf%26FileReName%3D20170623090874997499.pdf%26FileDir%3DPaper%5CArticles+&cd=22&hl=en&ct=clnk&gl=us>]

VI. THE NUCLEAR TABOO TODAY The argument presented here is that the norm of nuclear non-use is the product of political, strategic, and technological factors filtered through Just War considerations rather than the establishment of a universal constitutive norm. Freed of bipolar balancing considerations, the expanding set of nuclear-armed actors, influenced by technological developments in conventional weaponry, precision delivery systems, and missile defense, will perceive an increasingly more conducive environment to nuclear use. Tannenwald asserts that a nuclear taboo benefits small states and arose “despite consistent and long-standing official U.S. resistance to it” (Tannenwald 1999, 435 n.7; 2005, 11). Conversely, Gavin contends that since 1945, the United States has consistently “highlight[ed] the dangers of nuclear weapons and encourage[d] a norm against their possession and a taboo against their use” (Gavin 2015, 25). In reality, the idea of a taboo has been supported or opposed by various states depending on what they perceived to be in their interests at the time. For example, the Soviet Union engaged in public diplomacy demonizing nuclear use during the period of Soviet nuclear inferiority (Tannenwald 1999, 449). Having rejected demobilization following World War II and thus enjoying conventional superiority vis-à-vis the United States, this was natural. As the Soviets obtained greater nuclear parity, such rhetoric diminished. When the Soviet economy collapsed, and with it the ability to support a massive conventional military force, the Russians began to see the idea of a taboo as a U.S. ploy to exploit the new U.S. conventional edge. Since then, Russia has abandoned the “No First Use” pledge (Feiveson and Hogendoorn 2003, 3; Koblenz 2014, 12), that advocates of the taboo previously presented as evidence of the taboo’s international strength (Paul 1995, 705; Gizewski 1996, 413). Russia has fully integrated tactical nuclear arms into its military forces (Roberts 2015, 136), while conspicuously rattling the nuclear saber during Putin’s expansionist activity. Meanwhile, during periods of Soviet conventional superiority, U.S. officials such as Eisenhower and Dulles sought to “regularize” nuclear arms. As the balance shifted, U.S. rhetoric adopted a more favorable stance to the idea of a taboo. Today, the elimination of nuclear arms as usable instruments would benefit no one as much as it would the United States, due to the enormous conventional edge the U.S. military holds over other states. 1. Balance of Power During the Cold War, superpowers exercised greater ability to control the actions of states within their respective blocs. By the second decade of the nuclear age, both sides sought to prevent proliferation of nuclear arms. This was in part to secure their own preeminent positions, but also to prevent the possibility of allies using, or threatening to use, nuclear arms as a catalyst to prod their superpower benefactor into action on their behalf, thereby risking U.S. – Soviet confrontation. The collapse of the Soviet Union resulted in the weakening of the balance of power, leading to overly ambitious U.S. military extension and to a weakening of the U.S.-led Western alliance system. In turn, popular discontent with the results of U.S. interventionism has caused domestic political blowback in the United States, leading to U.S. hesitance to use force in defense of the existing balance of power. A resurgent nationalist Russia, a newly capable China, an emboldened Iran, and violent jihadist terrorist organizations have each taken advantage of this to expand their own influence in various regions. Whether characterized as a leaderless unipolar system or a return to multipolarity, the current era has yet to settle into a functional balancing arrangement. In such an environment, there are fewer constraints on nuclear use. Whereas the bipolar balance constrained great power interventions, today’s smaller powers, such as North Korea and Iran, see nuclear weapons as a necessary guarantee of regime survival. Moreover, the possession of nuclear arms permits states to engage in conduct that might otherwise result in military threats to the ruling regime, as with Iranian support for Hezbollah and Hamas, or Pakistani support for Islamist attacks in Kashmir. Nuclear arms can also be used for coercion. For example, Russia can invade and annex Crimea using conventional force, and then threaten nuclear escalation should the international community attempt to act to reverse it. A nationalist-energized China could react to moves toward Taiwanese independence by attempting a rapid conventional military operation, backed by threats to escalate to nuclear use should the United States attempt to intervene. These threats can succeed where the balance of interests favors the threatening party, so that although it might be materially weaker, it has greater resolve than its adversary – and the adversary in the case knows it (Kahn 1965; Roberts 2016, 68-73). Indeed, the conventional military dominance of the United States spurs others to consider asymmetric options in this manner, as purely conventional threats of escalation are not backed by the requisite capabilities. This greater facility of use contradicts claims of a steadily strengthening taboo. 2. Proliferation In the 25 years of the post-Cold War era, nuclear proliferation has been on the rise. Iraqi efforts at developing a nuclear capability were uncovered in 1991 and addressed via economic, diplomatic, and military means over the next several years. India and Pakistan both became declared nuclear weapons states in 1998. North Korea has carried out a series of five nuclear tests to date, demonstrating an evolving nuclear capability, while also undertaking an exceptionally active missile testing program. Syria’s effort to construct a secret nuclear reactor with North Korean assistance was discovered and subjected to a preemptive Israeli military strike in 2007. Iran’s nuclear program has been the subject of extensive diplomatic exchange, leading to a negotiated delay of Iranian uranium enrichment efforts. Along with new nuclear-armed states, the possibility of non-state actors acquiring nuclear arms is greater than ever. Not only have there been greater opportunities due to international proliferation rings like that of A.Q. Khan, but there is greater willingness among non-state groups to engage in mass murder. Transnational terrorist organizations such as al-Qaeda and the Islamic State promote a violent revolutionary ideology that places minimal value on human life and engages in brutal conduct for the sake of shock. If either group were to obtain a nuclear weapon, there is little doubt that such weapon would be detonated to maximize loss of life. This proliferation is not due to any lack of effort or concern by nuclear states. Nuclear non-proliferation efforts have regularly been used by nuclear powers to try to lock in exclusive possession of nuclear arms.12 The nuclear non-proliferation regime boasts an impressive array of treaties, organizations, and advocates.13 However, if there was an international nuclear taboo in place, derived from an internalized conception of identity, then non-proliferation efforts would not be needed. States would be able to rely on this taboo to know such arms were unusable. Yet non-proliferation remains a key security concern for states around the world. States continue to invest significant efforts in countering proliferation, primarily through supply-side controls, which implies demand exists – a fact irreconcilable with a universally accepted taboo. In addition to proliferation of new nuclear powers, the nuclear arsenals of existing nuclear-armed states have also increased. While the United States and Russia have significantly reduced the numbers of deployed strategic nuclear warheads, other nuclear powers, including China, India, and Pakistan, have amassed larger arsenals. Nearly all of the nuclear-armed states are now engaged in modernization efforts of their nuclear arms. (Bracken 2016). Even the European Union has reportedly broached discussion of a “Eurodeterrent” force (Fisher 2017). 3. Modern Technology Nuclear arms have advanced significantly since the first generation of highyield indiscriminant weapons. Tactical nuclear arms with sub-kiloton yields are now possible. These weapons can be delivered using modern precision guidance systems exponentially superior to those available in Brodie’s era. Scenarios where such weapons could be used in a discriminant fashion are now imaginable. For example, low-yield nuclear weapons could be used against deeply-buried and hardened targets such as underground biological-weapons facilities. Using timedelayed fuses that permitted missiles to use kinetic energy in burrowing through packed earth or cement before the nuclear payload detonates could minimize fallout and other collateral damage, while the associated energy could destroy the labs and the radiation could prevent reconstitution. Or a state could detonate largeyield nuclear weapons high in the atmosphere above an adversary with the intent of generating a wide-ranging electromagnetic pulse that knocks out electrical systems without causing casualties from blast effects or radiation release. Having degraded the adversary’s communications, intelligence, and command and control systems, it could then demand certain concessions via coercive threats of additional strikes. Technology has also rendered the assumption that there is no defense against nuclear-armed missiles suspect. Ballistic missile defense systems, while far from perfect, are now fielded at a variety of locations. U.S. ground-based interceptors, Aegis ship-borne and ashore missile defense, and theater high-altitude area defense (THAAD) are among the larger U.S. systems that other states fear could provide the United States with a strategic advantage. As missile defense advances, it could diminish the operation of nuclear deterrence, lessening the perceived costs of nuclear use. Technological breakthroughs in conventional arms can also impact the cost / benefit analysis surrounding nuclear use. Current research on hypersonic systems suggests new means may soon be available to destroy an adversary’s hardened targets. Indeed, a state could possibly launch a disarming first-strike against another state’s immobile nuclear forces using solely conventional arms, holding its strategic nuclear arms in reserve to deter the target state’s nuclear retaliation. Such weapons threaten to erode the rationalist’s firebreak between conventional and nuclear arms. As with non-proliferation efforts, missile defense and hypersonic technology would not rate the heightened attention they receive if a nuclear taboo functioned as asserted. China would be far less concerned with U.S. deployment of THAAD to South Korea if Chinese leadership believed a nuclear taboo was in operation. VII. CONCLUSION The fact that nuclear arms have not been detonated militarily since 1945 serves as the strongest argument in favor of the existence of a nuclear taboo. Yet there are multiple facts inconsistent with the claim of a constitutive norm. If a nuclear taboo were truly in place today, nuclear deterrence could not remain a key feature of international relations. Even granting a “taboo exception” for so-called “rogue” states, large powers well-socialized into the existing international system demonstrate a conduct inconsistent with an internalized norm prohibiting the thought of nuclear use. These powers spend billions of dollars to modernize “unusable” weapons; they spend time and resources in pursuit of arms control agreements aimed at reducing the numbers of “unusable” nuclear arms; they place non-proliferation efforts at the top of the international political agenda; and they resist or overturn no-first-use pledges. The development of ballistic missile defense generates intense reactions by world powers that fear diminution of deterrence. Consideration of building sub-kiloton yield nuclear weapons produces visceral opposition. If nuclear arms of all types were the subject of a taboo based on an internalized repudiation of nuclear weapons, these behaviors would represent an indomitable puzzle. The nuclear taboo likely receives widespread scholastic acceptance in part because of ideological preferences. Works such as Tannenwald (1999, 2005, 2007) and Farrell and Lambert (2001) demonstrate a clear normative desire for nuclear- zero. Prior scholastic works have assigned causal significance to normative factors, only to have subsequent research indicate material factors played a larger role than thought. For example Perkovich (2001) argued that India had made a conscious decision to abstain from weaponizing nuclear arms, while the recent work of Kampani (2014) argues persuasively that India’s delay was due to a combination of technological, organizational, and political factors. Given the prevailing perception of nuclear arms as incapable of anything but mass destruction, such preferences are attractive on a broad scale. Yet assertions of a stronger prohibition on nuclear use than is supported by the political, strategic, technological, and normative factors that actually exist is dangerous. Claims that norms of non-use have been internalized, and identities have been transformed to reflect a taboo, threaten to lessen the attention paid by policymakers to ensure that nuclear arms are not used. As political and technical barriers to nuclear use are reduced, the strategic opportunities for use multiply. A clear-eyed assessment of the interest driven, conditional nature of nuclear non-use is a necessary foundation to policymaking that aims to avoid nuclear detonation in the future.

### AT: Nuclear Winter---2NC

#### Counterforce targeting massively limits fallout – kills less than 700 people

**Lieber and Press 9** [Keir Lieber is Director of the Security Studies Program and Associate Professor in the Edmund A. Walsh School of Foreign Service at Georgetown University. He holds a joint appointment in the Department of Government, and Daryl Press received his PhD from the Massachusetts Institute of Technology, his research focuses on international security and U.S. foreign policy, December 2009, “The Nukes We Need: Preserving the American Deterrent,” https://www.jstor.org/stable/20699714?seq=1#page\_scan\_tab\_contents]

To illustrate the growth in U.S. counterforce capabilities, we applied a set of simple formulas that analysts have used for decades to estimate the effectiveness of counterforce attacks. We modeled a U.S. strike on a small target set: 20 intercontinental ballistic missiles (icbms) in hardened silos, the approximate size of China's current long range, silo-based missile force. The analysis compared the capabilities of a 1985 Minuteman icbm to those of a modern Trident II submarine launched ballistic missile.1 In 1985, a single U.S. icbm warhead had less than a 60 percent chance of destroying a typical silo. Even if four or five additional warheads were used, the cumulative odds of destroying the silo would never exceed 90 percent because of the problem of "fratricide," whereby incoming warheads destroy each other. Beyond five warheads, adding more does no good. A probability of 90 percent might sound high, but it falls far short if the goal is to completely disarm a 90 percent chance of destroying each target, the odds of destroying all 20 are roughly 12 percent. In 1985, then, a U.S. icbm attack had little chance of destroying even a small enemy nuclear arsenal. Today, a multiple-warhead attack on a single silo using a Trident II missile would have a roughly 99 percent chance of destroying it, and the probability that a barrage would destroy all 20 targets is well above 95 percent. Given the accuracy of the U.S. military's current delivery systems, the only question is target identification: silos that can be found can be destroyed. During the Cold War, the United States worked hard to pinpoint Soviet nuclear forces, with great success. Locating potential adversaries' small nuclear arsenals is undoubtedly a top priority for U.S. intelligence today. The revolution in accuracy is producing an even more momentous change: it is becoming possible for the United States to conduct low yield nuclear counterforce strikes that inflict . A U.S. Department or Defense computer model, called for the United States to tne Hazard Prediction and Assessment Conduct nuclear Strikes Capability (hpac), estimates the dispersion of deadly radioactive fallout in a given region that inflict relatively few after a nuclear detonation. The software uses Casualties. the warhead's explosive power, the height of the burst, and data about local weather and demographics to estimate how much fallout would be generated, where it would blow, and how many people it would injure or kill. Hpac results can be chilling. In 2006, a team of nuclear weapons analysts from the Federation of American Scientists (fas) and the Natural Resources Defense Council (nrdc) used hpac to estimate the consequences of a U.S. nuclear attack using high-yield warheads against China's icbm field. Even though China's silos are located in the countryside, the model predicted that the fallout would blow over a large area, killing 3-4 million people. U.S. counterforce capabilities were useless, the study implied, because even a limited strike would kill an unconscionable number of civilians. But the United States can already conduct nuclear counterforce strikes at a tiny fraction of the human devastation that the fas/nrdc study predicted, and small additional improvements to the U.S. force could dramatically reduce the potential collateral damage even further. The United States' nuclear weapons are now so accurate that it can conduct successful counterforce attacks using the smallest-yield war heads in the arsenal, rather than the huge warheads that the fas/nrdc simulation modeled. And to further reduce the fallout, the weapons can be set to detonate as airbursts, which would allow most of the radiation to dissipate in the upper atmosphere. We ran multiple hpac scenarios against the identical target set used in the fas/nrdc study but modeled low-yield airbursts rather than high-yield groundbursts. The fatality estimates plunged from 3-4 million to less than 700 a figure comparable to the number of civilians reportedly killed since 2006 in Pakistan by U.S. drone strikes. One should be skeptical about the results of any model that depends on unpredictable factors, such as wind speed and direction. But in the scenarios we modeled, the area of lethal fallout was so small that very few civilians would have become ill or died, regardless of which way the wind blew. Critics may cringe at this analysis. Many of them, understandably, say that nuclear weapons are and should remain unusable. But if the United States is to retain these weapons for the purpose of deterring nuclear attacks, it needs a force that gives U.S. leaders retaliatory options they might actually employ. If the only retaliatory option entails killing millions of civilians, then the U.S. deterrent will lack credibility. Giving U.S. leaders alternatives that do not target civilians is both wise and just

#### If they’re right, only city strikes can cause extinction

**Armstrong 12** [Stuart Armstrong, James Martin Research Fellow, Future of Humanity Institute, University of Oxford, March 16, 2012, “Old threats never die, they fade away from our minds: nuclear winter,” <http://blog.practicalethics.ox.ac.uk/2012/03/old-threats-never-die-they-fade-away-from-our-minds-nuclear-winter>]

In 1983, scientists published a paper on nuclear winter. This boosted the death toll of all-out nuclear war from ‘only’ 200-500 million to the very real possibility of the complete extinction of the human race\*. But some argued the report was alarmist, and there did seem to be some issues with the assumptions. So – a military phenomena that might cause megadeaths, possibly true but requiring further study, and a huge research defense budget that could be used to look into this critical phenomena and that was already spending millions on all aspects of nuclear weapons – can you guess what happened next? Correct – the issue was ignored for decades. For over twenty years, there were but a tiny handful of papers on the most likely way we could end our own existence, and a vague and persistent sense that nuclear winter had been ‘disproved’. But in 2007, we finally had a proper followup – with the help of modern computers, better models and better observations, what can we now say? Well, that nuclear winter is still a major threat; the initial fear was right. Their most likely scenario was: A global average surface cooling of –7°C to –8°C persists for years, and after a decade the cooling is still –4°C […]. Considering that the global average cooling at the depth of the last ice age 18,000 yr ago was about –5°C, this would be a climate change unprecedented in speed and amplitude in the history of the human race. The temperature changes are largest over land […] Cooling of more than –20°C occurs over large areas of North America and of more than –30°C over much of Eurasia, including all agricultural regions. Also, precipitation would be cut in half and we’d lose most of the ozone layer. But there was a more worrying development: it also seems that a small-scale nuclear war could generate its own mini nuclear winter. It’s important to understand that nuclear winter would not be a direct consequences of the nuclear explosions, but of the burning of our cities in the wake of the war (given enough heat, even roads and pavements will burn), generating clouds of very black smoke that rise into the stratosphere. The clouds do need to reach these heights: any lower and they’ll get rained out. This is what happened during the burning of the Kuwaiti oil wells in 1991: Carl Sagan, one of the fathers of the theory, predicted a nuclear winter-like scenario. But he wasn’t paying attention to the climate models: as they predicted, the local damage was severe, but the smoke didn’t reach the stratosphere, and global damage was avoided.

#### Best climate simulations prove rainout

**Reisner et al. 18** [Jon Reisner – Climate and atmospheric scientist at the Los Alamos National Laboratory. Gennaro D’Angelo – Climate scientist at the Los Alamos National Laboratory, Research scientist at the SETI institute, Associate specialist at the University of California, Santa Cruz, NASA Postdoctoral Fellow at the NASA Ames Research Center, UKAFF Fellow at the University of Exeter. Eunmo Koo - Scientist at Applied Terrestrial, Energy, and Atmospheric Modeling (ATEAM) Team, in Computational Earth Science Group (EES-16) in Earth and Environmental Sciences Division and Co-Lead of Parallel Computing Summer Research Internship (PCSRI) program at the Los Alamos National Laboratory, former Staff research associate at UC Berkeley. Wesley Even - Computational scientist in the Computational Physics and Methods Group at Los Alamos National Laboratory. Matthew Hecht – Atmospheric scientist at the Los Alamos National Laboratory. Elizabeth Hunke - Lead developer for the Los Alamos Sea Ice Model (CICE) at the Los Alamos National Laboratory responsible for development and incorporation of new parameterizations, model testing and validation, computational performance, documentation, and consultation with external model users on all aspects of sea ice modeling, including interfacing with global climate and earth system models. Darin Comeau – Climate scientist at the Los Alamos National Laboratory, Randy Bos - Project leader at the Los Alamos National Laboratory, former Weapons Effects program manager at Tech-Source, James Cooley – Computational scientist at the Los Alamos National Laboratory specializing in weapons physics, emergency response, and computational physics, “Climate impact of a regional nuclear weapons exchange:An improved assessment based on detailed source calculations,” March 16, 2018, <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2017JD027331>]

To quantitatively account for natural and forced variability in the climate system, we created two ensembles, one for the natural, unforced system and a second ensemble using a range of realistic vertical profiles for the BC aerosol forcing, consistent with our detailed fire simulation. The control ensemble was generated using small atmospheric temperature perturbations (Kay et al., 2015). Notably, the overall spread of anomalies in both ensembles is very similar. These ensembles were then used to create “super ensembles” using a statistical emulator, which allows a robust statistical comparison of our simulated results with and without the carbon forcing. Our primary result is the **decreased impact on global climate indices**, such as global average surface temperature and precipitation, relative to standard scenarios considered in previous work (e.g., Robock et al., 2007a; Stenke et al., 2013; Mills et al., 2014; Pausata et al., 2016). With our finding of **substantially less BC aerosol being lofted to stratospheric heights** (e.g., over a factor of four less than in most of the scenarios considered by previous studies), these globally averaged anomalies drop to **statistically insignificant levels** after the first several years (Figures 14 and 16). Our results are generally comparable to those predicted by other studies that considered exchange scenarios in which only about 1 Tg of soot is emitted in the upper troposphere (Robock et al., 2007a; Mills et al., 2008; Stenke et al., 2013). There are more subtle suggestions of regional effects, notably in the extent of the region over which sea surface temperature differences between ensembles remain significant in the final years of simulation (Figure 17). Further work is required to adequately analyze these and other potential regional effects. Historical analysis of several large volcanic eruptions and a recent large fire also supports this result. For example, Timmreck et al. (2010) claim that nonlinear aerosol effects of the Toba Tuff eruption 74,000 years ago helped **limit significant global cooling** impacts to a **two-year time period** and that any cooling beyond this time period could be due to other effects. It should be noted that this eruption was estimated to have produced **106 Tg** of ash and comparable amounts of other gases, such as sulfur dioxide (SO2), while the estimated amount of soot produced by a regional exchange is on the order of **10 Tg**, or **5 orders of magnitude smaller than the ash** (not including gases) **produced by the Toba eruption**. Noting that a nuclear exchange is not identical to volcanic events, it has been asserted that BC particles produced by fires should have a **greater impact on absorbing solar radiation** than even has the significantly larger amounts of ash and various gases produced by large eruptions (e.g., Robock and Toon 2010). Likewise, recent work in analyzing BC emissions from large fires suggests that in such fires, similar to large volcanic eruptions, **coating of soot particles with other particles** in convective eddies **tends to increase their size and hence increase their subsequent rainout** (China et al., 2013) before they can reach the stratosphere. In fact, the recent study of Pausata et al. (2016) found that growth of BC aerosol via coagulation with organic carbon significantly reduce the particles’ lifetime in the atmosphere

#### Islands solve

Turchin and Green 18 [Alexey Turchin, Scientist for the Foundation Science for Life Extension in Moscow, Russia, Founder of Digital Immortality Now, author of several books and articles on the topics of existential risks and life extension, and Brian Patrick Green – Director of technology ethics at the Markkula Center for Applied Ethics, teaches AI ethics in the Graduate School of Engineering at Santa Clara University, “Islands as refuges for surviving global catastrophes,” September 2018, July 20, 2019, <https://www.emerald.com/insight/content/doi/10.1108/FS-04-2018-0031/full/html?fullSc=1&mbSc=1&fullSc=1>]

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

#### Their evidence assumes high-yield weapons --- we don’t even have those anymore

**Becker 18** [Zachariah Becker, President of High Street Consulting LLC, Oct 31, 2018, “Nuclear Winter,” Weapons of Mass Destruction: The Essential Reference Guide, ABC-CLIO]

Several studies on the possibility of nuclear winter were conducted in the 1970s and 1980s, the most famous being the 19X3 TTAPS (Turco, Toon, Ackerman. Pollack, and Sagan) study. This study incorporated factors such as forest fires, burning fossil fuels, and intense smoke covering the earth for periods lasting for weeks or months. The authors of the study further postulated that a period of darkness would exist that could plunge average temperatures by as much as 40 degrees Fahrenheit (thus, the term nuclear winter). Many scientists disputed the idea of a nuclear winter, saying that it did not follow normal meteorological processes and that the smoke would quickly disperse. In 1990, a more detailed study (TTAPS 1990) incorporated extensive meteorological modeling. Although the new study revealed that 10 25 percent of the ejected soil would fall to the ground by immediate precipitation (black rain, such as was seen at Hiroshima), it also showed that the smoke would spread through different hemispheres, reducing temperatures within one to two weeks. The long-term effects of a nuclear winter could last from one to two years and kill an estimated 1-2 billion people. Since the fall of the Soviet Union and the slashing of strategic arsenals, nuclear winter studies have become passe. Almost all of them were based on a nuclear exchange in the 5,000-megaton range, which now seems both politically implausible and beyond the deployed nuclear capability of Russia and the United Stales. It is now believed by many that nuclear exchanges in the 21st century would involve considerably less explosive power and relatively small nuclear weapons that would be targeted with great precision— perhaps fewer than 10 weapons of 100 kilotons or smaller. Although these would have devastating local effects, they would have no significant impact on global weather patterns.

#### Even at the height of the Cold War – not extinction!

Cook 10 [Nigel B. Cook, PhD, BA in Physics, “Rescue of trapped survivors in megaton equivalent World War II attacks, and a review of Bolsover's CND "Civil Defence, The Cruellest Confidence Trick,” Feb 16, 2010, <http://glasstone.blogspot.com/2010/02/rescue-of-trapped-survivors-in-world.html>]

Even a Cold War all-out USSR-US nuclear war before arms reductions would have devastated <5% of the land area of either country by blast, leaving the people and resources of the surviving >95% area to rebuild it, just as occurred after other wars where megatons of conventional bombs which are - for equal quantities - much more efficient at causing destruction than a few nuclear bombs. The commentary of the film of the first 10.4 megaton test, Operation Ivy, argues that the bomb had the energy of all the bombs dropped in World War II: yeah, more impressively, the daily sunlight received on Earth and even the natural storm energy on the planet is even more powerful than a nuclear war as tabulated above. Energy tells you nothing about the destruction. A protracted war using conventional weapons can kill more people and cause more suffering than a brief burst of energy which is easily mitigated as explained above.

### ---AT: EMPs/Meltdowns

#### No impact to EMPs

Hall 19 [Allen Hall, expert in Aerospace Management, Manufacturing, Engineering and IT, worked closely with the military, research labs, FFRDC’s, AFRL, NAVSEA / NAVAIR, all the major ALC’s and all the aerospace OEM’s,“Who would win in a war between Russia and the US?,” March 25, 2019, <https://www.quora.com/Who-would-win-in-a-war-between-Russia-and-the-US/answer/Allen-E-Hall-2>]

In the case of high altitude nuclear bursts, two main EMP types come into play, “fast pulse” and the “slow pulse.” The fast pulse EMP field is created by gamma ray interaction with stratospheric air molecules. It peaks at tens of kilovolts per meter in a few nanoseconds, and lasts for a few hundred nanoseconds. The broad-band frequency content of (0-1000 megahertz) enables it to couple to electrical and electronic systems in general, regardless of the length of their penetrating cables and antenna lines. Induced currents range into the 1,000s of amperes. The “slow pulse” EMP is caused by the distortion of the earth’s magnetic field lines due to the expanding nuclear fireball and rising of heated and ionized layers of the ionosphere. These effects are limited to Earth's Ionosphere, a range of altitude between 50 and 600 miles above the earth’s surface. The strength of EMP’s are limited bt the Gamma ray release of the nuclear explosion. A bomb not specifically designed to enhance this will not normally result in a high field strength value and the EMP will do little permanent as a result.

Diagram

Description automatically generated

As an example, the chart above shows the effect of prompt Gamma ray output and how it affects field strength. [67] The 1.4 MT Starfish Prime test produced a 1.4kt prompt Gamma Ray output which resulted in a peak field strength of about 50,000 v/m. This is about the minimum energy needed to do substantial damage to a country's electrical systems but even at that level many things would be left unharmed as the danger diminishes with distance. Starfish produced the largest fields of the high-altitude detonations; they caused outages of the series-connected street-lighting systems of Oahu (Hawaii), probable failure of a microwave repeating station on Kauai, failure of the input stages of ionospheric sounders and damage to rectifiers in communication receivers, Other than the failure of the microwave link, no problem was noted in the telephone system. No failure was noted in the telemetry systems used for data transmission on board the many instrumentation rockets. There was no apparent increase in radio or television repairs subsequent to any of the Johnson Island detonations. The failures observed were generally in the unprotected input stages of receivers or in rectifiers of electronic equipment; transients on the power line probably caused the rectifier failures. There was one failure in the unprotected part of an electronic system of the LASL Optical Station on top of Mount Haleakala on Maui Island.[68] DoD EMP SIMULATIONS TESTS We tested a sample of 37 cars in an EMP simulation laboratory, with automobile vintages ranging from 1986 through 2002. ... The most serious effect observed on running automobiles was that the motors in three cars stopped at field strengths of approximately 30 kV/m or above. In an actual EMP exposure, these vehicles would glide to a stop and require the driver to restart them. Electronics in the dashboard of one automobile were damaged and required repair. Based on these test results, we expect few automobile effects at EMP field levels below 25 kV/m. Approximately 10 percent or more of the automobiles exposed to higher field levels may experience serious EMP effects, including engine stall, that require driver intervention to correct. Five of the 18 trucks tested did not exhibit any anomalous response up to field strengths of approximately 50 kV/m. Based on these test results, we expect few truck effects at EMP field levels below approximately 12 kV/m. At higher field levels, 70 percent or more of the trucks on the road will manifest some anomalous response following EMP exposure. Approximately 15 percent or more of the trucks will experience engine stall, sometimes with permanent damage that the driver cannot correct. Results indicate that some computer failures can be expected at relatively low EMP field levels of 3 to 6 kilovolts per meter (kV/m). At higher field levels, additional failures are likely in computers, routers, network switches, and keyboards embedded in the computer-aided dispatch, public safety radio, and mobile data communications equipment. ... none of the radios showed any damage with EMP fields up to 50 kV/m. While many of the operating radios experienced latching upsets at 50 kV/m field levels, these were correctable by turning power off and then on.[69] Contrary to many sensational headlines, the US Military is well protected from most EMP’s. For decades now the military has defined systems around survivability. The details of such are contained here: E.6 Military Standards DTRA and its predecessor agencies have developed, and regularly update, military standards (MIL-STDs) designed to aid in the design, development, test, and evaluation of DoD systems subjected to nuclear and EMP environments. These MIL-STDs cover nuclear-generated EMP survivability of aircraft, maritime, and other systems in coordination with the Air Force and the Navy, as well as the broader community of stakeholders. The following are some of the relevant MIL-STDs: MIL-STD-1766, Nuclear Hardness and Survivability Program Requirements for ICBM Weapon Systems defines nuclear hardness and survivability requirements and practices for use during the concept exploration, demonstration and validation, full-scale development, production, and deployment phases of the acquisition life-cycle of ICBM weapon systems. MIL-STD-2169C, HEMP Environment Standard (Classified) defines high-altitude EMP environments for system hardness design and testing. MIL-STD-3023, HEMP Protection for Military Aircraft establishes design margin, performance metrics, and test protocols for HEMP protection of military aircraft with nuclear EMP survivability at three hardness levels. This MIL-STD may also be used for aircraft that support multiple missions. Subsystems of the aircraft required to fully comply with the provisions of the standard are designated as Mission-Critical Subsystems having a HEMP survivability requirement. This approach also allows for consideration of platforms not yet addressed in this standard, such as Unmanned Aerial Vehicles. MIL-STD-188-125, HEMP Protection for Ground-Based C4I Facilities Performing Critical, Time Urgent Missions is in the process of being updated. DTRA is investigating present capabilities and shortfalls of power filters as well as utilizing test results from EMP simulators. MIL-STD-4023, Maritime EMP Standard establishes performance metrics, test protocols, and hardness margin levels for HEMP protection of military surface ships that must function when subjected to a HEMP environment. Satellite System Nuclear Survivability (SSNS) Environment Standard defines nuclear weapon environment levels for evaluating satellite system performance in nuclear scenarios. Comprehensive Atmospheric Nuclear Environments Standard (CANES) provides detailed nuclear environments and effects for a number of different nuclear weapon-types as a function of height of burst. A supplement to this MIL-STD covers nuclear-disturbed communication environments and nuclear ground burst environments.[70] DoD has adopted protective priorities using commercial protective equipment. The Department of Defense (DoD) has experience in prioritizing and protecting systems since the 1960s. The DoD has prioritized and has protected selected systems against EMP (and, by similitude to E3, GMD effects). DoD places emphasis on protecting its strategic triad and associated command, control, communications, computer, and intelligence (C4I) systems. Nuclear EMP will burn out every exposed electronic system is FALSE. The DoD and Congressional EMP Commission’s EMP test data demonstrates that smaller, self-contained systems that are not connected to long-lines tend not to be affected by EMP fields**.** Examples of such systems include vehicles, hand-held radios, and disconnected portable generators. If there is an effect on these systems, it is more often temporary upset rather than component burnout. [71] The NRC on Nuclear Power Facilities Vulnerabilities “The most probable effect of EMP on a modern nuclear power plant is an unscheduled shutdown. EMP may also cause an extended shutdown by the unnecessary activation of some safety-related systems. In general, EMP would be a nuisance to nuclear plants, but it is not considered a serious threat to plant safety. Counter-measures to minimize the effects of EMP have been recommended. Implementation of these recommendations would also increase the protection of the plant against damage by lightning, switching, and electromagnetic interference transients as well as general failures in electrical, control, and instrument power. “[72] As part of a larger EMP study in the 1980’s Sandia Laboratories analyzed the “worst case” scenario and concluded that EMP poses no substantial threat to such (nuclear**)** plants based upon both analysis and simulated EMP tests.[73] The NRC’s current statement The NRC requires U.S. nuclear power plants to be able to shut down safely in the face of many extreme events – tornados, hurricanes and earthquakes. But the NRC also takes into account far more unusual events, like solar flares and man-made electromagnetic pulse (EMP). Both can affect generators, transformers and other parts of the electric grid – which in turn could affect nuclear power plants. The NRC has been examining these issues for more than 30 years, starting in the late 1970s when the agency studied how EMP could affect nuclear power plant safe-shutdown systems. In February 1983 the NRC issued the study’s conclusion: nuclear power plants’ safety systems can do their jobs after an EMP event. The agency revisited the issue in 2007 to account for the increasing use of digital computer systems in nuclear plants, which potentially could be more susceptible to EMP. The agency continued to conclude as recently as two years ago that nuclear power plants can safely shut down following an EMP event. Additional research in 2010 analyzed and compared solar or geomagnetically-induced current events to those of the EMP events previously analyzed. This work led to the same conclusion as the EMP studies – U.S. nuclear power plants can safely shut down if a solar storm disrupts the grid. The edge of the NRC’s authority lies in a nuclear power plant’s electric switchyard, where our rules mesh with those of the Federal Energy Regulatory Commission, which oversees the nation’s electric grids. Another body, the North American Electric Reliability Corporation develops and enforces grid reliability standards. The NRC works closely with FERC and NERC on grid reliability issues, including the effects of solar or geomagnetic storms and EMP. In 2015 FERC began the process of creating reliability standards to protect the grid against these events.[74] This new standard was made into law on November, 17, 2016.[75][76] The NRC continues to update operator guidelines and requirements with changes in technology or new understandings on issues previously not covered such as the events at Fukushima in 2011. Safety enhancements on topics like spent fuel cooling pools are covered in regular NRC updates, the latest being 2015 titled Mitigation of Beyond-Design-Basis Events[77] . EMP Comparisons with lightning Lightning shares many of characteristics of E2, but contrary to what is often quoted, its magnitude can exceed even the peak E1 fields in the discharge region. Research on lightning indicates that a stroke may contain significant components with rise-time of less than 10−7 sec and electric fields greater than 106V/m—more than a order of magnitude greater than even the highest peak E1 fields, from the biggest nuclear devices. The implications of lightning research for EMP vulnerability is a critical topic to include in any future peer-reviewed study of the EMP threat.[78]

#### No meltdown impact

Kaiser 11 [Tiffany, Writer for Daily Tech, citing Nuclear Regulatory Commission Report, August 2, 2011, “NRC: Far Fewer People Would Die in a U.S. Nuclear Meltdown Than Previously Thought,” <http://www.dailytech.com/NRC+Far+Fewer+People+Would+Die+in+a+US+Nuclear+Meltdown+Than+Previously+Thought/article22330.htm>]

The nuclear crisis at Fukushima Daiichi in Japan has caused a nuclear frenzy where leaders around the world are questioning the safety of their plants. For instance, French President Nicolas Sarkozy called for global nuclear review after visiting Japan, and U.S. senators demanded that the Nuclear Regulatory Commission (NRC) repeat an expensive inspection of the country's nuclear power. But now, the NRC is close to completing a large nuclear study that may ease a few worried minds. The NRC has been working with Sandia National Laboratories (a Department of Energy lab) on a study that revises previous projections of how quickly and how much cesium 137, which is a radioactive material made when uranium is split, could release from a plant after a nuclear core meltdown. The NRC has been working on the study for six years, and it will not be completely finished until next spring. But the nuclear watchdog group, Union of Concerned Scientists, has obtained an early copy of the report through a Freedom of Information Act request. The new study is based on how much and how quickly cesium 137 could escape an American nuclear plant if a total blackout were to occur. A total blackout means complete loss of power from the grid, and backup diesel generators and batteries have failed as well. This leads to a nuclear meltdown. NRC scientists said that a total blackout would be rare at an American plant, but it is better to be safe than sorry. In addition, the NRC wanted to update previous projections related to cesium 137. The NRC focused on two different types of reactors in the U.S.: the Peach Bottom Atomic Power Station in Pennsylvania, which has boiling-water reactors like Fukushima Daiichi, and the Surry Power Station in Virginia, which has pressurized-water reactors. Over 100 different plants were studied. Through computer models and engineering analyses, the NRC has concluded that the meltdown of a typical American reactor would lead to "far fewer deaths" than previously thought. According to the new study, only 1 to 2 percent of a reactor core's cesium 137 could escape during a total blackout. Previous NRC estimates concluded that 60 percent of the cesium inventory could escape. In addition, the new study found that one person in every 4,348 within a 10-mile radius of a nuclear meltdown would develop a "latent cancer" from radiation exposure. In previous estimates, it was one person in every 167. The NRC said that large releases of radioactive material would not be "immediate," meaning that people within a 10-mile radius would have plenty of time to evacuate the premises. It concluded that the chance of death from acute radiation exposure within a 10-mile radius would be near zero, but some would be exposed to high enough doses to experience fatal cancers decades later. "Accidents progress more slowly, in some cases much more slowly, than previously assumed," said Charles G. Tinkler, a senior adviser for research on severe accidents and an author of the study. "Releases are smaller, and in some cases much smaller, of certain key radioactive materials."

### ---AT: Famine

#### No famine impact

Denkenberger et al. 17 [David, International Journal of Disaster Risk Reduction, Global Catastrophic Risk Institute, Jan 5, 2017, “Feeding Everyone if the Sun is Obscured and Industry is Disabled,” <https://www-sciencedirect-com.proxy.lib.umich.edu/science/article/pii/S2212420916305453>]

For combined sun blocking and industrial failure scenarios, the reduced output of conventional agriculture would present a threat of causing mass starvation. This study showed that one solution in the short term is extracting edible calories from killed leaves using distributed mechanical processes. Then a constrained food web could be formed where part of the remainder from this could be fed to chickens, and the rest coupled with leaf litter could have mushrooms grown on it. A second group of solutions is growing mushrooms on dead trees and the residue going to cellulose digesting animals such as cattle and rabbits. Typically, in these catastrophes the sun is not blocked completely, so some agriculture would be possible based off of existing farming in extreme environments (e.g. growing UV and cold tolerant crops in the tropics). Furthermore, the cooling climate would cool the upper layer of the ocean, causing upwelling of nutrient-rich deep ocean water. This would facilitate algae growth in the ocean, feeding fish; retrofitting of ships to be sail powered could enable significant fishing. The results of this study show these solutions could enable the feeding of everyone given minimal preparation, and this preparation should be a high priority now.

### ---AT: Ozone

#### Not extinction---bounces back, in the meantime wear glasses and sunscreen!

Brian **Martin 82** [Brian Martin (Professor of Social Sciences @ the University of Wollongong) December 1982 “The global health effects of nuclear war” Current Affairs Bulletin, Vol. 59, No. 7, pp. 14-26, online @ http://www.uow.edu.au/arts/sts/bmartin/pubs/82cab/index.html, loghry]

Another major threat to ozone comes from nuclear explosions. Nitric oxide is produced essentially by the 'burning' of nitrogen in the atmosphere, and this occurs whenever air temperatures are sufficiently hot: in automobile engines, in aircraft engines and in nuclear explosions. Studies of the creation of oxides of nitrogen by nuclear explosions were first undertaken as part of the SST debate, to determine whether the nuclear weapons tests in the 1950s and 1960s had reduced observed ozone levels.[28] It was only in 1974 that John Hampson made a point which had been overlooked, namely that large-scale nuclear war could cause a major and disastrous reduction in ozone levels.[29] Calculations made in the mid-1970s assuming large nuclear arsenals with many high-yield explosions concluded that reductions of ozone could reach 50 per cent or more in the northern hemisphere, with smaller reductions in the southern hemisphere.[30] But since the number of high-yield weapons in present nuclear arsenals is now smaller, much less oxides of nitrogen would be deposited in the stratosphere by nuclear war than assumed in earlier calculations, and so significant ozone reductions are unlikely.[31] This conclusion remains tentative. The actual behaviour of stratospheric ozone is quite complicated, involving many chemical compounds and numerous chemical reactions, the changing effects of temperature, the angle and intensity of sunlight, and the effect of air motions. Computer models of the effects of nuclear war on ozone are able to take into account only a part of this complexity, and new information about chemical reaction rates in particular have led in the past to periodic revisions in the calculated effects of added oxides of nitrogen. If significant ozone reduction did occur, the most important direct effect on humans would be an increase in skin cancer. However, this is seldom lethal, and could be avoided by reducing exposure to sunlight. Potentially more serious would be effects on crops.[32] Some of the important grains, for example, are sensitive to uv. Whether the net effects on crop yields would be significant is hard to estimate. But whatever the reduction in ozone, ozone levels would return pretty much to normal after a few years.[9] It seems unlikely that in the context of a major nuclear war the changes in uv alone would be of serious concern. In particular, the threat of human extinction raised by Jonathan Schell in The Fate of the Earth,[33] based mostly on effects of increased uv from ozone reduction, seems very small indeed. It is sometimes claimed that nuclear war could destroy ozone to such an extent that humans and animals would be blinded by excess uv. Even if large numbers of high-yield weapons were exploded, this possibility seems very unlikely except for a contribution to snow blindness in the far north. Stratospheric ozone can never be completely removed, but at most reduced greatly. Even if a 50 per cent or more reduction in ozone occurred - and as noted this seems improbable with present nuclear arsenals - protection from uv for humans could be obtained from sunglasses or just ordinary glasses, which absorb uv. For animals, the following considerations are relevant. Ozone levels vary considerably from place to place and from time to time, both seasonally and daily (sometimes by up to 50 per cent). Sunlight at the equator typically passes through only half as much ozone as at the mid-latitudes, yet animals at the equator are not known to go blind more often than elsewhere. Furthermore, most ozone reductions from a nuclear war would be in the mid and high latitudes, where ozone levels are higher to start with and where the 'path length' of sunlight through ozone is increased due to its oblique angle of incidence. But this does not mean complacency is warranted, as the concerns of John Hampson illustrate.

#### The ozone layer doesn’t matter

Matt **Ridley 14**. DPhil from Oxford, Fellow of the Academy of Medical Sciences, The Times. September 15, 2014. “The ozone hole isn’t fixed. But that’s no worry”, http://www.thetimes.co.uk/tto/opinion/columnists/article4206440.ece

How much damage did the ozone hole ever threaten to do anyway? It is fascinating to go back and read what the usual hyperventilating eco-exaggerators said about ozone thinning in the 1980s. As a result of the extra ultraviolet light coming through the Antarctic ozone hole, southernmost parts of Patagonia and New Zealand see about 12 per cent more UV light than expected. This means that the weak September sunshine, though it feels much the same, has the power to cause sunburn more like that of latitudes a few hundred miles north. Hardly Armageddon. The New York Times reported “an increase in Twilight Zone-type reports of sheep and rabbits with cataracts” in southern Chile. Not to be outdone, Al Gore wrote that “hunters now report finding blind rabbits; fisherman catch blind salmon”. Zoologists briefly blamed the near extinction of many amphibian species on thin ozone. Melanoma in people was also said to be on the rise as a result. This was nonsense. Frogs were dying out because of a fungal disease spread from Africa — nothing to do with ozone. Rabbits and fish blinded by a little extra sunlight proved to be as mythical as unicorns. An eye disease in Chilean sheep was happening outside the ozone-depleted zone and was caused by an infection called pinkeye — nothing to do with UV light. And melanoma incidence in people actually levelled out during the period when the ozone got thinner. Then remember that the ozone hole appears when the sky is dark all day, and over an uninhabited continent. Even if it persists into the Antarctic spring and spills north briefly, the hole allows 50 times less ultraviolet light through than would hit your skin at the equator at sea level (let alone at a high altitude) in the tropics. So it would be bonkers to worry about UV as you sailed round Cape Horn in spring, say, but not when you stopped at the Galapagos: the skin cancer risk is 50 times higher in the latter place.

### War Inevitable---2NC

#### Sarmat: it’s incredibly hard to intercept

**Episkopos 19** [Mark Episkopos, is a frequent contributor to The National Interest and serves as research assistant at the Center for the National Interest, is also a PhD student in History at American University, “Russia Claims Its RS-28 Sarmat ICBM Has "Practically Unlimited Range". Here's What We Know,” National Interest, 4-21-2019, <https://nationalinterest.org/blog/buzz/russia-claims-its-rs-28-sarmat-icbm-has-practically-unlimited-range-heres-what-we-know>]

Of the six strategic weapons unveiled by Russian President Vladimir Putin at his oft-cited 2018 annual state-of-the-nation address, “RS-28 Sarmat” is among the most consequential. Dubbed “Satan 2” in NATO reporting, Putin [described](https://www.youtube.com/watch?v=c9iHPGDjNfM) Sarmat as a “heavy,” uninterceptable ICBM with “practically unlimited range.” [Sarmat](https://nationalinterest.org/blog/the-buzz/russias-massive-200-ton-rs-28-icbm-will-be-ready-nuclear-war-25135) has since been hailed as the imminent future of Russian counterforce capability; a 200-ton, mach 10, liquid-fuelled weapon that’s orders of magnitude more powerful than the four-decades-old Soviet RS-36M missile it is replacing. But updates have been scant over the remainder of 2018, nor has the Kremlin offered a concrete development timeline. So, where is Sarmat? Potentially right around the corner, according to a recent series of Kremlin statements. At a [Kremlin military ceremony](https://ria.ru/20190411/1552596646.html) held last week, Putin gave a speech on the need to “meld Russian military tradition with the latest, cutting-edge knowledge, technology, and ability to effectively apply them…” Recounting the recent examples in this vein, Putin mentioned that “Kinzhal” hypersonic missiles and the “Peresvet” laser system are already being delivered to the Russian armed forces before briefly turning to Sarmat, which he [announced](https://tass.ru/armiya-i-opk/6323225) is “successfully undergoing final testing.” “Successfully undergoing final testing” is a carefully worded statement if there ever was one. This can suggest any number of timelines, depending on the scale of the “final testing” and how far along Sarmat is in that process; it can put Sarmat’s delivery date anywhere from right-around-the-corner to several years away. Skepticism would not be wholly unfounded, given Sarmat’s prolific history of delays. Ejection tests originally slated for 2015 were pushed back to 2016, and [then again](https://www.defensenews.com/digital-show-dailies/space-symposium/2017/03/27/russian-icbm-capable-of-wiping-out-texas-is-delayed/)to the end of 2017; the 2017 tests [revealed](https://thediplomat.com/2018/07/russia-completes-ejection-tests-of-rs-28-sarmat-icbm/) serious technical flaws with the ejection mechanism, further complicating Sarmat development. The US State Department, for their part, made light of the situation with [the creation](https://www.cnbc.com/2018/08/22/state-department-trolls-putin-by-naming-post-after-missile-he-bragged-about.html)of a new SARMAT, or “senior advisor for Russian malign activities and trends,” post. Sarmat’s new serial production deadline is 2021, according to a [TASS report](http://tass.com/defense/1043450) citing a defense insider source. Sarmat’s developmental track record casts this timeline in a justifiably dubious light, though more recent reports have instilled Russian commentators and observers with a newfound cause for optimism. Several months ago, Chairman of the Scientific and Technical Council at Roscosmos [Yuri Koptev](http://tass.com/defense/1043450) suggested that Russian engineers had finally managed to put Sarmat’s technical troubles behind them: "A very serious stage was held last year. This involved pop-up tests, which confirmed the correctness of all the basic technical solutions.” The nature of these “technical solutions” is unknown, but they seem compelling enough to Roscosmos CEO Dmitry Ragozin, who personally reassured Putin in early February that the testing is proceeding as planned and will wrap up by 2020.

#### Uncertainty: power shifts between potentially revisionist powers creates crisis misperceptions

Yoder 19 [Brandon K. Yoder, Ph.D., Department of Politics, University of Virginia, Research Fellow at the National University of Singapore Lee Kuan Yew School of Public Policy Centre on Asia and Globalisation, January 28, 2019, “Uncertainty, Shifting Power and Credible Signals in US-China Relations: Why the “Thucydides Trap” Is Real, but Limited”, Journal of Chinese Political Science, Volume 24, Issue 1, <https://link.springer.com/article/10.1007/s11366-019-09606-1>]

A prominent subset of realist scholars has compellingly argued that this is often the case: large power shifts engender formidable barriers to the credibility of rising states’ cooperative signals, such that uncertainty about others’ intentions is intractable and declining states must make worst-case assumptions about rising states’ intentions [9, 12, 45, 53]. This is because hostile rising states have strong incentives to misrepresent their intentions while relatively weak, by mimicking the cooperative behaviors of benign risers and refraining from attempting to revise the international order. These realists argue that for hostile risers the costs of foregoing immediate revision are outweighed by the prospects of avoiding opposition from the decliner and attempting revision under a more favorable distribution of power in the future. As such, if cooperative signals are likely to be sent by both benign and hostile risers alike, such signals are non-credible, and declining states should remain highly uncertain about any rising state’s future intentions. This exacerbates the security dilemma, and gives declining states strong incentives to take preventive action even against risers that have exhibited cooperative behavior.

### No Nuclear Winter---1NC

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

**Reisner et al. 18** [Jon Reisner – Climate and atmospheric scientist at the Los Alamos National Laboratory. Gennaro D’Angelo – Climate scientist at the Los Alamos National Laboratory, Research scientist at the SETI institute, Associate specialist at the University of California, Santa Cruz, NASA Postdoctoral Fellow at the NASA Ames Research Center, UKAFF Fellow at the University of Exeter. Eunmo Koo - Scientist at Applied Terrestrial, Energy, and Atmospheric Modeling (ATEAM) Team, in Computational Earth Science Group (EES-16) in Earth and Environmental Sciences Division and Co-Lead of Parallel Computing Summer Research Internship (PCSRI) program at the Los Alamos National Laboratory, former Staff research associate at UC Berkeley. Wesley Even - Computational scientist in the Computational Physics and Methods Group at Los Alamos National Laboratory. Matthew Hecht – Atmospheric scientist at the Los Alamos National Laboratory. Elizabeth Hunke - Lead developer for the Los Alamos Sea Ice Model (CICE) at the Los Alamos National Laboratory responsible for development and incorporation of new parameterizations, model testing and validation, computational performance, documentation, and consultation with external model users on all aspects of sea ice modeling, including interfacing with global climate and earth system models. Darin Comeau – Climate scientist at the Los Alamos National Laboratory, Randy Bos - Project leader at the Los Alamos National Laboratory, former Weapons Effects program manager at Tech-Source, James Cooley – Computational scientist at the Los Alamos National Laboratory specializing in weapons physics, emergency response, and computational physics, “Climate impact of a regional nuclear weapons exchange:An improved assessment based on detailed source calculations,” March 16, 2018, <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2017JD027331>]

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

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

Turchin and Green 18 [Alexey Turchin, Scientist for the Foundation Science for Life Extension in Moscow, Russia, Founder of Digital Immortality Now, author of several books and articles on the topics of existential risks and life extension, and Brian Patrick Green – Director of technology ethics at the Markkula Center for Applied Ethics, teaches AI ethics in the Graduate School of Engineering at Santa Clara University, “Islands as refuges for surviving global catastrophes,” September 2018, July 20, 2019, <https://www.emerald.com/insight/content/doi/10.1108/FS-04-2018-0031/full/html?fullSc=1&mbSc=1&fullSc=1>]

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

### No Nuclear Winter---2NC

#### Islands solve

Turchin and Green 18 [Alexey Turchin, Scientist for the Foundation Science for Life Extension in Moscow, Russia, Founder of Digital Immortality Now, author of several books and articles on the topics of existential risks and life extension, and Brian Patrick Green – Director of technology ethics at the Markkula Center for Applied Ethics, teaches AI ethics in the Graduate School of Engineering at Santa Clara University, “Islands as refuges for surviving global catastrophes,” September 2018, July 20, 2019, <https://www.emerald.com/insight/content/doi/10.1108/FS-04-2018-0031/full/html?fullSc=1&mbSc=1&fullSc=1>]

Islands offer excellent protection against natural and/or low-tech catastrophes which are neither too large nor too small. Remoteness, isolation and the diverse conditions found on different islands could be helpful features to aid survival in the face of different types of catastrophes. Islands could provide protection against a human-to-human transmitted biological pandemic; as mentioned in the Introduction, some islands were able to escape the 1918 flu pandemic by implementing effective quarantine measures. Islands may help to survive a long-term collapse in food production caused by nuclear winter, agricultural pests and other catastrophes. Islands often have non-traditional food sources, such as birds and sea flora and fauna, which may provide independent subsistence for an indefinitely long period. On remote islands, the extent of radioactive andchemical contamination from catastrophes would likely be smaller. This is especially true of islands located in the Southern hemisphere close to the Antarctic, as winds around the pole maintain some isolation from the rest of the atmosphere. Constant rains and winds may accelerate the decontamination of some islands (like Kerguelen). In addition, sea animals may be relatively less contaminated food sources. Islands away from the equator could provide protection against some of the direct effects of a gamma ray burst (muons) (Cirkovi c and Vukoti c, 2016 ) if they were in the constant shadow of the Earth, below the horizon of the gamma ray source. In the case of global war or technological collapse, many islands could become unreachable. This would protect them against human-borne diseases, pirates, looters and certain autonomous weapon systems such as land-based or short-range drones. Additionally, remote and sparsely populated islands may not be interesting military targets. In case of war, it may be more expensive to reach them than to ignore them, though this depends on the nature of the war. For example, the Germans used remote unpopulated islands in the Arctic (Grossman, 2016) and in the Southern Ocean (Rogge and Frank, 1956) as secret bases during Second World War, and the allies later sent cruisers to Kerguelen to check if Germans were hiding there. It might be too expensive for a hostile AI to seek out and kill small groups of people in remote places, if they do not pose an immediate risk to the AI’s interests. However, over time, the AI’s risk calculation might change.

#### 15 islands are capable of facilitating post-apocalyptic human repopulation – We’ll insert this chart

Turchin and Green 18 [Alexey Turchin, Scientist for the Foundation Science for Life Extension in Moscow, Russia, Founder of Digital Immortality Now, author of several books and articles on the topics of existential risks and life extension, and Brian Patrick Green – Director of technology ethics at the Markkula Center for Applied Ethics, teaches AI ethics in the Graduate School of Engineering at Santa Clara University, “Islands as refuges for surviving global catastrophes,” September 2018, July 20, 2019, <https://www.emerald.com/insight/content/doi/10.1108/FS-04-2018-0031/full/html?fullSc=1&mbSc=1&fullSc=1>]

Chart

Description automatically generated with medium confidence

#### Volcanos disprove

**Reisner et al. 18** [Jon Reisner – Climate and atmospheric scientist at the Los Alamos National Laboratory. Gennaro D’Angelo – Climate scientist at the Los Alamos National Laboratory, Research scientist at the SETI institute, Associate specialist at the University of California, Santa Cruz, NASA Postdoctoral Fellow at the NASA Ames Research Center, UKAFF Fellow at the University of Exeter. Eunmo Koo - Scientist at Applied Terrestrial, Energy, and Atmospheric Modeling (ATEAM) Team, in Computational Earth Science Group (EES-16) in Earth and Environmental Sciences Division and Co-Lead of Parallel Computing Summer Research Internship (PCSRI) program at the Los Alamos National Laboratory, former Staff research associate at UC Berkeley. Wesley Even - Computational scientist in the Computational Physics and Methods Group at Los Alamos National Laboratory. Matthew Hecht – Atmospheric scientist at the Los Alamos National Laboratory. Elizabeth Hunke - Lead developer for the Los Alamos Sea Ice Model (CICE) at the Los Alamos National Laboratory responsible for development and incorporation of new parameterizations, model testing and validation, computational performance, documentation, and consultation with external model users on all aspects of sea ice modeling, including interfacing with global climate and earth system models. Darin Comeau – Climate scientist at the Los Alamos National Laboratory, Randy Bos - Project leader at the Los Alamos National Laboratory, former Weapons Effects program manager at Tech-Source, James Cooley – Computational scientist at the Los Alamos National Laboratory specializing in weapons physics, emergency response, and computational physics, “Climate impact of a regional nuclear weapons exchange:An improved assessment based on detailed source calculations,” March 16, 2018, <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2017JD027331>]

To quantitatively account for natural and forced variability in the climate system, we created two ensembles, one for the natural, unforced system and a second ensemble using a range of realistic vertical profiles for the BC aerosol forcing, consistent with our detailed fire simulation. The control ensemble was generated using small atmospheric temperature perturbations (Kay et al., 2015). Notably, the overall spread of anomalies in both ensembles is very similar. These ensembles were then used to create “super ensembles” using a statistical emulator, which allows a robust statistical comparison of our simulated results with and without the carbon forcing. Our primary result is the **decreased impact on global climate indices**, such as global average surface temperature and precipitation, relative to standard scenarios considered in previous work (e.g., Robock et al., 2007a; Stenke et al., 2013; Mills et al., 2014; Pausata et al., 2016). With our finding of **substantially less BC aerosol being lofted to stratospheric heights** (e.g., over a factor of four less than in most of the scenarios considered by previous studies), these globally averaged anomalies drop to **statistically insignificant levels** after the first several years (Figures 14 and 16). Our results are generally comparable to those predicted by other studies that considered exchange scenarios in which only about 1 Tg of soot is emitted in the upper troposphere (Robock et al., 2007a; Mills et al., 2008; Stenke et al., 2013). There are more subtle suggestions of regional effects, notably in the extent of the region over which sea surface temperature differences between ensembles remain significant in the final years of simulation (Figure 17). Further work is required to adequately analyze these and other potential regional effects. Historical analysis of several large volcanic eruptions and a recent large fire also supports this result. For example, Timmreck et al. (2010) claim that nonlinear aerosol effects of the Toba Tuff eruption 74,000 years ago helped **limit significant global cooling** impacts to a **two-year time period** and that any cooling beyond this time period could be due to other effects. It should be noted that this eruption was estimated to have produced **10^6 Tg** of ash and comparable amounts of other gases, such as sulfur dioxide (SO2), while the estimated amount of soot produced by a regional exchange is on the order of **10 Tg**, or **5 orders of magnitude smaller than the ash** (not including gases) **produced by the Toba eruption**. Noting that a nuclear exchange is not identical to volcanic events, it has been asserted that BC particles produced by fires should have a **greater impact on absorbing solar radiation** than even has the significantly larger amounts of ash and various gases produced by large eruptions (e.g., Robock and Toon 2010). Likewise, recent work in analyzing BC emissions from large fires suggests that in such fires, similar to large volcanic eruptions, **coating of soot particles with other particles** in convective eddies **tends to increase their size and hence increase their subsequent rainout** (China et al., 2013) before they can reach the stratosphere. In fact, the recent study of Pausata et al. (2016) found that growth of BC aerosol via coagulation with organic carbon significantly reduce the particles’ lifetime in the atmosphere

## Misc Russia Tech Impacts

### AT: Russian Warheads

#### Skyfall sucks

Matthew Gault 22, professional multimedia journalist and storyteller who writes about conflict and culture, “Russia’s New Nuclear Missiles Squeeze Response Time,” updated 3/21/22, https://www.scientificamerican.com/article/russias-new-nuclear-missiles-squeeze-response-time/micahw

Instead Lewis worries more about the Skyfall, the nuclear-powered cruise missile carrying a nuclear warhead. “I’m a little bothered by the menagerie of science fiction ideas that the Russians are working on,” he says. “We don’t know much about the technology behind that one (Skyfall), but certainly when the U.S. investigated the idea it was pretty nasty in terms of radiation released just to power it.” According to Putin, the Skyfall is a superpowered Tomahawk cruise missile launched via ground or air. The best Tomahawks can travel 1,550 miles—but with a nuclear reactor powering it, the Skyfall effectively has an unlimited range. Russian military sources reported the country had successfully tested the cruise missile in January 2019; however, U.S. intelligence suggests that it has yet to demonstrate a range greater than 22 miles, and may not reach its full potential for another 10 years.

#### RS-28 Sarmat sucks

Matthew Gault 22, professional multimedia journalist and storyteller who writes about conflict and culture, “Russia’s New Nuclear Missiles Squeeze Response Time,” updated 3/21/22, https://www.scientificamerican.com/article/russias-new-nuclear-missiles-squeeze-response-time/micahw

Still, a radiation-spewing cruise missile with unlimited range is not Russia’s only frightening new weapon. It is also testing the RS-28 Sarmat, a liquid-fueled ICBM designed to brute-force its way through U.S. missile defense systems. The missile is fast, huge—119 feet tall with a weight of more than 220 tons—and full of weapons: It carries a 10-ton payload, big enough to include 24 separate nuclear-tipped Avangard hypersonic glide vehicles.

And the Sarmat is dangerous for reasons beyond its size. According to Coyle it also has a shorter-than-usual boost phase (the period of an ICBM’s launch when it is rocketing into the atmosphere), which gives U.S. missile defenses less time to shoot it down. If a brief launch window is not enough to protect the missile, Coyle says, “[Putin] also said that Sarmat would carry countermeasures designed to confuse U.S. anti-missiles systems.”

### Space Weapons---2NC

#### Russia develops space weapons.

Dr. Matthew Mowthorpe 22, Satellite architect engineer for Airbus Defence and Space, “The Russian space threat and a defense against it with guardian satellites,” 6/13/22, https://thespacereview.com/article/4401/1/micahw

Russia has a long history of developing space weapons. It has demonstrated a capability to kinetically intercept satellites in low Earth orbit (LEO) from space and more recently from the ground in late 2021. Additionally, it can use ground-based lasers to dazzle satellites in LEO. Russia can conduct radiofrequency (RF) jamming from mobile platforms against communication satellites in LEO. This article examines Russia’s ASAT concepts and places them in the context of military space doctrine that threatens both US and NATO allies’ satellites. The increasing threat to satellites has led to the development of the concept of a bodyguard satellite.

Russian counterspace programs

Under Vladimir Putin, Russia has reinvigorated its political desire to obtain counterspace capabilities for the same reason as China, to advance its regional power and limit the ability of the US to counter Russia’s freedom of action. Russian military thought sees modern warfare as a struggle over information dominance and netcentric operations that can take place without clear boundaries. Russia is pursuing the goal of incorporating EW capabilities throughout its military to both protect its own space-enabled capabilities and degrade or deny those capabilities to its adversary. In space, Russia is seeking to mitigate the superiority of US and NATO space assets by fielding a number of ground, air, and space-based offensive capabilities.

The former Soviet Union tested a co-orbital ASAT system known as Isrebitel Sputnikov (IS). This was based on a SS-9 missile and used a shrapnel at an effective range of 50 meters. However, it needed two orbits to approach the target satellite, which gave the target satellite several hours to detect the attack and take evasive action.[1] The IS was capable of targeting satellites up to 2,200 kilometers with an estimated kill probability of 70–80%, and an IS-M system was developed to rendezvous with a single orbit. It was intended to develop the system IS-MD to intercept satellites in GEO, however the program was ended in 1993.[2]

Russia has been testing technologies for rendezvous and proximity operations (RPO) in both LEO and GEO in order to develop a co-orbital ASAT capability.[3] Russia is likely to have started a co-orbital ASAT program called Burevestnik.[4] The concept of Burevestnik is most likely that it will not carry a kinetic kill vehicle like its Soviet predecessor, but will serve as a launch vehicle for small interceptor satellites that can approach and disable enemy satellites.[5] The status of this program is unclear, as open reporting is often contradictory, nevertheless, the concept appears to be one modified out of Soviet era development, and as such cannot be ruled out.

### Satellite Jammers---2NC

#### They’ll build satellite jammers---causes US escalation.

Alex Hollings 19, master's degree in Communications from Southern New Hampshire University, as well as a bachelor's degree in Corporate and Organizational Communications from Framingham State University, Russia claims their new military aircraft will be able to ‘disable enemy satellites’, https://sofrep.com/fightersweep/russia-claims-their-new-military-aircraft-will-be-able-to-disable-enemy-satellites/micahw

Kremlin-owned media outlet Sputnik News recently released details of a new electronic warfare aircraft being developed for the Russian military that they claim will not only be able to jam communications but also “disable enemy satellites.” Of course, the unnamed source from “within the Russian defense ministry” opted not to divulge any details of just how the new aircraft will engage with orbital assets, describing the systems being developed for the aircraft instead only as “fundamentally new.”

The work is currently underway to develop an aircraft equipped with jamming systems that will replace Il-22PP Porubshchik [electronic warfare aircraft], which are currently being delivered to the Russian Aerospace Forces. This machine will receive a fundamentally new on-board equipment, which will allow to conduct electronic suppression of any targets — ground, air, sea — and disable enemy satellites that provide navigation and radio communication on the ground,” the source said.

The first half of those claims are pretty believable. Electronic suppression or jamming isn’t unheard of technology and reports of Russian jamming equipment being used in Belarus and Kaliningrad during the recent Zapad military exercises near the Baltics suggest that Russia has already been working to develop digital area denial techniques that could limit or disrupt communications. The United States military has already set about conducting exercises that presuppose the idea that issues with satellite communications are just a part of peer and near-peer level warfare in the 21st century. The latter half of those claims, however, beg some interesting questions about how this new aircraft will be equipped, and just what purposes it may aim to fill.

Disabling an enemy satellite could feasibly mean a number of things. China has already demonstrated their ability to target American satellites with ground-based lasers, causing no damage but sending a clear message about the potential for weapons applications. Russia’s new aircraft could hope to use similar laser technology to damage or temporarily distract satellites, which could offer varying degrees of strategic value depending on if the laser is actually able to damage the satellite, or if it is simply able to confuse it temporarily. It’s worth noting that merely dazzling some satellites in America’s orbital constellation could dramatically reduce the nation’s chances at identifying and intercepting inbound nuclear missiles. In other words, this new electronic warfare aircraft may pose a significant threat to America’s nuclear defense infrastructure as well as to conventional forces in the fight. It’s also possible to engage satellites with missiles, as China has demonstrated in the past — but electronic warfare aircraft of this sort are rarely armed, let alone equipped with missiles of that sort.

According to Russia’s claims, the new systems being developed (and coupled with what they say will likely be an entirely new airframe) will be able to disable anti-aircraft and missile defense systems as well as disrupting the functions of unmanned aerial vehicles — and that’s where the claims are starting to sound a bit more like science fiction.

While there’s no denying that weapons have been under development for years that aim to disrupt the function of the electronics employed by the enemy in combat zones, Russia’s suggestion that their new aircraft will single-handedly be able to power down drones, disable anti-aircraft systems, and take out satellites in orbit, all while blocking digital and radio communications sounds more like a flight of fancy than anything else. Each of these applications would require either a highly specialized form of data attack or a kinetic one — and it seems unlikely that a single aircraft could house such an array of capabilities (assuming Russia could even develop them).

However, if Russia’s claims can be believed, it would make this new electronic warfare aircraft, currently being developed under the name Porubshchik 2, such an immense threat to American security that just having them could be seen as something that would require a kinetic response. The United States couldn’t sit idly by with the understanding that Russia is building a fleet of airplanes that could power down American defenses and blind the nation to an impending nuclear strike. In other words, if Russia’s claims are true, the U.S. will either see a massive influx of investment into its orbital infrastructure to offset this new slew of capabilities or a concerted diplomatic effort to curb their production, followed by military action if diplomacy fails. Likely, what we’d see would be a combination of these two possibilities.

### AT: Hollings 19

#### Their ev says it’s very unlikely.

Alex Hollings 19, master's degree in Communications from Southern New Hampshire University, as well as a bachelor's degree in Corporate and Organizational Communications from Framingham State University, Russia claims their new military aircraft will be able to ‘disable enemy satellites’, https://sofrep.com/fightersweep/russia-claims-their-new-military-aircraft-will-be-able-to-disable-enemy-satellites/micahw

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But then, the most likely outcome is that these new Russian claims, like those of their robots in combat in Syria and the supremacy of their short-ordered fifth-generation Su-57 fighters in the skies, are more about bark than they are about bite. It’s entirely likely that the Porubshchik 2, which the Russian official claimed will likely receive a new name before it enters service, will offer little more technical capability than its predecessor (shown above) — and the rest is just more Russian smoke and mirrors.

### Hypersonics---2NC

#### Russia will be able to launch hypersonic missiles by the end of 2022 – war now is key – otherwise, new missiles will overwhelm US interceptors

Cole 22 [Brendan Cole is a Senior Reporter at Newsweek, "Russia develops hypersonic missile system to up ante in Ukraine war", Newsweek, https://www.newsweek.com/russia-tsirkon-hypersonic-putin-ukraine-black-sea-1710701] GBS-HW

A system designed to launch one of Russia's much-vaunted hypersonic missiles is expected to be ready for use by the end of the year, state media have reported.

News agency Tass said that a system to launch the Tsirkon missile was being developed at the renowned rocket design bureau NPO Mashinostroyenia in Reutov, near Moscow, which Newsweek has contacted for comment.

A military source told the agency that the coastal missile system is slated to enter service with the Russian Navy "by the end of 2022."

Another source said the new system will have the capacity to strike both ground- and sea-based targets. This would give it the same capability as its predecessor, the Bastion, which deploys Oniks supersonic anti-ship cruise missiles.

Anatoly Svintsov, deputy general director of NPO Mashinostroeniya, told the Zvezda military TV channel that while there were aviation- and sea-based versions of the Tsirkon, his factory had been ordered to "intensify work on the creation of a marine version of the rocket."

The report of the missile system's development comes as the Russian Navy plays an increasingly critical role in the Ukraine war.

This week, Russia reportedly loaded Kalibr cruise missiles onto two Varshavyanka submarines in the Black Sea, only days after it was said that the U.S. would target the Russian fleet to free up grain stranded at Ukrainian ports.

Before his invasion of Ukraine, Putin repeatedly boasted about the capabilities of his country's hypersonic missiles, which are faster and more agile than standard ones and are harder for defense systems to intercept.

Over the last two and a half years, Russia has said it had test-launched the Tsirkon missile a number of times from its Northern Fleet vessel Admiral Gorshkov. Moscow says it can hit targets up to 660 miles away.

At Mach 9, the Tsirkon missile is at the low end of the hypersonic spectrum. As Newsweek has previously reported, unlike pure hypersonic missiles which rely on scramjets, it is believed to be a hybrid cruise missile and ballistic missile. Experts have warned that it could overwhelm the American Aegis Combat System.

#### Hypersonic development high now.

AP 5/28, Associated Press, “Russia says it has test-fired another hypersonic missile,” 5/28/22, https://www.npr.org/2022/05/28/1101948971/russia-hypersonic-missile-test/micahw

MOSCOW — The Russian navy on Saturday conducted another test of a prospective hypersonic missile, a demonstration of the military's long-range strike capability amid the fighting in Ukraine.

The Defense Ministry said the Admiral Gorshkov frigate of the Northern Fleet in the White Sea launched the Zircon cruise missile in the Barents Sea, successfully hitting a practice target in the White Sea about 1,000 kilometers (540 nautical miles) away.

The launch was the latest in a series of tests of Zircon, which is set to enter service later this year.

Russian President Vladimir Putin has said that Zircon is capable of flying at nine times the speed of sound and has a range of 1,000 kilometers (620 miles). Putin has emphasized that its deployment will significantly boost the capability of Russia's military.

Zircon is intended to arm Russian cruisers, frigates and submarines and could be used against both enemy ships and ground targets. It is one of several hypersonic missiles under development in Russia.

Russian officials have boasted about Zircon's capability, saying that it's impossible to intercept with existing anti-missile systems.

Putin, who has sternly warned Western allies against interfering in Ukraine, has warned in the past that Russian warships armed with Zircon would give Russia a capability to strike "decision-making centers" within minutes if deployed in neutral waters.

#### Russia used it in Ukraine.

John Ismay 22, Pentagon correspondent in the Washington bureau, and previously served as the At War reporter covering armed conflict for The New York Times, “Russia claims to use a hypersonic missile in attack on arms depot in Ukraine,” <https://www.nytimes.com/2022/03/19/us/politics/russia-hypersonic-missile-attack-claim.html/micahw>

WASHINGTON — Russia has fired scores of guided missiles into Ukraine, but on Saturday it claimed for the first time that it had launched one capable of hypersonic speed in an attack on an ammunition depot in western Ukraine. The report could not be independently verified, but if true could be the first use of a hypersonic weapon in combat.

Hypersonics, generally defined as weapons capable of flying at speeds over Mach 5, or five times the speed of sound, are at the center of an arms race among the United States, Russia and China.

The United States has pursued development of this type of weapon since the early 2000s, focusing on two different variants, according to a report released Thursday by the Congressional Research Service.

The first is a “hypersonic glide vehicle” which is launched from a rocket and then separates before gliding to a target, and the second is a faster version of a cruise missile, which could be launched by submarines, ships, airplanes and ground vehicles, the report said. The Pentagon requested $3.8 billion for hypersonic research in fiscal year 2022.

The report notes that the Department of Defense has shown growing interest in developing these weapons in part because of advances made by Russia and China. Those countries “have a number of hypersonic weapons programs and have likely fielded operational hypersonic glide vehicles — potentially armed with nuclear warheads,” according to the report.

A spokesman for the Russian Defense Ministry, Maj. Gen. Igor Konashenkov, said hypersonic missiles, called Kinzhals, had destroyed the underground warehouse storing Ukrainian missiles and aviation ammunition in the western Ivano-Frankivsk region of Ukraine.

Yuriy Ignat, a spokesman for Ukraine’s military, confirmed Saturday that Russian forces had hit an underground warehouse in western Ukraine but said the type of missile involved “is yet to be determined.”

The Pentagon did not immediately respond on Saturday morning to a request for comment on Russia’s claim.

In recent briefings at the Pentagon, defense officials have declined to comment on reports that Russian forces have used weapons like cluster munitions — which split open in midair and spread smaller bomblets — and thermobaric explosives, which create more-powerful and longer-lasting blast waves than traditional high explosives.

But they have offered a running tally of short- and medium-range ballistic missiles, cruise missiles, and surface-to-air missiles fired by Russian forces. On Wednesday, a senior defense official, who spoke on the condition of anonymity to discuss details of the war in Ukraine, said that Russian troops had launched more than 1,080 missiles since the war began on Feb. 24.

#### It escalates tensions.

Matthew Gault 22, professional multimedia journalist and storyteller who writes about conflict and culture, “Russia’s New Nuclear Missiles Squeeze Response Time,” updated 3/21/22, https://www.scientificamerican.com/article/russias-new-nuclear-missiles-squeeze-response-time/micahw

Last year Russian President Vladimir Putin unveiled six new weapons during a governmental address. The most impressive, according to nuclear experts, were the Avangard hypersonic glide vehicle, the nuclear-powered cruise missile Skyfall and the RS-28 Sarmat intercontinental ballistic missile (ICBM). These three are the crown jewels in Russia’s aggressive new nuclear policy, capable—according to Putin—of circumventing U.S. missile defense systems. Currently, American defenses are designed to knock an incoming nuke out of the air before it can hit its target—but this was already a complicated and difficult task before the development of hypersonics.

Although Russia’s new weapons sound frightening, none has actually been deployed yet. They may be ready in the next year or two, but “none of them are fully operational,” says Philip Coyle, a board member of the Center for Arms Control and Non-Proliferation. Coyle (who has also served as U.S. assistant secretary of defense), explains that some have been tested, but “none of them have been so successful that they can claim to have operational capability.”

But that doesn’t mean Coyle is not worried, especially about hypersonic threats. “Some of those would be impossible for United States missile defense systems [to counter],” he says, “especially the hypersonic air-to-ground-system and the hypersonic glide system, both of which [Putin] said had been successfully tested.” The current crop of weapons that defense experts label as hypersonic reach speeds greater than 3,000 mph.

INSIDE THE NUCLEAR ARSENAL

Other countries, including the United States and China, have also tested hypersonic weapons—but it is Russia’s hypersonic glide vehicle, the Avangard, that has garnered the defense community’s most intense attention. Glide vehicles could theoretically combine the maneuverability of a cruise missile with the speed of an ICBM. On a traditional nuclear launch involving an ICBM, a powerful rocket sends the warhead on a trajectory similar to a space launch (long-range ICBMs even go suborbital) before it turns around and plummets to Earth at hypersonic speeds. Glide vehicles like the Avangard would ride an ICBM into the sky, but they would then be released and soar along at the top of the atmosphere—above sensor range—before heading to their targets.

#### Hypersonics go nuclear – warhead ambiguity, compressed timeframe, and entanglement

Dr. Michael T. Klare 19, Five Colleges Emeritus Professor of Peace and World Security Studies, "An ‘Arms Race in Speed’: Hypersonic Weapons and the Changing Calculus of Battle;" *Arms Control Association*; https://www.armscontrol.org/act/2019-06/features/arms-race-speed-hypersonic-weapons-changing-calculus-battle

Escalation Risks and ‘Entanglement’ Many weapons can be employed for offensive and defensive purposes, but hypersonic weapons, especially those designed for use in a regional context, are primarily intended to be used offensively, to destroy high-value enemy assets, including command-and-control facilities. This raises two major concerns: the risk of rapid escalation from a minor crisis to a full-blown war and the unintended escalation from conventional to nuclear warfare.That hypersonic weapons are being designed for offensive use at an early stage in a conflict has been evident in U.S. strategic policy from the beginning. Claiming that a major adversary might try to hide or move critical assets at the outbreak of a crisis to protect them from U.S. air and missile strikes, the Pentagon hoped the prompt global-strike program would enable U.S. forces to attack those targets with minimal warning. As this program got under way, hypersonic weapons became the technology of choice for its implementation. “Systems that operate at hypersonic speeds … offer the potential for military operations from longer ranges with shorter response times and enhanced effectiveness compared to current military systems,” states the U.S. Defense Advanced Research Projects Agency. Such munitions, it adds, “could provide significant payoff for future U.S. offensive strike operations, particularly as adversaries’ capabilities advance.”12 Most of the hypersonic weapons being developed by the U.S. military, including the Air Force cruise missile and the Navy’s sea-launched system, are intended for strikes against key enemy assets at an early stage of conflict, when speed confers a significant advantage. Certain Russian weapons, such as the Kinzhal, also seem intended for this purpose. Some analysts fear that the mere possession of such weapons might induce leaders to escalate a military clash at the very outbreak of a crisis—believing their early use will confer a significant advantage in any major engagement that follows—while reducing the chances of keeping the fighting limited. It is easy to imagine, for example, how a clash between U.S. and Chinese naval vessels in the South China Sea, accompanied by signs of an air and naval mobilization on either or both sides, might prompt one combatant to launch a barrage of hypersonic weapons at all those ships and planes and their command-and-control systems, hoping to prevent their use in any full-scale encounter. This might make sense from a military perspective, but would undoubtedly prompt a fierce counterreaction from the injured side and restrict efforts to halt the fighting at a lower level of violence. The introduction of hypersonic weapons also raises concerns over the escalation from conventional to nuclear warfare. The United States has focused primarily on the development of hypersonic weapons carrying conventional warheads, but there is no fundamental reason why they could not be nuclear armed. Indeed, **Russia’s Avangard missile** is intended to deliver a nuclear warhead, and it is assumed that China’s DF-ZF is also designed with this in mind. This leads to what is called “warhead ambiguity”: the risk that a defending nation, aware of an enemy’s hypersonic launch and having no time to assess the warhead type, will assume the worst and launch its own nuclear weapons.13 Concern over this **risk has led the U.S. Congress to bar funding for the development of ICBM-launched hypersonic glide vehicles, thereby helping to propel the Pentagon’s shift away from such systems and toward the development of medium-range weapons more suitable for use in a regional context.** Nevertheless, warhead ambiguity will remain a feature of any future landscape involving the deployment of multiple hypersonic weapons, as a defender will never be certain that an enemy’s assault is entirely non-nuclear. With as little as five minutes to assess an attack—the time it would take a hypersonic glide vehicle to traverse 2,000 miles—a defender would be understandably hard pressed to avoid worst-case assumptions. Equally worrisome is the danger of “target ambiguity”: the possibility that a hypersonic attack, even if conducted with missiles known to be armed only with conventional warheads, would endanger the early-warning and command-and-control systems a defender uses for its nuclear and conventional forces, leading it to fear the onset of a nuclear attack. This is especially dangerous in light of what James Acton, a security analyst at the Carnegie Endowment for International Peace, calls the “entanglement” problem. Although almost everything involving nuclear decision-making is secret, the nuclear and conventional command-and-control systems of the major powers are widely assumed to be interconnected, or entangled, making it difficult to clearly distinguish one from another. Therefore, any attack on command-and-control facilities at the onset of crisis, however intended, could be interpreted by the defender as a prelude to a nuclear rather than a conventional attack and prompt the defender to launch its own nuclear weapons before they are destroyed by an anticipated barrage of enemy bombs and missiles.14 All this points to yet another concern related to the impact of emerging technologies on the future battlefield: the risk that nuclear-armed nations, fearing scenarios of just this sort, will entrust more and more of their critical decision-making to machines, fearing that humans will not be able to make reasoned judgments under such enormous time pressures. With hypersonic weapons in the arsenals of the major powers, military leaders may conclude that sophisticated artificial intelligence (AI) systems should be empowered to determine the nature of future missile attacks and select the appropriate response. This is a temptation that can only increase as hypersonic weapons are themselves equipped with AI systems, a capability being developed at Sandia National Laboratories, enabling them to select and navigate to an array of potential targets.15 This convergence of advanced technologies is one of the greatest concerns of analysts who fear the loss of human control over the pace of combat. Paul Scharre, a program director at the Center for a New American Security, has warned of a “flash war” erupting when machines misinterpret radar signals and initiate catastrophic, possibly nuclear responses. “Competitive pressures in fast-paced environments threaten to push humans further and further out of the loop,” he wrote. “With this arms race in speed come grave risks,” including “a war that spirals out of control in mere seconds.”16

# Aff Answers

## AT: Russia War Good

### AT: Russia War Good---2AC

#### Even a small nuclear war causes extinction and destroys the ozone

Starr 14 [Steven Starr, the Senior Scientist for Physicians for Social Responsibility and Director of the Clinical Laboratory Science Program at the University of Missouri. Starr has published in the Bulletin of the Atomic Scientists and the Strategic Arms Reduction (STAR) website of the Moscow Institute of Physics and Technology, June 11, 2014, “There Can be No Winners in a Nuclear War”, Truth Out, [https://truthout.org/articles/there-can-be-no-winners-in-a-nuclear-war](https://truthout.org/articles/there-can-be-no-winners-in-a-nuclear-war/)]

Nuclear war has no winner. Beginning in 2006, several of the world’s leading climatologists (at Rutgers, UCLA, John Hopkins University, and the University of Colorado-Boulder) published a series of studies that evaluated the long-term environmental consequences of a nuclear war, including baseline scenarios fought with merely 1% of the explosive power in the US and/or Russian launch-ready nuclear arsenals. They concluded that the consequences of even a “small” nuclear war would include catastrophic disruptions of global climate and massive destruction of Earth’s protective ozone layer. These and more recent studies predict that global agriculture would be so negatively affected by such a war, a global famine would result, which would cause up to 2 billion people to starve to death. These peer-reviewed studies – which were analyzed by the best scientists in the world and found to be without error – also predict that a war fought with less than half of US or Russian strategic nuclear weapons would destroy the human race. In other words, a US-Russian nuclear war would create such extreme long-term damage to the global environment that it would leave the Earth uninhabitable for humans and most animal forms of life. A recent article in the Bulletin of the Atomic Scientists, “Self-assured destruction: The climate impacts of nuclear war,” begins by stating: “A nuclear war between Russia and the United States, even after the arsenal reductions planned under New START, could produce a nuclear winter. Hence, an attack by either side could be suicidal, resulting in self-assured destruction.” In 2009, I wrote “Catastrophic Climatic Consequences of Nuclear Conflicts” for the International Commission on Nuclear Non-proliferation and Disarmament. The article summarizes the findings of these studies. It explains that nuclear firestorms would produce millions of tons of smoke, which would rise above cloud level and form a global stratospheric smoke layer that would rapidly encircle the Earth. The smoke layer would remain for at least a decade, and it would act to destroy the protective ozone layer (vastly increasing the UV-B reaching Earth) as well as block warming sunlight, thus creating Ice Age weather conditions that would last 10 years or longer. Following a US-Russian nuclear war, temperatures in the central US and Eurasia would fall below freezing every day for one to three years; the intense cold would completely eliminate growing seasons for a decade or longer. No crops could be grown, leading to a famine that would kill most humans and large animal populations. Electromagnetic pulse from high-altitude nuclear detonations would destroy the integrated circuits in all modern electronic devices, including those in commercial nuclear power plants. Every nuclear reactor would almost instantly meltdown; every nuclear spent fuel pool (which contain many times more radioactivity than found in the reactors) would boil off, releasing vast amounts of long-lived radioactivity. The fallout would make most of the US and Europe uninhabitable. Of course, the survivors of the nuclear war would be starving to death anyway. Once nuclear weapons were introduced into a US-Russian conflict, there would be little chance that a nuclear holocaust could be avoided. Theories of “limited nuclear war” and “nuclear de-escalation” are unrealistic. In 2002 the Bush administration modified US strategic doctrine from a retaliatory role to permit preemptive nuclear attack; in 2010, the Obama administration made only incremental and miniscule changes to this doctrine, leaving it essentially unchanged. Furthermore, Counterforce doctrine – used by both the US and Russian military – emphasizes the need for preemptive strikes once nuclear war begins. Both sides would be under immense pressure to launch a preemptive nuclear first-strike once military hostilities had commenced, especially if nuclear weapons had already been used on the battlefield. Both the US and Russia each have 400 to 500 launch-ready ballistic missiles armed with a total of at least 1800 strategic nuclear warheads, which can be launched with only a few minutes warning. Both the US and Russian Presidents are accompanied 24/7 by military officers carrying a “nuclear briefcase,” which allows them to transmit the permission order to launch in a matter of seconds. Yet top political leaders and policymakers of both the US and Russia seem to be unaware that their launch-ready nuclear weapons represent a self-destruct mechanism for the human race. For example, in 2010, I was able to publicly question the chief negotiators of the New START treaty, Russian Ambassador Anatoly Antonov and (then) US Assistant Secretary of State Rose Gottemoeller, during their joint briefing at the UN (during the Non-Proliferation Treaty Review Conference). I asked them if they were familiar with the recent peer-reviewed studies that predicted the detonation of less than 1% of the explosive power contained in the operational and deployed US and Russian nuclear forces would cause catastrophic changes in the global climate, and that a nuclear war fought with their strategic nuclear weapons would kill most people on Earth. They both answered “no.” More recently, on April 20, 2014, I asked the same question and received the same answer from the US officials sent to brief representatives of the NGOS at the Non-Proliferation Treaty Preparatory Committee meeting at the UN. None of the US officials at the briefing were aware of the studies. Those present included top officials of the National Security Council. It is frightening that President Obama and his administration appear unaware that the world’s leading scientists have for years predicted that a nuclear war fought with the US and/or Russian strategic nuclear arsenal means the end of human history. Do they not know of the existential threat these arsenals pose to the human race . . . or do they choose to remain silent because this fact doesn’t fit into their official narratives? We hear only about terrorist threats that could destroy a city with an atomic bomb, while the threat of human extinction from nuclear war is never mentioned – even when the US and Russia are each running huge nuclear war games in preparation for a US-Russian war. Even more frightening is the fact that the neocons running US foreign policy believe that the US has “nuclear primacy” over Russia; that is, the US could successfully launch a nuclear sneak attack against Russian (and Chinese) nuclear forces and completely destroy them. This theory was articulated in 2006 in “The Rise of U.S. Nuclear Primacy,” which was published in Foreign Affairs by the Council on Foreign Relations. By concluding that the Russians and Chinese would be unable to retaliate, or if some small part of their forces remained, would not risk a second US attack by retaliating, the article invites nuclear war. Colonel Valery Yarynich (who was in charge of security of the Soviet/Russian nuclear command and control systems for 7 years) asked me to help him write a rebuttal, which was titled “Nuclear Primacy is a Fallacy.” Colonel Yarynich, who was on the Soviet General Staff and did war planning for the USSR, concluded that the “Primacy” article used faulty methodology and erroneous assumptions, thus invalidating its conclusions. My contribution lay in my knowledge of the recently published (in 2006) studies, which predicted even a “successful” nuclear first-strike, which destroyed 100% of the opposing side’s nuclear weapons, would cause the citizens of the side that “won” the nuclear war to perish from nuclear famine, just as would the rest of humanity.

#### Ozone independently causes extinction

**Greenpeace 95** – Environmental Organization (“Full of Holes: Montreal Protocol and the Continuing Destruction of the Ozone Layer -- A Greenpeace Report with contributions from Ozone Action, http://archive.greenpeace.org/ozone/holes/holebg.html)

When chemists Sherwood Rowland and Mario Molina first postulated a link between chlorofluorocarbons and ozone layer depletion in 1974, the news was greeted with scepticism, but taken seriously nonetheless. The vast majority of credible scientists have since confirmed this hypothesis. The ozone layer around the Earth shields us all from harmful ultraviolet radiation from the sun. Without the ozone layer, life on earth would not exist. Exposure to increased levels of ultraviolet radiation can cause cataracts, skin cancer, and immune system suppression in humans as well as innumerable effects on other living systems. This is why Rowland's and Molina's theory was taken so seriously, so quickly - the stakes are literally the continuation of life on earth.

#### Russia goes first

Arbatov et al. 17 [Dr. Alexey Arbatov, PhD, full member of the Russian Academy of Sciences, Head of the Center for International Security at the Institute of World Economy and International Relations, and scholar in residence at the Carnegie Moscow Center; Maj.Gen. Vladimir Dvorkin (retired), chief researcher at the Center for International Security at the Institute of Primakov National Research Institute of World Economy and International Relations, former director of the Russian Defense Ministry’s Fourth Central Research Institute; and Dr. Petr Topychkanov, Senior Researcher in the SIPRI Nuclear Disarmament, Arms Control and Non-proliferation Programme, former Senior Researcher at the Center for International Security at the Primakov National Research Institute of World Economy and International Relations of the Russian Academy of Sciences; “Entanglement as a New Security Threat: A Russian Perspective,” 11-8-2017, <https://carnegie.ru/2017/11/08/entanglement-as-new-security-threat-russian-perspective-pub-73163>]

THE EFFECTIVENESS OF NON-NUCLEAR DISARMING STRIKES This threat of a non-nuclear disarming strike is a central topic of discussion among Russian experts and government officials. The key bone of contention is whether the United States might attempt a massive conventional counterforce attack against Russia (which would inevitably be less effective than a nuclear counterforce strike), assuming that Moscow would be reluctant to respond with nuclear weapons given the certainty of follow-on nuclear retaliation by the United States. A particular issue of concern is that Russia’s emphasis on the threat of a conventional disarming strike could be perceived in the United States as evidence of Moscow’s unwillingness to use nuclear arms to counter such a strike, prompting the United States to start precisely this kind of conventional air campaign to attain escalation dominance in a local or regional conflict. In reality, however, and in contrast to such strategic calculations, Moscow might retaliate early with a limited strategic nuclear strike in the event that the United States launched a conventional counterforce operation against Russia’s nuclear forces (in accordance with Russia’s launch-under-attack doctrine). Alternatively, Moscow might even preempt the United States with selective strategic nuclear strikes to thwart U.S. naval and air forces that were engaged in a conventional conflict and perceived as conducting a conventional counterforce offensive by launching attacks against airfields, naval bases, and their C3I facilities. In the latter case, Moscow would count on the United States’ responding selectively with “tailored strategic options” even after nuclear explosions had occurred on its territory. In reality, the U.S. response might be a large-scale nuclear attack against Russia, provoking a massive nuclear exchange. In any case, the more concerned that Moscow is about the survivability of its nuclear forces, the more likely escalation becomes. Targets for a non-nuclear disarming strike might include super-hardened command centers at various echelons, ICBM silos, light shelters for land-based mobile missiles, exposed mobile ICBM launchers in the field, ballistic missile submarines at their bases, heavy bombers at main and reserve airfields, communication sites on land, early-warning radars, command centers for the missile early-warning system, and storage depots for nuclear weapons. The vulnerability of these targets depends on how well they are defended and concealed, and on the effectiveness of countermeasures against incoming weapons. Early-warning radars, light shelters for mobile ICBM launchers, missile submarines at their bases, and heavy bombers at airfields, as well as C3I centers and sites that are not deeply buried, can be incapacitated relatively easily if the attacking weapons have sufficient range and good targeting. In the event of a local or regional conventional conflict between Russia and NATO in Eastern Europe or the Arctic, airstrikes and cruise missile attacks against these sites would most likely cause rapid escalation to a nuclear war. In particular, early U.S. strikes against such targets might not be deliberate since Russian strategic submarines and bombers are kept at the same bases as general-purpose naval vessels and aircraft, and strikes designed to target the latter might inadvertently destroy the former. Unlike the logic that may be behind Chinese policies, the co-location of nuclear and general-purpose forces in the USSR and now in Russia was and is prompted by economic and administrative considerations, not by the strategic goal of trying to deter U.S. non-nuclear strikes against Russian general-purpose forces through the threat of nuclear escalation. The interception of heavy and medium dual-use bombers in flight during a conventional conflict also makes entanglement virtually inevitable. These bombers might take part in conventional missions, but might also be sent out on patrol with nuclear weapons to decrease their vulnerability in case the conflict escalates. If these aircraft were destroyed while carrying nuclear weapons, there would be a real risk of escalation. A similar risk could arise from conventional threats to Russian nuclear-armed ballistic and cruise missile submarines in the Arctic, North Atlantic, and Pacific Oceans.

#### We won’t counterforce, it would fail and war isn’t inevitable

Miller and Fontaine 17 – James M Miller Jr. is President of Adaptive Strategies, LLC and a Senior Fellow at Harvard Kennedy School’s Belfer Center. Richard Fontaine is the President of the Center for a New American Security (CNAS). He served as a Senior Advisor and Senior Fellow at CNAS from 2009 to 2012 and previously as foreign policy advisor to Senator John McCain for more than five years. He also has worked at the State Department, the National Security Council, and on the staff of the Senate Foreign Relations Committee. (“A New Era in U.S.-Russian Strategic Stability” Harvard Kennedy School Belfar Center for Science and International Affairs, Center for a New American Security September 2017 <https://www.cnas.org/publications/reports/a-new-era-in-u-s-russian-strategic-stability>)

Any conflict, indeed any severe crisis, between the United States and Russia invariably would unfold under the “nuclear shadow” cast by the large nuclear arsenals of the two sides. Because of well-grounded concerns on both sides that a major military conflict could escalate to implicate the nuclear forces of the two sides, for generations policymakers have sought to promote “strategic stability” between the two nations.62 For the last 60 years, the stability of the U.S.-Russian (previously U.S.-Soviet) nuclear balance has been based on each side’s confidence that it could absorb even an all-out nuclear first strike by the other side and then unleash a devastating nuclear second strike. As Albert Wohlstetter wrote in “The Delicate Balance of Terror” in 1958, “To deter an attack means being able to strike back in spite of it. It means, in other words, a capability to strike second.”63 Over recent decades, both sides have undertaken massive investments to ensure that they sustained a secure second-strike capability, including deployments of highly survivable delivery systems – in particular nuclear-powered ballistic missile submarines (SSBNs) for the United States, and mobile missiles for Russia – and resilient nuclear command and control. Over the decades of the Cold War, two main alternatives to this balance of terror, or Mutual Assured Destruction (MAD), were proposed: a shift to defense dominance, as articulated in President Ronald Reagan’s March 23, 1983, Strategic Defense Initiative speech, and the mutual and global abolition of nuclear weapons, as also articulated by President Reagan at the 1986 Reykjavik Summit with Soviet President Mikhail Gorbachev. Because of the massive destructive potential of nuclear weapons, meaning that even limited penetration of an adversary’s defenses renders the value of such an approach effectively nugatory, and the extreme challenges of near-perfect missile and air defense against a capable and adaptive adversary, defense dominance has not been and will not be technically possible for the foreseeable future. Neither will the elimination of all nuclear weapons be possible for the foreseeable future; there is no sign of the global political will to impose (or accept) the elimination of all nuclear arms and essentially unlimited inspections in all nuclear-capable nations; to the contrary, the nuclear arsenals of a number of actors (China, India, Pakistan, and North Korea) are growing. Whatever one’s wishes, for the foreseeable future nuclear weapons show no prospect of meeting either part of President Reagan’s goal to make them “impotent and obsolete.” Thus, for the indefinite future, the United States and Russia must accept MAD or mutual vulnerability as a basis for the stability of their strategic nuclear deterrence relationship. This does not mean that stability is guaranteed – far from it. Nuclear deployments – and perhaps even more so emerging cyber, counter-space, missile defense, and non-nuclear strike systems – have the potential to undermine strategic stability. As these military capabilities are developed further, each side is likely to have growing fears that the other side might use these capabilities (with or without also using nuclear weapons) in a first strike to attempt to negate its nuclear second-strike capabilities. U.S.-Russian Strategic Stability in Today’s MAD World Assessing strategic stability today requires considering both the balance of strategic nuclear weapons and the balance of additional non-nuclear capabilities that the United States and Russia could bring to bear in a major war. Today, the United States deploys a large percentage of its strategic warheads on highly survivable strategic missile submarines; at all times, several of these vessels are at sea and ready to receive orders to launch a devastating strike that Russia would be powerless to stop. The United States also possesses 400 fixed-silo intercontinental ballistic missiles (ICBMs) that would be extremely difficult for Russian missiles to comprehensively destroy, as well as a force of 60 dual-capable strategic bombers that could be dispersed and placed on a more survivable alert status if needed. The United States also maintains dual-capable fighter-bombers capable of delivering nuclear gravity bombs. At the same time, the United States continues to maintain capabilities to ensure the requisite command and control and early-warning apparatus to provide warning of any attack and enable the National Command Authority to communicate launch orders to the force. Accordingly, there are no serious concerns about the U.S. ability today to launch a devastating nuclear retaliatory strike against Russia (or any other state), even in the aftermath of an all-out attack. Russia also retains a triad of strategic delivery systems capable of delivering many hundreds of second-strike warheads against the United States. Russia deploys ICBMs both in fixed-silo and (when dispersed) highly survivable mobile configurations, strategic missile submarines, and bombers capable of delivering air-launched cruise missiles. In addition, and unlike the United States, Russia has nuclear-tipped sea-launched cruise missiles that it could launch from its otherwise conventionally oriented attack submarines. Like the United States, Moscow also possesses a capable nuclear command and control system as well as some capacity for early warning of an adversary attack.65 Under the New START Treaty, which entered into force for a ten-year period in February 2011, the United States and Russia agreed to three main limits: no more than 700 deployed strategic delivery systems (ICBMs, SLBMs, and nuclear-capable bombers); no more than 800 deployed plus non-deployed strategic delivery systems; and no more than 1,550 accountable deployed strategic weapons. Under the treaty, each nuclear-capable bomber counts as only one warhead irrespective of the number of gravity bombs and airlaunched cruise missiles it may carry. In addition, non-deployed nuclear weapons are not limited, and each side has the ability to “upload” at least hundreds of additional warheads on ICBMs and SLBMs should it decide to withdraw from the treaty. The table below shows a recent estimate of the numbers of deployed and non-deployed U.S. and Russian delivery systems and warheads. In today’s strategically stable situation, neither side can realistically see an opportunity to limit damage to itself to a sufficiently meaningful degree by conducting a first strike against the other side’s strategic nuclear forces. Even if it chose to “ride out” an attack and not launch its ICBMs, the United States would have many hundreds of surviving SLBM weapons (plus weapons on any alert bombers) with which to respond. Similarly, even if it chose to “ride out” an attack and not launch its silo-based ICBMs, Russia would have several hundred warheads on mobile ICBMs (plus weapons on any bombers). And today, neither side has a reasonable basis for fearing that it is highly vulnerable to a disarming strike, and so neither side should feel “use or lose” pressures. In a strategically stable situation such as today’s, one side or the other still could choose to use nuclear weapons to attempt to gain military advantage and/or to send a political signal. But neither side should believe it has an opportunity to disarm the other side, and thus neither side should feel impelled to launch a nuclear attack because of fears of being so disarmed. Thus, bearing in mind that a preemptive disarming strike would need to be nearly perfect to meaningfully limit damage to the attacker, the U.S.-Russian strategic balance today is quite stable.66 Both sides have the power to wreak unprecedented destruction on the other through the employment of nuclear weapons even in the face of a determined effort by the other to preempt and/or defend against it. Absent a fundamental transformation in the military-technological balance between the two states, enabled by the development and integration of novel military capabilities, this high degree of strategic stability is set to persist for the foreseeable future. Such a fundamental transformation of military capabilities, however, may already be under way

#### Counter-forcing fails---Countermeasures

Glaser and Fetter 17 [Charles L. Glaser is a professor in the Elliott School of International Affairs and the Department of Political Science at George Washington University, he directs the Elliott School’s Institute for Security and Conflict Studies, and Steve Fetter is a professor in the School of Public Policy and Associate Provost for Academic Affairs at the University of Maryland, this research was supported by a grant from the Carnegie Corporation of New York, Summer 2017, “The Limits of Damage Limitation.” <https://muse-jhu-edu.proxy.lib.umich.edu/article/667399>]

Countermeasures will be available, however. Green and Long note that although jamming is a compelling countermeasure, jammers can be targeted or used to cue other sensors. Jammers are, however, cheap and easily proliferated; China could readily afford to deploy hundreds of jammers for every mobile missile, and the mobile missiles could be equipped with an identical jammer, presenting the United States with tens of thousands of potential targets. And rather than trying to make decoys appear more realistic, China could make its missiles and transporters look more like decoys by covering them with materials that will present similar signatures to overhead satellites. Even if continuous and robust tracking becomes possible, mobile missiles can be made much more survivable by deploying them in areas where they can move in any direction, and by giving them the ability to travel at high speeds and to survive the blast from a nearby explosion. The Chinese portion of the Gobi Desert covers an area larger than Texas and is mostly bare rock, with large flat areas in which a vehicle can travel dozens of kilometers in any direction. It should be possible to build a transporter erector launcher (TEL) that could travel up to 65 kilometers per hour (40 miles per hour) over such terrain. If, in the most optimistic case for damage limitation, the location of such a TEL could be determined and U.S. ballistic missiles could be retargeted instantaneously, a single TEL could be anywhere within a 3,300-square-kilometer area by the time the attacking warheads arrive thirty minutes later. For comparison, the entire U.S. ballistic missile force under the New Strategic Arms Limitation Treaty— 400 intercontinental ballistic missiles and 1,090 submarine-launched ballistic missile warheads—would have an effective lethal area of 25,000 to 60,000 square kilometers [End Page 205] against TELs hardened to 5 to 10 pounds per square inch.8 In this best-case analysis for damage limitation, the barrage attack would be able to destroy only 8 to 20 TELs. But instantaneous retargeting is not possible, and the United States would not launch its entire missile force against Chinese mobile missiles. Using more plausible assumptions leaves the United States able to destroy a still smaller number of Chinese mobile missiles. To achieve a more effective capability against Chinese mobile missiles, the United States would require continuous tracking of TELs and retargeting of warheads while the missiles are in flight. This would require survivable and robust surveillance and satellite communications systems, together with post-boost vehicles that can receive updated target information (or, better still, warheads that receive such information and maneuver to the new target). In-flight retargeting opens up the possibility that adversaries could employ electronic countermeasures, jamming the transmission or perhaps even diverting the warhead to a harmless area or a U.S. ally. Concern about the possibility of such countermeasures has prevented the United States from equipping its intercontinental ballistic missiles and submarine-launched ballistic missiles to receive information after launch (e.g., for improved navigation or command-destruct in the event of an errant launch). Green and Long raise the possibility that unattended ground sensors could be used to track TEL movements. Setting aside the difficulties associated with clandestine emplacement of such devices, they would work well only if TELs are constrained to road networks, and even then they could be defeated or spoofed with noise-makers. (The Viet Cong played recordings of truck traffic to spoof U.S. air-dropped acoustic detectors.) Green and Long cast doubt on China’s ability to launch from unprepared sites, because missile crews could not rely on satellite navigation for geolocation. This is not a difficult problem to solve. First, one could pre-survey thousands of potential launch sites in advance at relatively low cost. Second, one could establish terrestrial navigation systems, such as eLoran or ground-based global positioning satellite systems, to provide robust geolocation in mobile missile deployment areas. Third, one could rely on inertial navigation systems, which would be perfectly adequate for periods of a few hours, bearing in mind that high accuracy is not needed for attacks against cities. Finally, Green and Long suggest that stealthy penetrating unmanned aerial vehicles might be used to find and destroy mobile missiles. As they note, classification makes it difficult to fully evaluate such systems, but there are reasons to believe that this would prove difficult to implement. First, stealth technology reduces the range at which aircraft can be detected by radar and other sensors, but does not render them invisible. There are countermeasures to stealth, such as the use of low-frequency active electronically scanned array radars and passive electromagnetic and infrared sensors to cue high-frequency radars. Second, surveillance requires operation at high altitude and modest speeds, to maximize area coverage and endurance, while penetration of the adversary’s airspace calls for low altitudes and high speeds. One could have swarms of high- and low-fliers that communicate with each other, but communication opens up [End Page 206] the possibility of electronic countermeasures. Third, aircraft would have flight times of many hours to launch sites deep inside China, even if launched from the territory of regional allies or ships near the coastline. The detection of even one such aircraft would give ample time for countermeasures, such as the movement of a missile into one of several shelters. We are aware of no technological trends that make it likely that the United States will have an enduring advantage in maintaining a damage-limitation capability against China**.**9 But if technological trends do provide such an advantage, China would have the option of establishing an ability to launch on warning of a U.S. attack. The small satellite revolution will make possible robust and low-cost warning systems, able to detect missile launches anywhere on Earth and provide continuous tracking information and aimpoint prediction. This would give China warning of a U.S. counterforce attack and allow China to launch its forces under attack. There would be no easy U.S. countermeasure to such a capability. Similarly, China could pre-delegate launch authority to compensate for any shortcomings in the survivability of its command and communication capabilities. Both measures would increase risks of accidental, inadvertent, and unauthorized use of nuclear weapons, but China could reasonably judge that these risks were worth running to defeat U.S. damage-limitation programs.

#### First strike breaks nuclear taboo---extinction

Gibbons **and** Lieber 19 [Rebecca Davis Gibbons is a Postdoctoral Research Fellow at the Belfer Center at the Harvard Kennedy School, is currently working on a book on the politics of the nuclear nonproliferation regime, Keir Lieber is Director of the Security Studies Program and Associate Professor in the Edmund A. Walsh School of Foreign Service at Georgetown University, holds a joint appointment in the Department of Government, November 9, 2019, How durable is the nuclear weapons taboo?” <https://www-tandfonline-com.proxy.lib.umich.edu/doi/pdf/10.1080/01402390.2018.1529568?needAccess=true>]

Scholars often hold aloft the nuclear taboo as evidence that norms significantly constrain state behavior, even in the realm of national security. The nuclear taboo is also sometimes invoked in policy debates; for example, to suggest that the U.S. and other countries’ arsenals of nuclear weapons can be drastically reduced and eventually eliminated. But the conclusions that analysts and policymakers draw from the nuclear taboo literature exceed what the evidence warrants. There are good reasons for analysts to question the strength and prevalence of an international norm against nuclear use, but here we highlight several reasons why the durability of a moral-based nuclear taboo is dubious. First, the comparable case of strategic bombing does not support hypotheses about how and when norm-violation should strengthen morally-based taboos. Second, recent survey and social science research challenges the durability of a moral taboo. For example, surveys indicate that a majority of Americans, who are supposed to have internalized the nuclear taboo, would be willing to use nuclear weapons against terrorist adversaries or Iran. Furthermore, experiments in psychology tell us that leaders can encourage their population to make tragic trade-offs through their framing of choices. The strategic bombing case illustrates one such trade-off: General Eisenhower siding with strategic bombing proponents to facilitate a quicker end to World War II. Opposition to the use of nuclear weapons in the abstract does not guarantee opposition in times of crisis. Finally, precedent logics – not moral logics – appear to more commonly underlie taboos in warfare. Once the bargain against bombing civilians broke down, there was little moral compunction leading countries to stop pursuing this strategy. Furthermore, the survey literature referenced above suggests that respondents’ reluctance to have the United States employ nuclear weapons stems from a concern about precedence, not moral authority. If the nuclear taboo is based upon concern for precedent and not moral opprobrium, then resuscitating the taboo after an incident of nuclear use may be unrealistic. These findings point to a number of policy implications. Most importantly, policy-makers should be aware of the challenges to the norm against nuclear use after a future violation. Both the moral logic and precedent logic cause reason to be skeptical that the norm would remain durable. As a result, preventing nuclear use in the first place is paramount. The United States should continue to seek to strengthen the global nuclear nonproliferation regime, a major challenge at a time when NPT member states are so divided over nuclear disarmament.86 U.S. leaders should refrain from making casual nuclear threats against adversaries and should encourage other leaders to follow suit. Moreover, in its declaratory policy, the United States should restrict the intended use of its nuclear weapons to deterring nuclear attacks. If the United States or its assets were attacked with a nuclear weapon, leaders would have to strongly consider whether responding in kind would do more harm than good. Fortunately, U.S. conventional superiority means that the U.S. military would have many non-nuclear means to respond. Finally, because we find that the precedent logic to be more compelling in explaining non-use, the United States should consider ways in which it can affect whether future nuclear use is perceived as successful and how it can lead the international community in bringing about a strong sanctioning response against those responsible for such an attack. If nuclear use is perceived as unsuccessful or the attacker is meaningfully punished, the precedent is more likely to be re-established.

### AT: AI---2AC

#### Russia AI weak

Dr. Christopher Whyte 22, assistant professor of homeland security and emergency preparedness at Virginia Commonwealth University, “Russia’s AI setbacks will likely heighten its cyber aggression,” <https://www.csoonline.com/article/3656957/russias-ai-setbacks-will-likely-heighten-its-cyber-aggression.html/micahw>

In 2017, Vladimir Putin famously stated that “[a]rtificial intelligence is the future not only of Russia but of all of mankind” and that “[w]hoever becomes the leader in this sphere will become the ruler of the world.” Indeed, AI has come to sit at the heart of landmark initiatives established by the world’s leading powers to transform the conflicts, economies and societies of the future.

Mirroring efforts in Europe, a National Security Commission on Artificial Intelligence in the United States has encouraged immense increases in non-defense AI spending, widespread talent development and recruitment programming, and revamped acquisition vehicles to make harnessing new AI potential easier. India has become the leading adopter of AI tools among emerging economies. China has established unprecedented investment regimes tied to programs like the Belt and Road Initiative – and defined by the 2017 New Generation Artificial Intelligence Development Plan – designed to leapfrog perceived American technological superiorities.

Despite Putin’s statements, Russia’s AI efforts have lagged behind most initiatives in other countries. In 2014, barely two years after a breakthrough innovation of deep neural networks by a multinational group of researchers energized AI development, Russia’s buildout of new machine learning applications and other AI tools was already slowing significantly. Collaborations with cutting-edge projects in the West, China, India and elsewhere began to drop away following Putin’s annexation of Crimea and decision to embroil Eastern Ukraine in ongoing conflict.

State-sponsored companies and military-intelligence institutions in the Russian Federation have consistently been a leading source of novel AI technologies aimed at bolstering national security and strengthening mechanisms of population control. However, a slow leak of human capital and a complicated relationship with parts of the global economy that dominate critical high technology resources, such as graphics processing units (GPUs), have become a substantial obstacle for the country’s AI ambitions. Even if Moscow matched China’s or the United States’ levels of domestic AI investment, its fundamentals of innovation for the field simply haven’t been concrete for some time.

One major blow to Moscow’s AI ambitions is the dramatic acceleration of the brain drain that has plagued Russian high technology and scientific communities for years. Enticing researchers out of private industry and academia is perennially difficult for governments, but Russia has been even less capable in this regard than most, likely due to the unappealing culture and benefits of Putin’s military and paramilitary communities. Now, up to 70,000 tech workers that were otherwise minimal flight risks have fled the country. Many have ended up in former Soviet states and South Asia, and no small number have left positions tied to the Russian state’s focus on building out facial recognition, autonomous vehicles and surveillance capabilities.

Sanctions worsen the impact of this brain drain by cutting across the research and business relationships that Moscow has heavily supported in recent years. In the face of shaky fundamentals for domestic AI development, Putin’s government has emphasized collaborations across industry and academia with India and China. Publication and patent activity seem to suggest that this approach may have been paying off for Russia.

Despite producing a fraction of AI-linked patents (50 or ~5%) last year relative to the United States and China, Sino-Russian and Russo-Indian research teams collaborated on hundreds of research papers in the same period. Now, with such collaborations subject to international sanctions on Russian industry and citizens, this approach seems destined to flop. If anything, this dynamic virtually ensures the Russia will become an even more minor actor in economic relationships with Asian countries as the absence of American firms and the loss of any ability to lead collaborations removes the leverage that Russian industry might previously have had.

#### Russia’s not even close to the US or China

Spencer 18 [Michael K. Spencer – Content consultant for #blockchain startups. LinkedIn Futurist and Medium Tech journalist. Cites Oxford University study and MIT Technology Review, “China is Projected to Catch and Pass the U.S. in AI” Medium, March 21, 2018, <https://medium.com/@Michael_Spencer/china-is-projected-to-catch-and-pass-the-u-s-in-ai-74ae1a9b24d>]

Here’s what we know. The US has likely the foremost academics and talent in artificial intelligence who are attracted either by academia, or by Tech companies such as Amazon, Google, Facebook and others. Washington has been slow to act on calls for regulation in AI. Washington Finally Forms AI-Regulation Task-Force The Center for a New American Security (CNAS), one of America’s top defense and foreign policy think tanks, announced the creation of a Task Force on Artificial Intelligence and National Security, as part of the organization’s Artificial Intelligence and Global Security Initiative. It will be led by Steve Moore, dean of Carnegie Mellon University’s School of Computer Science, and Robert O. Work, who was deputy defense secretary from 2014–2017 and formerly CEO of CNAS. China is Prioritizing Artificial Intelligence to become a Tech Superpower by 2025 China, intent on dominating artificial intelligence in a race with the United States, is said to be on a steep ascent toward at least a tie. But a number of AI experts say that while China can come close, it will be hard to catch up completely, according to Axios. But is this actually the case? A recent study from a team of economists at the University of Toronto has concluded that China is steadily gaining on the United States in the field of artificial intelligence. The 2017 Association for the Advancement of Artificial Intelligence (AAAI), a worldwide conference that presents the achievements of the world’s AI leaders, indicated that 23 percent of the authors of academic papers were based from China, according to the AI and International Trade study. This was a massive leap in terms of research output, considering that Chinese AI researchers only contributed 10 percent of the research output in the 2012 AAAI. China’s research output will likely be close to being on par with the United States in 2018, and will overtake them as early as 2020. China will throw more money, resources, and has more consumer data to tackle the problem of developing the next-gen of Artificial Intelligence. China has 3x as many internet users as the United States has total population. This means that Big Data and less privacy protection favors Chinese Tech companies over their western counterparts. Chinese Tech companies such as Tencent and Alibaba have greater access to consumer data than do companies such as Google and Facebook, that do not own either E-commerce markets (as Alibaba) or apps as ubiquitous and multi-functional as (Tencent’s) WeChat. More Funding for AI Research According to popular technology analysts CB Insights, they report that China has overtaken the US in the funding of AI startups. China accounted for 48 percent of the world’s total AI startup funding in 2017, compared to 38 percent for the US. This corroborates data from the Association for the Advancement of Artificial Intelligence (AAAI). The next generation of AI talent educated in the States may be tempted to join Chinese Tech companies instead of Western Tech Companies, as in the 2020s may be able to offer better compensation and more bleeding edge working environments that will be building more impactful products. International talent may be less likely to want to move to the U.S. with the current policies of the administration and prefer countries such as Canada, Australia, or even the U.K. Many of the top Students now in U.S. colleges are in fact Chinese international students. Here is one of the cruxes of the problem, the U.S. is itself the education center for the next generation. These talented Chinese Students won’t all want to work for the sinking ship that is Facebook, or the internally divided company that is Google. Could it be, could it possibly be that some of them will prefer the career track that is Alibaba, Tencent, Didi, Baidu, Huawei, Toutiao or any other number of ascending China companies and startup unicorns? Common Sense is the Simplest Answer to Futurist’s Questions It’s actually ridiculous to suppose that the next economic superpower won’t be the leader in technology and artificial intelligence. Even the former experts of U.S. Tech giants are coming to the same conclusion. Recently former Google CEO Eric Schmidt told his audience that it won’t be long before China overtakes the United States in the development of advanced artificial intelligence (AI), according to a report by The Verge. Knowing what we know about the impact of Chinese cities on innovation, we have to assume that some of humanity’s greatest breakthroughs in exponential technologies and the future of machine learning and AI will come out of China, if not the majority. This is because it’s a numbers game and funding and the government push of Beijing, is on China’s side. A report jointly published by New York-based research consultancy Eurasia Group and Beijing-based VC firm Sinovation Ventures on Dec. 6 outlined how China has been making rapid advances in AI over the past few years. Sure Google is making terrific advances, yes Amazon is prioritizing Alexa-like- crazy since we now know the Voice-AI interface will be a multi-billion dollar industry and possibly the future of the human-AI computing interface. But for China, its tech dynasty and state-supported technology community is literally just getting started. It doesn’t have all the VC bureaucracy and Washington relationship Silicon Valley has to deal with on a constant basis. China is ahead when it comes to the dollar value of AI startup funding, which CB Insights says demonstrates the country is “aggressively executing a thoroughly-designed vision for AI.” But for the top 5% of researchers, certainly the U.S. is still in the driver’s seat, for possibly a few more years. Typically in academica, the discipline is driven ahead and pioneered by the top few percent of the greatest minds in a given niche field. China has perhaps, about another decade until it’s able to recruit such high-level talent on a consistent basis. Could China overtake the the US in AI development? It’s no longer a question of if, but when. The answer is we don’t know. In reviewing some of the literature, where I of course am by no means an expert, I would think by the late 2020s and possibly much earlier, China will be contributing more to AI development than the United States. That’s not good or bad, or a politically motivated opinion, that’s just reality. As this occurs, Chinese Tech companies will begin to overtake western ones. Picture this, the market cap of the likes of Apple and Google, overtaken by younger and more innovative Chinese companies? It’s hard to imagine, right. Or is it? [Graph Ommitted] It’s almost inevitable now that Tencent and Alibaba could catch the likes of Facebook and Microsoft. It may take a bit longer for them to catch the likes of Alphabet and Amazon though. However, that’s what the data is beginning to show when we make simulations of the likely course of events in the future of technology, innovation and machine intelligence. [Graph Ommitted] China’s proportion of global AI startup funding as a percentage of dollar value. Image: CB Insights We’ve known for some time that compared to the incredible pace of patents by the likes of Amazon, the likes of Huawei are catching up. Comparing products, it does not take a genius to figure out that WeChat is more addictive and useful than Facebook’s flagship app. It’s difficult for Chinese smartphone makers to compete with the profit margins of Apple, but they have and are starting to take marketshare away from Apple, that has been the cream of the crop for over a decade. China has the Will to create a Chinese Tech Dynasty We know in terms of investment, Softbank, Tencent and Alibaba are doing things that will change the technological landscape for decades. Yet as impressive as that sounds (Softank is Japanese), it’s the incredible unity of the political will that makes this so much of a certainty. China has previously laid out plans to become the world leader in AI by 2030, as outlined in a government policy released in July of 2017. With China’s leader now destined to stay on past 2023, the sky is the limit for a Chinese driven era of progress. In the scope of civilization, it doesn’t matter who owns the keys to the driver’s seat of technological progress and artificial intelligence. At the end of the day, it benefits all global citizens, consumers and users. We may criticise how American apps and an American lead internet have made us into app addicts, but the same thing has occurred everywhere. Who's to say that China as a leader in tech and AI might not actually be even more responsible and aware of that responsibility than Silicon Valley has, which has largely failed us. It doesn’t really matter if it’s China or SpaceX or Blue Origin or somebody else that brings us to Mars. But to fulfill the dream of Stephen Hawking, Elon Musk and thousands of others, it must happen soon for the human species to have a higher probability of long-term survival. The Entirely New Models of AI Development Will Likely Come out of China It’s indeed plausible that as some have suggested, China has already overtaken the U.S. when it comes to AI research. Yet the Holy Grail of artificial intelligence and the convergence of quantum computing and new ways of thinking about possibly deep learning or another system of AI development means the essential breakthroughs that will occur, will probably take place in China and will thus be in a sense, owned by China for a certain period. This may give them a certain economic benefit and a kind of technological advantage. New ways of thinking about machine learning and how to help smart machines “learn how to learn” will come from places and companies and smart cities that are themselves experiencing their own mini Golden Ages. We know Chinese centers circa 2025 will be experiencing such an atmosphere. Thus, logically we have to admit that they have the rational best shot at achieving AI-breakthroughs that may never be possible in the U.S. again, at least not in our lifetimes. This is because apart from all other things, the best typically want to work with the best. The United States, on the other hand, seems to be experiencing a steady decline in its artificial intelligence initiatives. To return back to the AI conference, While 34 percent of the academic papers presented in the 2017 AAAI were still American, the number shows a significant decrease from the output of the country’s researchers back in 2012, when studies from the United States represented 41 percent of the academic papers in the conference. That’s pretty empirical evidence that relatively, China is ascending where America is in decline. As a futurist, it’s statistics like these that change how I view the role of China not just economically and as a leader in the smart grid, but in how smart machines scale to become part of our lives in smart cities all over the globe. I’m Canadian, I personally don’t care where innovation takes place, I’m just pointing to available facts. According to Futurism, the United States’ current levels of R&D spending on AI are one-half to one-quarter of the levels that would be best for economic growth. China on the other hand, have made becoming a leader in AI, one of the state’s primary goals to illustrate the advent of New China. This is where the facts become scary. China’s one-party rule affords them an incredible ability to “get shit done.” I don’t suspect developing AI will be a major issue for them, as having a higher population here becomes an essential advantage. More collaboration and a bigger slices of funding and Big Data, will win this war. The wheels of Chinese supremacy in AI have been set in motion. [Graphj Ommitted] Data from the NSTC’s AI R&D Plan. Credits: Office of Science and Technology Policy/The White House I don’t know if Deep learning is the answer to the next-gen of AI, and I suspect that it is not. However, once the domain of Google, that’s no longer at all the case. We once thought Waymo would arrive at self-driving cars years if not months ahead of “everybody else.” Now we find heading further into 2018, there are dozens of competitors who are likely very near to the same level of advancement, some of those likely in China. A study published by CB Insights on the upcoming AI trends for 2018 revealed that, for the first time, investments destined for China surpassed those for the US in this particular technology. China attracted almost half of all investments, compared to 38% for the US. So when does China’s big-push to AI catch up in products, software integration and real-world applications? How quickly does the R&D cycle manifest superiority on the field? The problem here is sociological, China is a mandarin based nation, and English is the global language. American companies have greater penetration, think of Amazon entering and dominating India in just a matter of years. Yet starting in 2017, China has become much more globally minded South and East Asia rapidly and making key investments. While American bravado charms and champions by culture and promises of altruism like Facebook, China buys up your land, ports, water and key assets positioning itself as the future in a very different manner. If America leads by perusassion, China leads by action. China’s superiority in AI will therefore likely manifest in unexpected ways, in convenience that could even rival the likes of Apple, Google and Amazon. China leads in things like the sharing-economy, where bike-sharing startups Ofo and Mobike, microcosms of the rivalries between Tencent and Alibaba, are scaling globally fast. You will know China’s superiority in Tech when the following events occur. When Huawei has a larger global market share than Apple. When Alibaba has a larger market cap than Amazon. When Tencent’s profits overtake Facebook. In 2018 you might think these events could never, and never will happen. But what if I told you that for a brief time, one of them already did occur. [Graph Ommitted] Here I am just illustrating how the Tech Dynasty of China is rising, but it’s not a dynasty yet. As a Futurist, I believe the start-point for that even is circa 2022. American original content streaming, digital advertising and AI is likely to consolidate into two or three winners (and I don’t believe Apple or Netflix will be among them). By the mid 2020s, it will likely just be Amazon and Alphabet left standing. Facebook has a digital ads giant, may not have such a bright future. Even as big a monopoly as Amazon is destined to become, as many jobs as it will create for Americans, it’s literally nothing compared to the Chinese Tech Dynasty that’s coming in the form of Tencent, Alibaba, Didi, Huawei, Xiaomi, Baidu and so many others. Admittedly, this is hard for many Americans and Europeans to get their head around. For Indians and South-East Asians it’s less of a stretch of the imagination. Each year approaching 2022, there will be increasing evidence that this is taking place. Chinese researchers’ contributions to the best 100 AI journals/conferences rose as a percent of total papers from 23.2% in 2006 to 42.8% in 2015 and as a percent of cited papers from 25.5% to 55.8%. There’s reason to believe post 2017, the pace of this data-point will now accelerate. In this great transition we won’t be able to think of a China-US “duopoly” for every long, since China will so far outpace the United States in AI-research, as to distance itself as Amazon has distanced itself from Microsoft, as Cortana is to Alexa. One of the key indicators is also in terms of investments. At home we can witness Silicon VAlley has entered a period of stagnation, where Chinese 1st tier cities have entered another a period of incredible growth. Massive investment in R&D including state-sponsored funds means Tencent and Alibaba are also building the future of Chinese with massive smarts. Just looking at Tencent’s investments in 2017, you get an idea of the scale at which this is occuring. Looking at Alibaba’s biggest investments in 2017, they are no less impressive. Tech in Asia It could be argued the Chinese duopoly is giving back more to innovation and startups than is the American Ad duopoly of Google and Facebook. As Apple is nearly and will soon be worth $1 Trillion dollars, what has it done for innovation or American job recently? Here is where Capitalism as we know it, is failing innovation. In Asia, they have not hit the same bottleneck, nor are they likely to anytime soon. China has an Army of Little Amazons Working Night and Day The Chinese tech custom of working 9/9/6 (from 9am to 9pm, six days a week) is a symbol of the Chinese work-ethic. What does a 72-hour week amount to in terms of actual innovation? The world is about to find out. Beijing published a national development plan for AI, aiming to increase China’s economic clout by more than 150 billion yuan (22.15 billion dollars) by 2020 and to 400 billion yuan (59.07 billion dollars) by 2025, according to figures from the State Council. China’s Xiaomi wants to put artificial intelligence ‘everywhere’, and it’s not alone. Face++, a Chinese face recognition startup (and one of Sinovation’s investments), recently won first place in 3 computer vision challenges, ahead of teams from Microsoft, Facebook, Google, and CMU. Xiaomi plans to put sensors and AI processing components in home electronics while running a computing cloud handling more complex calculation for them. To keep up with the likes of Huawei, Xiaomi must think big, and for the likes of Didi to catch Uber and so many other races, China is racing with itself in a race that makes over-taking less agile and less hard working U.S. companies all but a given. All of this is without taking into the most important aspect of all progress. China has yet to hit it’s economic peak of Economic superiority over the U.S. China Predicted to Surpass U.S. Economically by 2032 This study is pretty conservative I think, a report by CERB, the Centre for Economics and Business Research in London. [chart ommitted] Towards the Technological Singularity But let’s remember, speech and image recognition technology might be nice, but it isn’t the future of AI. Real breakthroughs require converging new answers to age old questions. If “There is no data like more data”, China is about to have a serious advantage over the U.S. Amazon Prime can have 100 million users, it sounds nice on paper. Tencent’s WeChat already has around 1 Billion users. WeChat’s payment integration with QR codes means it’s far more actionable data that loads of Facebook, WhatsApp and Instagram user accounts. There’s literally no western equivalent to Tencent. They are into mobile gaming and investing in ways that Facebook should have, but never did get into. When AI stands to transform virtually everything including labor, the environment, and the future of warfare and cyberconflict, the superiority of China in AI over the United States will feel very very real in the 2030s. China’s rapid agility towards green technology and electric cars is also more aggressive by proximity to air, water and food pollution. The forces that push China further are more urgent and more the will of its leaders. In the U.S. there’s no such leadership or urgency, as America has become the brat of the Paris Accord and must depend on names like SpaceX, Tesla and only a handful of companies to actually even look competitive. Countries like Germany have embraced the smart energy grid, now maybe almost a decade ahead of the U.S.. In China, they aren’t falling behind, they are keeping pace. The timing of the Tech Singularity coincides with Chinese Dominance in Tech By the time China passes the U.S. sufficiently in artificial intelligence, the next-gen pre-sentient AI systems will be starting to come online. Where do you think they will first be born? It won’t be San Francisco, Boston or New York, it will be Beijing, Shanghai and Shenzhen. Think about for a second even what a tier-1 Chinese city means. China classifies its cities according to GDP, administrative level and population. All first tier cities have a GDP over $US 300 billion. Tier 1 cities are directly controlled by central government. Cities with more than 15 million people. In short, Tier 1 cities of China, don’t even exist in the U.S. Asia’s high density and collectivistic norms for the full-engagement of innovation and progress, are more suited to manifesting the technological Singularity. This might sound counter-intuitive to some, but let history be our witness. Countries that are centralized in the way China is, can also collaborate on joint ventures in a way that would not be possible in America, even if America had China’s population. By the way, the American fertility rate is a post 2008 recession trend that is officially a time ticking demographic bomb. The coming wave of automation and the future of work, will further crush it. As China’s economy scales China’s middle class, the generation of Chinese born in the 1990s are the most transformative generation in the history of humankind. Circa, 2035, they are doing some of their best work, manifest destiny for the Technological Singularity. The Universal Basic Income debates in America of the early 2020s will attract a lot of people who will want to move there. You think climate migrants are going to be big? This will create an economic press, where post-automation, China is significantly ahead of America. India’s demographics with so many Millennials, will be playing catch-up and in the 2030s will make remarkable progress. You don’t want to be in the U.S. in the 2030s. This is because Americas have no intention of combating wealth inequality, they will be victims of their own free-market thinking and a decently large segment of the Middle Class is going to pay the price and bite the bullet. China as a high-tech police state will have its own issues. In relationship to the future of Artificial Intelligence, China is still a far better place to be born. However premature this may sound in 2018. The Chinese Tech Dynasty is Closing In When you consider even the top funded companies in China in 2017, you begin to get a sense of the scale the Didi, Meituan-Dianping, Daikuan, NIO, Ofo and Mobikes of the world that are coming. Alibaba and Tencent aren’t cannibalizing (divide & conquer a la Wall Street) companies the way Amazon is, or the way the likes of Apple and Facebook have stunted innovation in the West, they are funding and supporting it. So let’s think about what the China Tech Dynasty will become along with their artificial intelligence. [graph omitted As China begins to dabble, a bit of Snapchat here a bit of Tesla there, these companies will also have partial access to certain advantages in China. Like Apple, they will in part sell out to China in exchange for some access to their market. And so this story starts to accelerate, Chinese firms will soon be able to scale faster globally than foreign firms cna make it in China. That’s the basic formula for the emergence among many of the other factors I’ve discussed, on a Chinese Tech Dynasty. These 800+ million Chinese consumes fuel firms into the dynasty at record pace. A Tale of Two Nations in Opposite Directions The U.S. is failing to invest in basic AI research, and this coincides with a massive lack of trust in American leadership and a crisis internally in the government. China on the other hand, has high-trust levels in their authority and government. As American contracts into a warped populism and fear of the outside world, China is expanding its sphere of influence in Asia and globally. The AIIB and One Belt One Road initiatives are massive undertakings that all set China up for economic prosperity in the years to come. America’s political climate and internal division that can even be witnessed in a microcosm amid Google’s employees, means China has won the race to AI before it even started since both countries are going through very distinct phases of their National destiny. For AI, it’s also key to note that the data gap between the US and China is “dramatically larger” than the actual gap between the respective populations or the number of active mobile users. This is because in China, the rights and priorities of the state are seen as more important than the rights of the individual. Techno-collectivism is in this sense more native to how AI-consciousness, whatever you might call it, can emerge. Human beings as separate entities, will always be kind of dumb. They won’t suddenly dramatically improve their capabilities. Smart machines working in a framework of collective collaboration and efficient cooperation, can in a sense hyper-specialize in a way that means how automation manifests in China vs. the United States, is fundamentally different. How this scales is also expected to impact how machine learning might come to learn how to learn better. Once self-learning AI is achieved, of the nature of a general intelligence, well all of humanity will have a reckoning (if at all such a thing is possible). This means corporations such as Google, Apple and Amazon are desperately trying to cherry-pick AI talent in China as well. This is occurring even though they are weirdly blocked from actually doing business in China. Yet these companies cannot even slow down the inevitable and they know China is coming for their markets and are more agile than their most direct competitors in the West. In the race to AI, corporate espionage and nurturing talent funnels even in the other’s backyard, are just part of the game. China’s State Council Plans for Artificial Intelligence Dominance However when the China’s State Council laid out ambitious plans for China to become the world leader in artificial intelligence (AI) in 2017, they placed AI at the center, and the goal is for it to become a 150-billion-US-dollar industry by 2030. The U.S. spends so much on its military and as healthcare costs balloon, America’s chances of being first to Mars are greater than winning the race to Artificial Intelligence.

#### AI’s far off and doesn’t cause extinction

Brooks et al 15 -- Panasonic Professor of Robotics (Emeritus), Computer Science and Artificial Intelligence Lab, Massachusetts Institute of Technology; Founder, Chairman, and Chief Technology Officer, Rethink Robotics; Abhinav Gupta -- Assistant Research Professor, Robotics Institute, Carnegie Mellon University; Andrew McAfee -- Principal Research Scientist and Cofounder, Initiative on the Digital Economy, Sloan School of Management, Massachusetts Institute of Technology (Rodney, 2/27/2015, "Artificial Intelligence and the Future of Humans and Robots in the Economy," Malcolm and Carolyn Wiener Annual Lecture on Science and Technology: Artificial Intelligence and the Rise of Robots, http://www.cfr.org/technology-and-science/artificial-intelligence-future-humans-robots-economy/p36205)

BROOKS: People always want us to fight, but we don't really. I think, although I agree with the general themes that Andy talks about, I think it's very easy for people who are not deep in the technology itself to make generalizations, which may be a little dangerous. And we've certainly seen that recently with Elon Musk, Bill Gates, Stephen Hawking, all saying AI is just taking off and it's going to take over the world very quickly. And the thing that they share is none of them work in this technological field. So let me explain why—and they're all smart people, but I think they're making a fundamental error and it gets to NEIL, actually. THOMPSON: After taking down Bill Gates, Elon Musk and Stephen Hawking, he's going to take down the Dalai Lama. Please continue, Rodney. BROOKS: So let's go back to an example from the '90s, when IBM's Deep Blue beat Kasparov, beat the world chess champion. And Kasparov got up and said, well, at least it didn't enjoy beating me. That was his—holding on to his humanity. And now, today, you can get programs that run on—and that was on a supercomputer and now you can get programs that run on laptops. There's about twelve of them that have a better chess rating than any human being has ever had. So people see that -- MCAFEE: It's so bad now—let me underscore what Rod is saying. It's so bad now that they asked human grand master a couple years ago how he would prepare for a match against a computer and he said, I'd bring a hammer. BROOKS: So they can play chess really, really well. And I think people generalize that in the way that if a person can do some task really, really well, they can do adjacent tasks quite well. But none of those chess programs can play tic-tac-toe. Imagine a chess grand master who couldn't play tic-tac-toe. It doesn't make sense. None of those chess programs can give advice to an aspiring human on how to play better. All they can be is a sparring partner. MCAFEE: That program couldn't play tic-tac-toe without being substantially redirected, right? BROOKS: Right. So people, I think, are seeing some of the image labeling that's going on, for instance. Google came out with image labeling, which is a great commercial problem for them. They want to be able to label images. And one of the examples was, that Jeff Hinton shows, one of the chief scientists, is, it's a picture and it says there's a baby holding a teddy bear or doll in there. You look at it, it's a baby holding a teddy—a doll. But then if you ask the program, where is the baby? All it can say is, well, this pixel has 10 percent probability of being a baby, this pixel has 80 percent. And people have done experiments. You have a mashup of, you know, a grotesque mashup of baby parts and it says it's a baby. It's a baby. It's got all the parts. But a person says, no, that's a grotesque mashup of baby parts in the image. THOMPSON: But Abhinav, you've solved this, right? GUPTA: No, no, no. BROOKS: Well, he's working towards-- GUPTA: So, can I-- BROOKS: He's working towards it because it's such a hard problem. GUPTA: Yeah, OK. Thank you. So since we are talking about images, I think I should chime in a little bit and tell you that—so what Andrew is talking about, that we have made big advances, again, they're very, very specific tasks. Given an image, tell me what label can you put on that image? We have gotten really good at this task. Some people claim even better than humans. I don't buy that, but let's assume that even better than humans. But that doesn't mean we can do anything else apart from that exact task. And that's what Rodney was talking about. They have no idea that—what does baby mean? What does having a baby mean in those images? No idea. You, as a human, would know, OK, if I'm saying there's a baby, it has a lot of meaning inside. You get a lot of meaning out of that thing. So while we have made significant advances in the last two years, I want to boil it down a little bit and say we still are a long, long way to go but Elon Musk or Bill Gates, everyone is talking about, we still have a long way to go. But there's hope, and that's what I think we have to see here. Two years ago, if you asked me can computers take an image and solve this problem, I would say I have invested seven years of my life but if you give me a random image, it will not work. And now, given a random image, it will work. So all it -- MCAFEE: This was the guy who was doing this for a living and if you asked him two years ago would this happen, he would say, no. This progress is weirdly fast and is surprising insiders in the field. GUPTA: Yeah. I agree. And I'm an insider in the field and I'm very surprised, I have to say. Now, at this point of time, I am like living in an awe of myself, in some sense, that—but it was like Rodney told—Rodney told us that in thirty-five years he never thought he'd do this all. I also thought some of it, like that, for thirty-five years, I will not solve—see this kind of classification performance. But as I'm saying this, still a long, long way to go and much harder way to go. What—where all the kind of gains have come from is the data. And I think—so technology, this like deep-learning technology has been there from '70s and '80s. Don't misunderstand that this technology came two years ago and everything's changed. This has been there for thirty years. It's just that for the first time in our technological advances we have data for this deep-learning technology to learn. MCAFEE: Let me jump on this because I think the three of us are really agreeing, instead of disagreeing. I chose my adjective pretty carefully. I said these advances are going to be economically significant. I completely agree with Rod that they're not going to be existentially significant on any timeframe that we really need to worry about, for exactly the reasons that you're bringing up. One way to think about this, the way I try to get my mind around it, is there are, from what I've been able to take in, there are something like between ten and twenty really fundamental challenges that these guys and their discipline have been working on. Common sense is a really great example of that. As I've looked around, these breakthroughs that we're seeing seem to be—kind of indicate that we're making real progress on one of those challenges, the challenges of learning in a pretty unstructured environment. That's a big deal. There are lots of other fundamental challenges in the discipline where the progress has not been as fast, and these are the ones that you're working on.

#### Super intelligent AI is impossible---risk calculus must fight uncertainty bias

Vasilaki 18 [Eleni, Professor of Computational Neuroscience, University of Sheffield, September 24, 2018, <http://theconversation.com/worried-about-ai-taking-over-the-world-you-may-be-making-some-rather-unscientific-assumptions-103561>]

Should we be afraid of artificial intelligence? For me, this is a simple question with an even simpler, two letter answer: no. But not everyone agrees – many people, including the late physicist Stephen Hawking, have raised concerns that the rise of powerful AI systems could spell the end for humanity. Clearly, your view on whether AI will take over the world will depend on whether you think it can develop intelligent behaviour surpassing that of humans – something referred to as “super intelligence”. So let’s take a look at how likely this is, and why there is much concern about the future of AI. Humans tend to be afraid of what they don’t understand. Fear is often blamed for racism, homophobia and other sources of discrimination. So it’s no wonder it also applies to new technologies – they are often surrounded with a certain mystery. Some technological achievements seem almost unrealistic, clearly surpassing expectations and in some cases human performance. No ghost in the machine But let us demystify the most popular AI techniques, known collectively as “machine learning”. These allow a machine to learn a task without being programmed with explicit instructions. This may sound spooky but the truth is it is all down to some rather mundane statistics. The machine, which is a program, or rather an algorithm, is designed with the ability to discover relationships within provided data. There are many different methods that allow us to achieve this. For example, we can present to the machine images of handwritten letters (a-z), one by one, and ask it to tell us which letter we show each time in sequence. We have already provided the possible answers – it can only be one of (a-z). The machine at the beginning says a letter at random and we correct it, by providing the right answer. We have also programmed the machine to reconfigure itself so that next time, if presented with the same letter, it is more likely to give us the correct answer for the next one. As a consequence, the machine over time improves its performance and “learns” to recognise the alphabet. In essence, we have programmed the machine to exploit common relationships in the data in order to achieve the specific task. For instance, all versions of “a” look structurally similar, but different to “b”, and the algorithm can exploit this. Interestingly, after the training phase, the machine can apply the obtained knowledge on new letter samples, for example written by a person whose handwriting the machine has never seen before. Humans, however, are good at reading. Perhaps a more interesting example is Google Deepmind’s artificial Go player, which has surpassed every human player in their performance of the game. It clearly learns in a way different to humans – playing a number of games with itself that no human could play in their lifetime. It has been specifically instructed to win and told that the actions it takes determine whether it wins or not. It has also been told the rules of the game. By playing the game again and again it can discover in each situation what is the best action – inventing moves that no human has played before. Toddlers versus robots Now does that make the AI Go player smarter than a human? Certainly not. AI is very specialised to particular type of tasks and it doesn’t display the versatility that humans do. Humans develop an understanding of the world over years that no AI has achieved or seem likely to achieve anytime soon. The fact that AI is dubbed “intelligent” is ultimately down to the fact that it can learn. But even when it comes to learning, it is no match for humans. In fact, toddlers can learn by just watching somebody solving a problem once. An AI, on the other hand, needs tonnes of data and loads of tries to succeed on very specific problems, and it is difficult to generalise its knowledge on tasks very different to those trained upon. So while humans develop breathtaking intelligence rapidly in the first few years of life, the key concepts behind machine learning are not so different from what they were one or two decades ago. The success of modern AI is less due to a breakthrough in new techniques and more due to the vast amount of data and computational power available. Importantly, though, even an infinite amount of data won’t give AI human-like intelligence – we need to make a significant progress on developing artificial “general intelligence” techniques first. Some approaches to doing this involve building a computer model of the human brain – which we’re not even close to achieving. Ultimately, just because an AI can learn, it doesn’t really follow that it will suddenly learn all aspects of human intelligence and outsmart us. There is no simple definition of what human intelligence even is and we certainly have little idea how exactly intelligence emerges in the brain. But even if we could work it out and then create an AI that could learn to become more intelligent, that doesn’t necessarily mean that it would be more successful.

### AT: Super Soldiers---2AC

#### It’s inevitable

Pappalardo 18 [Joe Pappalardo, Popular Mechanics, “Short-Term Superhuman: If We Create Augmented Soldiers, Can We Turn Them Back?” 9-25-2018, <https://www.popularmechanics.com/military/research/a23457329/augmented-super-soldiers-reversible>]

The coming issues with human enhancement will ripple across the military and society. The only way to avoid these problems seems to be to make sure the techniques are safe for soldiers and reversible after they are discharged. Last year, three Canadian defense researchers published a paper that explored the intersection of human enhancement and ethics. They found that the permanence of the enhancement could have impacts on troops in the field (“will unequal distribution of the technology between soldiers cause tension and lead to dysfunction?”) as well as a return to civilian life (“a permanent technology give a veteran an unfair advantage or disadvantage at finding employment?”) They also note that “many soldier resilience human enhancement technologies raised health and safety questions.” These problems would ease when an enhancement is temporary: A soldier can train to use an exoskeleton and a temporary chemical boost wouldn’t carry into civilian life. Or would they? A soldier could follow an order to take an enhancement that is considered temporary but in reality has unexpected problems. The Canadian researchers wrote: “Are there unknown side effects or long term effects that could lead to unanticipated health problems during deployment or after discharge? Moreover, is it ethical to force a soldier to use the technology in question, or should he/she be allowed to consent to its use? Can consent be fully free from coercion in the military?” The Augmentation Arms Race Is Coming The Pentagon’s desire for reversible human augmentations over potentially irreversible ones will favor some technologies winning out over others. Exoskeletons over implants, for example. But that doesn’t mean strange-sounding body hacks won’t find their place at the Pentagon. For example, the military is obsessed with new ways to improve training, and whether soldiers’ brains can be stimulated to learn skills more quickly. A 2018 report from this year’s Mad Scientist conference, a future tech conference run by the U.S. Army, states that “there are studies being conducted that explore the possibility of directly emulating those expert brain states with non-invasive EEG caps that could improve performance almost immediately.” In other words, the term “thinking cap” is about to become more literal. There’s common worry in the defense world that casts a shadow over human enhancement: Will America’s ethics be its downfall, dooming the U.S. to second place in the super-soldier arms race? After all, totalitarian regimes do not have many ethical limits or transparent media to report on experiments. Gene editing equipment has grown drastically cheaper and easier to use in recent years, putting those tools within reach of well-funded non-government actors such as terrorist groups and drug cartels. As one U.S. Navy report in 2015 noted: “Major ethical concerns about the voluntary and reversible nature of such augmentations mean that it is more likely these enhancements will first gain traction in state and non-state forces that do not place as much weight on ethical concerns as our own.” Every medical advance is now eyed for augmentation potential, and not just in the United States. Rogue regimes, terrorist camps, and drug cartels don’t read papers that have phrases “potential ethical issues,” “ policy modifications,” or “ethical assessments.” In the future, U.S. forces may find themselves on the lagging side of the human augmentation. And they may be happy for it.

### AT: TASS---2AC

#### It’s hard to be LESS credible than TASS.

Dave M. Van Zandt 22, primary editor for sources for Media Bias/Fact Check, “Russian News Agency-TASS,” https://mediabiasfactcheck.com/russian-news-agency-tass/micahw

In review, TASS is a news wire service similar to the Associated Press, but there is no comparison between the two. The only similarity is both use low-biased headlines and wording; however, TASS is 100% Russian propaganda all the time. It is impossible to find an article critical of Vladimir Putin and his administration. TASS does not cite sources in their news reporting and often omits reporting that is not positive about Russia. Further, they report favorably on former President Trump and often promote disinformation directed at Trump’s opponents such as this: Joe Biden’s son and his partners received $16.5 million from Burisma — Ukrainian MP. This story lacks sourcing to back claims. The bottom line is TASS is a puppet of the Russian Regime.

Overall, we rate the Russian News Agency (TASS), Questionable based on the consistent promotion of Russian Propaganda, conspiracies, and poor sourcing of information. (D. Van Zandt 2/16/2017) Updated (02/25/2022)

#### Goofy ahh report card---inserted.

Dave M. Van Zandt 22, primary editor for sources for Media Bias/Fact Check, “Russian News Agency-TASS,” https://mediabiasfactcheck.com/russian-news-agency-tass/micahw

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### AT: DEWs---2AC

#### Direct energy weapons are not real

Subrata Ghoshroy 15, MS in Public Policy Analysis from the University of Michigan, MS in Electric and Electrical Engineering from Northeastern University, Research Affiliate at the Massachusetts Institute of Technology’s Program in Science, Technology, and Society, For Many Years A Senior Engineer in the Field of High-Energy Lasers, Professional Staff Member of the House National Security Committee, “Navy’s New Laser Weapon: Hype or Reality?”, 5/18/2015, https://thebulletin.org/2015/05/navys-new-laser-weapon-hype-or-reality/

Proponents do not seem to be dismayed, however, citing the same old supposed benefits of a military laser, if one could ever work under battlefield conditions: A military laser would be a lightweight, effective high-energy device, that could hit an enemy target at the speed of light (186,000 miles per second) as opposed to the speed of the fastest hypersonic missiles (about 3,800 miles per hour). And they claim that each individual firing of a laser would be dirt-cheap, at less than a dollar per shot—if one excludes the billions of dollars spent in research and development. It also presumably excludes the cost of shipboard electrical power, likely in the thousands of watts, that would be needed.

But there are many obstacles to getting a powerful laser out of the lab and onto the battlefield, where it must be small and rugged enough to operate in a hostile environment while still packing enough punch to be effective. Big, gas-powered lasers generate plenty of oomph to do damage, but they need vast amounts of power to operate, and are far too bulky to fit on a tank or a plane. Chemical-based lasers offer the benefits of being very efficient while not needing electrical power, but they are almost as hefty as gas-powered ones—one of the reasons for the demise of the airborne laser system that the Air Force had been pursuing. Solid-state lasers are small and compact, but produce only low power and cannot fire very far.

There are many other hitches as well. Any weapon that relies upon light traveling through the atmosphere runs into the problems of dust, humidity, and fog—features which absorb and scatter the laser energy. In addition, atmospheric distortions such as turbulence can deflect a beam of light. And at the same time that the photons in a laser’s beam must overcome all of these obstacles, they must also stay focused in a tight column and keep advancing forward without diminishing in power. Meanwhile, the user of the laser weapon must account for the movement of the target, the movement of the firing platform, and any decoys, dummies, or multiple war warheads that the enemy throws up.

The latest generation of lasers, based on fiber optics, promises to solve many of these problems, but at this time, fiber-based lasers consume about ten times as much power as their older brothers—and reliably generating that huge amount of energy under battlefield conditions is a challenge.

All told, while lasers, or “directed energy weapons,” offer the tantalizing possibility of being game changers, they will not likely be ready for prime time anytime soon. Like a mirage, battlefield lasers are always just over the horizon. If the history of military lasers is any guide, caution is warranted.

The path to laser weapons is littered with dead lasers. Not long after the carbon dioxide laser was demonstrated at Bell Labs in 1960 (the acronym “laser” stands for “light amplification through the stimulated emission of radiation”), the Navy began funding research to bring the new technology to the battlefield. The military influence showed in the choice of names for the devices—Thumper, Humdinger, and Scaleup—which I became familiar with when gas-powered, carbon-dioxide lasers showed a lot of promise. Regardless of whether they are powered by gases, chemicals, solid fibers, or wafer-thin diodes, all lasers operate under the same general principle: They get a bunch of atoms, molecules, or ions in a given lasing medium pumped up in unison to the next energy level so that they emit light (photons) while giving up their energy. A laser resonator (much like a telescope) makes the unruly photons march in step, and stay in a narrow column. The resulting beam of light contains a powerful concentration of energy, all at precisely the same wavelength, that can be used for everything from eye surgery to cutting metal. And, possibly, for warfare.

#### Technical challenges can’t be overcome

Ryan Fedasiuk and Kingston Reif 18, research assistant AND Director for Disarmament and Threat Reduction Policy at the Arms Control Association, 5-14-2018, "Reasons to Doubt Laser Missile Defense," Arms Control Association, https://www.armscontrol.org/blog/2018-05-14/reasons-doubt-laser-missile-defense

For years the disheveled YAL-1 Airborne Laser baked in the Air Force Boneyard in Tucson, Arizona. Stripped of its chemical laser and turbofan engines, its airframe became a skeletal albatross—a monument to the futility of laser-based missile defense. But in 2014, it was unceremoniously destroyed, and the Defense Department wiped the failure from its memory. The system was meant to fly above hostile territory to track and destroy intercontinental ballistic missiles in flight. But after 16 years and $5 billion, the program was canceled simply because it did not work. Four years later, however, laser-based missile defenses are back in vogue. In his keynote speech to the 2017 Booz Allen Hamilton Directed Energy Summit, Deputy Director of the Missile Defense Agency Jon Hill identified three key barriers the agency is facing in its rejuvenated quest to develop a directed energy weapon for defense against incoming missiles: tracking targets at long ranges, controlling the beam, and scaling up the power. The Missile Defense Agency’s (MDA) goal is to field a laser weapon on a high-altitude, long-endurance (HALE) drone by 2023. The laser-armed drone would circle potential launch sites and shoot down ballistic missiles while they are in their most vulnerable “boost phase.” Toward this goal, the Defense Department plans to spend $563.5 million on directed energy research across five research programs: [Chart Excluded] Yet significant questions remain about the technical challenges facing such a system and whether they can be overcome. Precision Tracking: First, a directed-energy weapon would need to precisely track targets the size of a quarter from hundreds of kilometers away. To achieve this, MDA’s plan calls for using passive tracking at longer ranges to detect the target, then switching to active tracking when the target is closer. The laser designators on MDA’s active tracking systems, which belong to the Multispectral Targeting System (MTS) family of sensors, have not demonstrated anything close to an extended-range laser range-finding capability. Cloud cover, rain, or smoke can also prevent signal detection, which is why laser rangefinders fell out of favor in the 1980s. Moreover, many basic countermeasures can exploit the fragility of these kinds of sensors. To disarm a laser rangefinder, an adversary could simply coat the surface of its missile in reflective or absorbent material, or just as easily deploy dust or shrapnel to disrupt the electrooptical sensors on a system like AN/DAS-4, the most advanced laser tracker used in prototype weapons. Beam Control: Another major problem with laser technology is jitter—"the degree to which the spot of laser light jumps around on the surface of the target due to vibration or other movement.” To be effective, a laser must bore into a single spot for several seconds until the target is destroyed. Several systems, including Position Sensing Devices (PSD), Fiber Optic Gyros (FOG), Fast Steering Mirrors (FSM), and various filters can significantly reduce jitter, but only to the micron level—several thousand times wider than the nanoradian specificity MDA demands. And ultimately, the work MDA puts into reducing jitter may be for nothing. Adversaries can easily exploit a laser’s reliance on one target point by designing their missiles to roll in flight, ensuring the laser does not have a static target, even in boost phase. Power Scaling: At the heart of MDA’s directed energy weapon problem is lowering the ratio of size, weight, and power (SWaP) in a laser system. In his justification for terminating the Airborne Laser program, which mounted six SUV-sized lasers on a Boeing 737, Defense Secretary Robert Gates said the Air Force “would need a laser something like 20 to 30 times more powerful” to be able to hit a missile at a sufficient range. Today the Missile Defense Agency wants to scale up the power for such a system, but field it on a drone. To remedy this technological gap, MDA is pursuing two technologies: the diode-pumped alkali laser system (DPALS), which focuses on building a more powerful singular laser, and Fiber Combining Lasers (FCL), which combine the beam outputs of smaller lasers. Unfortunately, both technologies require approximately 35-40 kilograms of weight per kilowatt of energy emitted. “To have any chance of fielding it on a high altitude platform," said former MDA Director James Syring, "where we need to be is below the 5 kilograms-per-kilowatt window." Neither the agency nor federally funded research and development centers have indicated how they plan to achieve this. However, if the technology proves successful, the agency will run into problems with beam quality. As a laser travels to its target, “it encounters atmospheric effects that distort the beam and cause it to lose its focus.” Particles in the atmosphere such as water vapor, sand, dust, salt, and pollution can all absorb or refract a laser’s energy, and thermal blooming is of particular concern in high-power laser weapons. Tactical Considerations: Even if every technological barrier was successfully conquered, though, it’s far from clear that laser weapons would be an effective form of missile defense. This is because lasers, unlike kinetic interceptors, face limitations that are tactically insurmountable no matter how advanced technology becomes: First, a laser can only stop a missile if it generates enough energy to cut into its electronics package. By adding a harder, thicker layer of outside shielding, adversaries can strengthen a missile’s “skin” and prevent it from being disabled. Second, lasers can only focus on one target at a time. An adversary could simply launch a salvo attack to oversaturate laser defenses. Third, laser weapons can only destroy targets in their line of sight. This means most systems would be unable to target low-flying cruise missiles. Moreover, line-of-sight systems are restricted by the curvature of the earth and risk letting targets get away over the horizon—a limitation not faced by heat-seeking kinetic interceptors. There are also platform-specific limitations unique to lasers: Air-, ground-, and sea-based platforms need to be close to the target’s launch site to achieve boost-phase missile interception. But perpetually keeping laser weapons near prospective launch sites is financially unsustainable, and if the platform is manned, it is risky for military personnel. Space-based platforms may accidentally damage or destroy nearby satellites, risking escalation in a conflict or inhibiting U.S. reconnaissance operations. Despite the many pitfalls of directed energy weapons, it is unlikely that the Missile Defense Agency will soon relinquish the chase for laser defense. But one thing is certain: the road ahead will be difficult and costly.

#### They are too heavy

Aaron Mehta 18, Deputy Editor and Senior Pentagon Correspondent for Defense News, 12-19-2018, "Why DARPA thinks air assets will be the last to get laser weapons," C4ISRNET, https://www.c4isrnet.com/electronic-warfare/2018/12/19/why-darpa-thinks-air-assets-will-be-the-last-to-get-laser-weapons/

It’s been a running joke inside the defense technology community for years: lasers are the weapons of the future ... and always will be. But while experts have long predicted laser systems, also known as directed energy weapons, are juuuust over the horizon, more and more technology experts have said they believe lasers are truly in the realm of the possible in the near-term for the Pentagon. Which raises the question: who gets them first? Speaking at the Washington Post earlier this month, Steven Walker, director of the Defense Advanced Research Projects Agency, said, if possible, the Air Force would love to get directed energy up and running tomorrow. "I never met a four-star general who didn’t want a laser on his airplane,” Walker said. “It would be really neat. That would be a really neat technology and capability.” But weight remains an issue, Walker warned. Quite simply, the technologies needed to support a laser weapon are heavy. “All this power generation and cooling adds up in terms of weight," he said. As a result, “I think airplanes will probably be the last, sort of, application of it, but I think we’re very close to having a ship-based capability,” he said. “The Navy’s done some demonstrations in that space. I think ground capability, lasers from the ground, from trucks, are being worked pretty heavily. And those will be closer than a laser on the airplane.”

#### Both laser and microwave systems fail

David Wichner 18, reporter focusing on technology and defense, 4-1-2018, "Tucson Tech: Pentagon, Raytheon re-energize directed-energy weapons push," Arizona Daily Star, https://tucson.com/business/tucson-tech-pentagon-raytheon-re-energize-directed-energy-weapons-push/article\_2197cbb4-e1f3-5026-bf23-4b5f473822e6.html

The Army, Navy, Air Force and defense contractors have been working for years to develop so-called directed-energy weapons for short-range air defense and other applications. Since 2014, the Navy has been operationally testing a ship-mounted laser for defense against drones, small aircraft and high-speed boats. The fiscal 2017 defense authorization act mandated that the Defense Department accelerate development of directed-energy weapons, according to a recent report by the Congressional Research Service. In the fiscal 2018 federal budget signed into law recently, Congress added $25 million to the Army’s budget for high-energy lasers, with about $155 million allocated to demonstrate laser weapons on trucks and the Army’s Stryker wheeled armored vehicle, according to the CRS report. An earlier vehicle-mounted laser system developed by Northrop Grumman and Israeli contractors shot down more than 30 rockets and artillery and mortar shells during operational testing in the early 2000s. But the chemical-based laser system was deemed too large for vehicle use and the program was canceled, according to the CRS report. Directed-energy weapons still face significant challenges, for lasers that includes generating adequate power and cooling, blockage from weather and obscurants and limited range, the report said. The nonpartisan research group also noted that high-powered microwave systems may be hampered by moist air, their effects through structures are unpredictable and they could be defeated by radiation shielding.

#### The pentagon doesn’t think they’ll work

Sandra Erwin 19, writes about military space programs, policy, technology and the industry that supports this sector, She has covered the military, the Pentagon, Congress and the defense industry for nearly two decades as editor of NDIA’s National Defense Magazine and Pentagon correspondent for Real Clear Defense, 1-23-2019, "Pentagon's Missile Defense Review unenthusiastic about Star Wars weapons," SpaceNews, https://spacenews.com/pentagons-missile-defense-review-unenthusiastic-about-star-wars-weapons/

One of the surprises of the 2019 Missile Defense Review is that it did not cheer the use of weapons in space. The arms-control community had braced for the MDR to recommend actual deployments of lasers and other missile interceptor weapons in space. The review does call for further study of space-based interceptors, which suggests the Pentagon is not convinced the technology can work or that it’s smart policy, said Joseph Cirincione, president of the Ploughshares Fund. “We don’t get the much ballyhooed weapons” such as space lasers.. Laura Grego of the Union of Concerned Scientists cautioned that whatever studies are conducted on space weapons should stop short of actual tests. “The research may include on-orbit testing, and that would be a great concern,” she said. “That is a line we have not crossed.” A recommendation in the MDR to deploy a new Space Sensor Layer for hypersonic missile defense is a far less controversial proposition. New sensor-equipped satellites would not necessarily be destabilizing, although it could motivate China and Russia to proliferate more missiles, said Cirincione. “The fact that you announce this process [to build new missile defense sensors] forces adversaries to ramp up their offensive capability.” Grego said she worries that the Pentagon’s emphasis on “rapid acquisition” and easing bureaucratic red tape for projects such as the Space Sensor Layer could lead to a massive waste of taxpayer dollars. She noted that the Ground-Based Midcourse Defense that was developed in the 1990s to counter North Korean and Iranian ballistic missiles cost $70 billion and has only showed a 50 percent success rate. “When you back off oversight, you end up spending billions on something that doesn’t work,” she said. If Congress fails to exert proper oversight, the Pentagon’s Space Sensor Layer could turn into a “recipe for spending money and getting nothing.”

### AT: Poseidon---2AC

#### Poseidon’s already being deployed – this is just our impact

MacFarquhar 19 [Neil MacFarquhar, New York Times, “Threatening U.S., Putin Promises Russians Both Missiles and Butter,” 2-20-2019, <https://www.nytimes.com/2019/02/20/world/europe/russia-missile-threat.html>]

Mr. Putin did not criticize President Trump, instead suggesting, as he has in the past, that a secretive “deep state” hobbled the American president. In his speech last year Mr. Putin cataloged an array of new weapons that he said Russia was developing, while animations showed missiles striking the United States. This year he mentioned just a few. This spring, he said, Russia will launch its first nuclear submarine carrying a Poseidon, an unmanned underwater nuclear drone, and will deploy a new Zircon hypersonic missile for the Russian Navy. The missile can fly at nine times the speed of sound with a range of 620 miles, he said. Mr. Putin took up his usual foreign policy cudgel at the end, using most of the 90-minute speech to Russian lawmakers to focus on improving the standard of living in Russia.

#### No impact – inefficient, slow, and detectable which leaves it prone to conventional checks.

**Peck 18** [Michael Peck, is an award-winning writer specializing in defense and national security issues. He holds an MA in political science from Rutgers University ; 9-27-2018; "100-Megaton Nuclear Monster: How to Stop Russia's City-Killer Torpedo"; National Interest; <https://nationalinterest.org/blog/buzz/100-megaton-nuclear-monster-how-stop-russias-city-killer-torpedo-32082>]

How useful such a weapon would be is debatable. Poseidon is **too slow**, compared to ICBMs and bombers, to be useful in a first strike or an **immediate** retaliatory strike. Moving at high speeds may [make it so noisy](https://nationalinterest.org/blog/the-buzz/just-how-much-threat-russias-status-6-nuclear-torpedo-24094) that anti-submarine can detect it, and its autonomous nature brings up all the questions about armed robots (especially ones carrying mega-bombs). Nonetheless, as a psychological weapon, it's brilliant. There is something frightening, like a Hollywood monster movie, about the thought of a robot tsunami-bomb creeping along the sea floor. But for every vampire, there is a stake waiting to slay it through the heart. H I Sutton, a naval analyst who runs the [Covert Shores blog](http://www.hisutton.com/Countering_Russian_Poseidon_Torpedo.html) on naval affairs, offers some ideas on technology that NATO can employ to halt Poseidon. Sutton assumes that Poseidon's "operating modes and route planning will likely be simple (read reliable) and relatively direct, relying on speed and depth for survival." That being the case, one countermeasure would be to **seed the seabed** with networks of sensor-mines to **detect** and **destroy** Poseidons. "Ideally the sensor networks would include their own effectors (e.g. torpedo armed mines) to minimize the delay from detection to neutralization, since the targets will be moving much faster than traditional submarine targets," Sutton writes. Sutton also wonders whether Poseidons could be killed by **long-range hypersonic glide vehicles** launched by U.S. Navy submarines. "The payload could be next-generation lightweight torpedo or nuclear depth charge similar to the retired Subroc [rocket-launched anti-submarine torpedo] weapon," he writes. "The short flight time and long range of this type of system would allow kills far outside realistic ranges for torpedoes and allow submarines operating in the North Atlantic to react to Poseidon launches detected in the Arctic region, hitting the target while it is still **reasonably near** to the sensor which detected it."

### AT: Hypersonics---2AC

#### Hypersonics are already being deployed

MacFarquhar 19 [Neil MacFarquhar, New York Times, “Threatening U.S., Putin Promises Russians Both Missiles and Butter,” Feb 20, 2019, <https://www.nytimes.com/2019/02/20/world/europe/russia-missile-threat.html>]

Mr. Putin did not criticize President Trump, instead suggesting, as he has in the past, that a secretive “deep state” hobbled the American president. In his speech last year Mr. Putin cataloged an array of new weapons that he said Russia was developing, while animations showed missiles striking the United States. This year he mentioned just a few. This spring, he said, Russia will launch its first nuclear submarine carrying a Poseidon, an unmanned underwater nuclear drone, and will deploy a new Zircon hypersonic missile for the Russian Navy. The missile can fly at nine times the speed of sound with a range of 620 miles, he said. Mr. Putin took up his usual foreign policy cudgel at the end, using most of the 90-minute speech to Russian lawmakers to focus on improving the standard of living in Russia.

#### No hypersonic impact and other countries are developing

Brennan 19 [David Brennan is currently a World News reporter for Newsweek, July 15, 2019, “CHINA'S HYPERSONIC MISSILES: HOW WORRIED SHOULD THE U.S. BE ABOUT FUTURISTIC WEAPONS?” <https://www.newsweek.com/china-hypersonic-missile-weapons-worried-u-s-arms-race-military-pentagon-1447681>]

A recent propaganda video released by the Chinese military has brought one of the country's most advanced and threatening technologies back to the fore—hypersonic weaponry. Hypersonic weapons travel at incredible speed and—unlike even the most advanced ballistic missiles—can maneuver in flight. This gives the weapons enormous range and makes them much harder to track and stop. The U.S., Russia and China are all investing heavily in hypersonic technologies. However, the Pentagon has been the slowest to jump on the bandwagon and military chiefs are warning that the U.S. could be left behind by its authoritarian adversaries, at least when it comes to nuclear-capable hypersonics. The U.S. still maintains by far the most powerful military on Earth, supported by a military budget larger than that of the next seven biggest spending nations combined. As such, America's rivals must consider intelligent methods of leveling the playing field and—at least on a local or regional level—upending long-held U.S. military hegemony. This is especially true for China, where the government has invested huge sums in bringing its outdated military up to scratch. Beijing is rapidly transitioning to a potent modern force, but one still inferior to the U.S. Nonetheless, military spending has been geared towards exploiting U.S. weaknesses and dominating East Asia. Beijing is hoping that its hypersonic weapons will form a key element in this disruptive strategy. There are two types of hypersonic weapon—cruise missiles (HCMs) and glide vehicles (HGVs). Both are able to travel at speeds of Mach 1 or higher—around 3,800 miles per hour—and can maneuver during flight. This makes them difficult to shoot down, but also means it is very difficult to predict what target they will hit. HGVs are launched by a ballistic missile, but the hypersonic component itself does not have an engine. HCMs can be launched by other vehicles such as fighter jets or naval vessels, and power themselves with internal engines. Both weapons can be armed with either nuclear or conventional warheads. China is working on both types of weapon. According to Douglas Barrie, a senior fellow for military aerospace at the International Institute for Strategic Studies, Beijing is within "a few years" of fielding an HGV. China already fields a daunting missile arsenal, whether subsonic, supersonic or ballistic. For enemies, this already challenging scenario is exacerbated by the introduction of HGVs. As Barrie told Newsweek, HGVs "fly at an altitude not presently well covered by radar systems, and given their speed also potentially cut down reaction and decision time on the part of the defender. Were [China] to go ahead and also field hypersonic cruise missiles then this defensive picture would become only more complex." "Any system that reduces reaction and decision time is potentially further destabilising," Barrie added. China's interest in HGVs in part would seem to be driven by the desire to counter missile defence systems that are already or could be deployed in the Indo-Pacific theatre." Hypersonic weapons will form a key element of Chinese military strategy. U.S. force projection depends on regional bases and aircraft carriers. As James Bosbotinis—the co-CEO of U.K.-based JB Associates and an expert in maritime and aerial security—explained, it is these "high-value" targets that hypersonic weapons will focus on, particularly where evading anti-missile defenses is required. "Leadership facilities, key command and control centers, underground facilities, air bases, time-critical targets such as mobile missile launchers" and maritime targets will all be on the list, Bosbotinis told Newsweek. Once deployed, the weapons will "significantly enhance" Chinese strike capabilities in East Asia, Bosbotinis continued. The DF-17 HGV (known by the Pentagon as WU-17), for example, has a reported range of between 1,118 and 1,553 miles. This system is expected to be operational by 2020, at which point it will be the world's first HGV put into service. Though daunting, Bosbotinis noted that hypersonic weapons "are not a panacea nor invincible. Long-range precision strikes are dependent on a supporting 'kill chain' of intelligence, surveillance, and reconnaissance assets, which are themselves vulnerable." Furthermore, the U.S. is hot on China's heels. Military officials may be concerned that America is not leading the hypersonic charge, but they have been far from idle. Images have already been released of the AGM-183A Advanced Rapid Response Weapon (ARRW), which will be launched from U.S. bombers and reportedly can reach speeds up to Mach 20—four times the fastest Russian or Chinese weapon. The weapon is currently undergoing testing. Another project—the Hypersonic Conventional Strike Weapon—will reportedly put another aerial-launched hypersonic missile in service by 2022, while the secretive Defense Advanced Research Projects Agency is also working on the Tactical Boost Glide and Hypersonic Air-breathing Weapon Concept weapons. And while the U.S. might be behind China and Russia in nuclear-capable hypersonic weapons, it is thought that the Pentagon still has the edge on those carrying conventional warheads. According to Business Insider, this is more in line with U.S. military doctrine, though conventional hypersonics require more accuracy and thus more research.

### AT: PGS

#### PGS can’t beat nukes

Zhao 11 [Tony, Fellow in Carnegie’s Nuclear Policy Program based at the Carnegie–Tsinghua Center for Global Policy, 2011, “Conventional Counterforce Strike and Damage Limitation,” <https://igcc.ucsd.edu/_files/PPNT/NuclearBriefing2presentation1.pdf>]

Secondly, consider dropping the option of nuclear or conventional preemptive strike against China’s nuclear forces, even for the purpose of damage limitation. One of the rationales for developing conventional preemptive strike capability is the recognition of the increasing difficulty to use nuclear weapons firstly in a world where the public opinion is very much against any imprudent use of nuclear weapons. However, using conventional weapons to strike nuclear forces of an adversary like China for the purpose of damage limitation is not a viable option, neither. This study shows that conventional strikes by advanced precision-guided prompt global strike weapons that are developed or proposed to be developed have little chance of eliminating theater nuclear forces of a medium-sized nuclear adversary like China. More importantly, to the contrary of the purpose of damage limitation, such conventional preemptive strikes can lead to inadvertent escalation of conflicts. Therefore, keeping the option open for pursuing conventional counterforce strike capabilities will only add to existing concerns in the mind of China and other nuclear adversaries about the reliability of their nuclear retaliation forces and about the intention of the United States regarding strategic stability. Alternative strategies of damage limitation other that using conventional preemptive strikes against China’s theater nuclear forces are needed. Efforts along the lines of reinforcing existing military-to-military communication mechanisms are worth pursuing.

### AT: BMD Solves

#### BMD doesn’t solve Russian retaliation

Thompson 15 [Loren Thompson, Chief Operating Officer of the non-profit Lexington Institute and Chief Executive Officer of Source Associates, former Deputy Director of the Security Studies Program at Georgetown University, also taught at Harvard University's Kennedy School of Government, doctoral and masters degrees in government from Georgetown University and a bachelor of science degree in political science from Northeastern University, “The U.S. Has No Defense Against A Russian Nuclear Attack. Really,” March 20, 2015, <https://www.forbes.com/sites/lorenthompson/2015/03/20/the-u-s-has-no-defense-against-a-russian-nuclear-attack-really/#d78424977508>]

In order to get Moscow to stop increasing its arsenal, the U.S. agreed to an Anti-ballistic Missile Treaty in 1972. In effect, it traded away the right to defend its homeland in return for stabilizing the arms race. But stabilization in this case meant the two countries would have an assured ability to wipe each other out. The thinking was that if each side knew launching a nuclear attack would result in devastating ("unacceptable") retaliation, then neither would ever commit nuclear aggression against the other. The nicest thing that can be said about this approach to security is that it opened the way to reductions in nuclear arsenals on both sides. The arms reductions have been substantial, but in a way they don't matter: Russia still has an assured capacity to obliterate America's society and economy. That isn't going to change, because Moscow doesn't trust Washington and nuclear weapons are its sole remaining claim to superpower status. A few U.S. leaders, most notably Ronald Reagan, understood what a bad bargain this was. They saw that a security system based on "mutual assured destruction" would be unable to cope with enemies who were irrational, or accident prone, or unable to secure their arsenal against a breakdown in the chain of command. They also understood that miscommunication and misjudgments are common in confrontations such as the Cuban Missile Crisis. Even rational leaders can make mistakes when arsenals are poised to launch on a hair trigger. However, Reagan's efforts to develop ballistic missile defenses of the homeland were derailed by the end of the Cold War, because many observers assumed the waning of superpower rivalries would diminish the danger of nuclear conflict. Missile defense lost its urgency until the end of the Clinton years, when the prospect of a nuclear-armed North Korea reignited interest. George W. Bush withdrew the U.S. from the treaty banning homeland missile defenses, but his concern too was mainly with North Korea (and to a lesser extent Iran) -- Russia was not a focus of his administration's modest missile defense efforts. The Obama Administration has followed the lead of past Democratic administrations in viewing homeland missile defense as (1) too hard, (2) too expensive, and (3) too destabilizing. Until Russia unexpectedly invaded Ukraine, Obama's security team preferred to focus on further reductions in nuclear arsenals and maintaining a minimal defensive shield on the West Coast oriented to North Korea. To the extent it thought at all about the possibility of Russian nuclear aggression, its solution was a survivable retaliatory capability -- in other words, offensively-based deterrence. That deterrent -- a "triad" of land-based and sea-based missiles plus bombers -- is arguably the most important feature of the U.S. military posture for the simple reason that Russia's nuclear arsenal is the most important threat. However, on the day deterrence fails, America's highly capable strategic force will be little comfort because it can't do anything to intercept incoming warheads. All it can do is lay waste to Russia. The minimal defensive system the Obama Administration has sustained against North Korea's fledgling nuclear threat, called the Ground-based Midcourse Defense, can potentially intercept warheads attacking from any direction, but more than a dozen Russian warheads would overwhelm it. So here we sit, able to detect a Russian launch almost immediately and retaliate with devastating force, but powerless to defend our homeland and loved ones from nuclear aggression. This is the kind of strategic myopia that eventually leads to catastrophe. What America needs is a layered, resilient defensive network against Russian ballistic missiles that at least can negate the kind of limited attack resulting from a strategic error or miscalculation. That network would presumably include elements on land, at sea and in space that could give defenders multiple shots against any incoming warheads. After all, if you have three layers that are each 80% effective, then cumulatively only one in a hundred warheads would get through to their targets. Critics complain that such a system would be astronomically expensive. However, even a crash program to deploy homeland missile defenses would likely cost much less than what taxpayers are coughing up today to defend hopeless cases like Afghanistan and Iraq. And compared with the value of assets that might be destroyed in a nuclear attack, the cost would be genuinely modest -- maybe equivalent to the losses caused by a couple of Russian warheads. I have written a report for my think tank on why homeland missile defenses should be a national strategic imperative that you can read here.

### AT: Lieber and Press

#### Radar tracking fails---Lieber and Press make faulty assumptions based on total guesswork

Ludvik 17 [Jan, Assistant Professor at the Department of Security Studies and a researcher at the Center for Security Policy, Charles University in Prague, 10/17/17, “ISSF Article Review 88 on “The New Era of Counterforce: Technological Change and the Future of Nuclear Deterrence,” <https://networks.h-net.org/node/28443/discussions/526933/issf-article-review-88-%E2%80%9C-new-era-counterforce-technological-change>]

The second common strategy to protect a nuclear arsenal, mobility and concealment, is undermined by improvements in remote sensing. Traditional sensor platforms like satellites and manned aircraft are improved and supplemented by new systems such as remotely piloted aircraft, underwater drones, autonomous sensors, and cyberspying. State-of-the-art sensors collect “a widening array of signals for analysis using a growing list of techniques” and, in contrast to the Cold-War generation of sensors, the twenty-first century monitoring is persistent and data are transmitted in the real time (33). The aggregate effects of this development put the survivability of systems like submarines and mobile missile launchers in jeopardy. These systems have always been relatively easy to destroy, but historically it had been nearly impossible to locate all of them. Lieber and Press argue that modern sensors make locating and destroying possible. However persuasive Lieber and Press’s analysis of the effects of the revolution in remote sensing is, it is not without some imperfections. For instance, the heavy secrecy that shrouds the real capabilities of modern nuclear submarines and their opponents’ capabilities in anti-submarine warfare (ASW) precludes Lieber and Press from using current data to assess how vulnerable the submarines are. They must rely on the data about the vulnerability of Soviet Cold-War submarines to the United States’ ASW capabilities to support their general argument about the vulnerability of this weapon’s platform. Consequently, the article can show how vulnerable the submarines were and illustrate how vulnerable the submarines could be, but it remains uncertain how vulnerable they actually are. While logically sound, Lieber and Press’s deductive argument about the vulnerability of modern submarines is inevitably not without some speculation. It is also possible to argue that a reader can easily get a somewhat exaggerated impression about the degree of vulnerability of mobile missiles launchers to remote detection. Whereas Lieber and Press provide an impressive geospatial analysis of the possible remote-sensing coverage of North Korea’s road network to show how vulnerable North Korea’s mobile missiles are to detection and subsequent destruction, in a footnote they admit that such results cannot be directly applied to much bigger countries like Russia and China (fn. 98). Yet while the degree of vulnerability of submarines and mobile launchers to detection might have been slightly exaggerated, Lieber and Press certainly identify the trends that unequivocally undermine nuclear arsenals’ survivability.

# Russia Revisionism Supplement

## yes

### revisionism true

#### Revisionism true – empirics

Charlambides 6-26 (Yiannos Charalambides has studied Law and he is a Doctor in International Relations and European Studies. As a journalist he has been assistant editor in chief at “Simerini” (newspaper), senior political analyst and a war correspondent in Yugoslavia and the Middle East. Since 2004 he has been working as a political advisor in the European Parliament and he has been closely analysing the Cyprus problem, Euro-Turkish relations, international conflicts, European issues and particularly the economic crisis. 26 Jun 2022, “A Russian Revisionist Strategy on the Rise?” <https://doi.org/10.1080/09700161.2022.2076303>; accessed 7/5/2022) ng

The better we understand why Russia intends to increase its geopolitical and geostrategic position and role in the regional arena, the better we can realize why and how the Russian revisionist policy has been developing since 2008, from Europe to the Middle East, via the Caucasus region. Since 2008: a) Russia prevented NATO’s expansionist policy through the wars in Georgia, Crimea and Ukraine. Russia returned stridently to the international arena; b) Russia has consolidated its position as a leading and dominant power in the Caucasus region; c) It took action in the Middle East and defended its strategic interests in Syria. Moscow uses all the necessary factors available to realize its revisionist strategy. Such factors are: (1) Military strength. The first level is that of a preventive strategy. The second is that of the Russian aim to consolidate its strategy either with force—as occurred in the cases of Georgia, Crimea, Syria and Ukraine—or in the shadow of its power. (2) Gas and oil. Russia uses the pipelines like ‘energy divisions’ to serve its interests and increase its political influence over states and governments. (3) Technology. Russia combined conventional and cyber techniques and tactics in the wars that it led from 2008. Its conventional military forces include sophisticated weapons such as the missile systems of S-300 and S-400 and the hypersonic missiles (3M22 Zircon) that combined with its extended cyberwar capabilities provide Russia with the chance to attenuate the advantage that the US holds in the sea due to its tremendous war fleet power. 41 (4) Historical and imperial Russian consciousness.42 Moscow has an imperial identity and consciousness, military power, national resources and a pivotal geopolitical position in the core of the Heartland. By combining these factors, Moscow fuels its political machine to accomplish its strategic missions and targets. (5) Russian minorities existing in other states are used by the Kremlin as strategic instruments to achieve its national goals. This phenomenon is evident in the cases of Crimea and Ukraine. Minorities also exist in the Baltic States and other countries, which emerged in the regional system after the collapse of the Soviet Union. Therefore, this specific issue of minorities takes wider and more complicated dimensions. It is also relevant to political and legal motives and the right to self-determination, the exercise of which depends on conflicting and convergent national interests of the parties involved as well as the uniqueness of each case. Moreover, humanity experienced tragic implications when Adolf Hitler exploited the Sudeten Germans as a strategic instrument to occupy Czechoslovakia paving the way for the Second World War. It is not a new strategic practice. Therefore, history repeats itself because the feeling of national integration cannot be easily suppressed. The lack of an adequate European and American preventive strategy is a quasi-ally of Russia which pursues to restructure the international system and promote its revisionist strategy. The American and European expansionist policy offered Russia the pretext to put forward a preventive and then a revisionist policy in Georgia, Crimea, Syria and Ukraine. Moscow seized the opportunity to make its case by accusing the US and NATO of following an aggressive strategy that put Russian security at stake. While Russia argues that it is in defence, at the same time, it promotes its revisionist, even belligerent strategy, which partially induces a redistribution of power and the restructuring of the regional and international system in line with its hegemonic strategic goals.43 Whether this policy will be successful and to what extent, is something that only time can show. The War on Ukraine seems to be a cornerstone for the future structural changes in Europe and worldwide. Russia pursues to raise itself as a game-changer. The relevant question is the following: What structural changes the Russo-Ukrainian War could bring about?

#### Revisionism is true – dissatisfaction with post-Soviet states, lack of international recognition, national identity

Milosevich 21 (Mira Milosevich is Senior Analyst for Russia and Eurasia at the Elcano Royal Institute for International and Strategic Studies and Associate Professor at the IE University, School of Global and Public Affairs; CSIS, July 8, 2021, “Russia’s Westpolitik and the European Union,” <https://www.csis.org/analysis/russias-westpolitik-and-european-union>; accessed 7/5/2022) ng

Russia is also a revisionist state for three main reasons. First, Moscow considers the agreements made with former Soviet states after the dissolution of the Union in 1991 unfavorable to Russia’s national interests and security. Second, the international order created and led by the United States after the end of the Cold War does not recognize Russia’s status as an equal power. And finally, 30 years later, a post-Soviet Russia has only begun to formulate a new national identity with a mixture of themes from its pre- and post-Soviet history, conforming to the borders and agreements with former Soviet republics that emerged after the disintegration of the common state. Throughout its history, Russia frequently debated its national identity, which was ambiguous due to its geographical location between Europe and Asia and its multiethnic composition. In some periods, including during the reign of Peter the Great (eighteenth century) and the period after the Napoleonic Wars, Russia looked West and embraced a European identity. But when it had problems with the West, as in the aftermath of the Crimean War (1853–1856), it stressed its Eurasian or Eastern identity, or its messianic role as a unique civilization and “unifying nation,” which exalts Russians as an imperial people with the sacred mission of creating a supranational state. In the 1990s, Russian political and intellectual elites considered five possible concepts of national identity: (1) “the unifying nation,” (2) “the nation of all East Slavs,” (3) “the nation as a linguistic community,” (4) “the nation as race,” and (5) “the civic nation.” None of these five concepts were fully accepted by Russian citizens, and today Russia is a state, but not yet a nation. This failure to find a new national identity has allowed Putin to impose his own definition, based on the demands of Russian nationalists and relying heavily on the idea of “compatriots abroad.” In 1992, Yeltsin introduced the term “compatriot abroad” (which was suggested by the analyst Sergey Karaganov) to refer to ethnic Russians who now found themselves outside the formal borders of the Russian Federation but had cultural and linguistic ties with Russia.2 The 1993 military doctrine of the Russian Federation held that the suppression of ethnic Russians in the near abroad represented a military threat to Russia. Already in the 1990s, several state programs were created to promote ties with compatriots in the near abroad, but it was the 2008 document Strategy 2020 (Strategia 2020) that emphasized that the interest and security of these compatriots would be militarily protected by Russia. Later that year, former Russian president Dmitry Medvedev justified Russian support to Russian separatists in Abkhazia and South Ossetia by connecting it with the right of Russia to protect its compatriots. Putin later used the same argument to justify the annexation of Crimea and support for pro-Russian rebels in eastern Ukraine. In July 2014, three months after the annexation of Crimea, he stated, “I would like to make it clear to all: our country will continue to actively defend the rights of Russians, our compatriots abroad, using the entire range of available means—from political and economic to operations under international humanitarian law and the right of self-defense.” The right of Russia to defend its compatriots in the former Soviet republics is the key element of the process of Russia’s re-imperialization. What alarms neighboring states is that Russian federal law defines the term “compatriot” in a very inclusive manner, enabling the Kremlin to consider virtually anyone with ties to Russia or the former Soviet Union as a “compatriot.”

#### It applies globally

Charlambides 6-26 (Yiannos Charalambides has studied Law and he is a Doctor in International Relations and European Studies. As a journalist he has been assistant editor in chief at “Simerini” (newspaper), senior political analyst and a war correspondent in Yugoslavia and the Middle East. Since 2004 he has been working as a political advisor in the European Parliament and he has been closely analysing the Cyprus problem, Euro-Turkish relations, international conflicts, European issues and particularly the economic crisis. 26 Jun 2022, “A Russian Revisionist Strategy on the Rise?” <https://doi.org/10.1080/09700161.2022.2076303>; accessed 7/5/2022) ng

The geopolitical arcs and ‘strategic pincers’ were the preludes of the Russian revisionist strategy which reflects in the ‘lightning military action’ launched by the Russian Army on 24 February 2022, bearing the code name: ‘Special Military Operation’. It was presented as a military response to NATO’s expansionist policy on Ukraine and therefore the entire Western World—namely the US, the EU, the United Kingdom, Canada, and Australia—faced the Russian operation as an invasion and a violation of the UN Charter and International Law. However, both the UN Security Council and collective security were paralysed by the Russian veto power while President Putin verified in practice what Clausewitz said,12 that war constitutes the continuation of diplomacy with the usage of other, military means. Taking into consideration Russia’s ‘modus operandi’ the question that should be answered is the following: What is the existing situation after the Russian military action in Ukraine? Firstly, Russia pursues to create a new state of affairs based on its revisionist strategy. As a result, no one can allege that such a policy is limited to the Ukrainian borders. On the contrary, it expands to the regions of Eastern and Northern Europe, the Caucasus Region and also reaches the Middle East. As to Europe, the minimum strategic aspiration of Moscow is to achieve the establishment of a joint security zone alongside Belarus and Ukraine. Secondly, if the Russian invasion of Ukraine aims to create a new state of affairs with an ‘imperial character’, why Moscow did not target the Baltic States, Romania and Bulgaria instead? Because in that case, the conflict between NATO and Russia would have been a direct one, with a scenario of a Pan-European and/or a Third World War falling into the sphere of real probability. Such a war case scenario can only be prevented either if the US, the United Kingdom and the EU show political compliance to the new state of affairs established by Russia or if the economic and political cost—resulting from the sanctions imposed by the Western World and a new type of military deterrence compel Russia to implement a compromising policy.

#### More examples

Koshkin 19 (Pavel Koshkin, Ph.D., Fellow of The Institute of U.S. and Canadian Studies at Russian Academy of Sciences, Former editor-in-chief of Russia Direct, an analytical media outlet, RIAC Expert; August 1, 2019, Russian International Affairs Council, “Russian Revisionism or Restoring Justice?” <https://russiancouncil.ru/en/analytics-and-comments/analytics/russian-revisionism-or-restoring-justice/>; accessed 7/9/2022) ng

The West’s fears may not necessarily have been justified, but they intensified after President Putin’s position became stronger in Russia. In the past, Russia’s possible revisionism would be mentioned – in fact, very rarely so – in classified U.S. National Security Council documents. Nowadays the West talks about it openly and frequently, and for good reason too: Moscow has been actively restoring its influence in the geopolitical arena since 2014. First Russia took over Crimea, and then it launched a military operation in Syria in 2015 while simultaneously attempting to restore its positions in the Middle East and actively negotiating with governments in the Gulf following a sharp drop in oil prices. In October 2017, the king of Saudi Arabia, one of America’s key Middle Eastern allies, paid a visit to Moscow. Since 2015, Putin has regularly held bilateral meetings with Mohammad bin Salman, the crown prince of Saudi Arabia: in Moscow, Sochi, St. Petersburg, and on the sidelines of the G20 summit. At least seven such meetings have been held to date, and Putin is planning to visit Riyadh in October 2019. In addition, Russia probably sees itself as a new mediator in the Palestine-Israeli settlement process. Putin has held at least eight meetings and three phone conversations with Palestinian President Mahmoud Abbas since 2014. Over the same period, Putin has spoken with Israeli Prime Minister Benjamin Netanyahu more than 40 times and held some 11 personal meetings with the Israeli official: mostly in Moscow but also once in Paris. According to Russian and international media, which quoted anonymous sources close to the Libyan authorities, the Russian Ministry of Defense, and British intelligence services, Russia opened a new foreign political foothold in October 2018 by sending troops to Libya in support of the field commander Khalifa Haftar, the head of the Libyan National Army. Haftar, who controls Libya’s eastern regions, had previously visited Russia and repeatedly met with senior Russian officials, including Minister of Defense Sergey Shoigu. In fact, Moscow supports the Libyan forces opposed to the UN Security Council-recognized Government of National Accord, which is headed by Prime Minister Fayez al-Sarraj. In 2019, Russia openly declared its interests in Venezuela, where the Juan Guaido-led, U.S.-backed opposition forces had attempted to depose President Nicolas Maduro, whose economic policy they believed to be untenable and destructive to the country. Indeed, Venezuela was living through a drastic economic and social crisis, with inflation going through the roof at 130,000%: the population found itself on the poverty line and took to the streets in protest. The U.S. and its allies (more than 50 West European and Latin American states) supported Guaido, who had declared himself the new president. Russia and China backed Maduro. Media reports emerged in March to the effect that 99 Russian troops had arrived in Venezuela. Washington then demanded that Moscow withdraw the troops. The Russian Ministry of Foreign Affairs replied that “the presence of Russian specialists on Venezuelan soil” did not contravene the Venezuelan constitution and strictly complied with the bilateral military-technical cooperation agreement that Moscow and Caracas signed in May 2001. The Russian and U.S. presidents have repeatedly discussed the Venezuela issue during telephone conversations and personal meetings; U.S. Secretary of State Mike Pompeo and his Russian counterpart Sergey Lavrov have also actively discussed this matter. In the meantime, Western journalists, experts, and politicians suggest that Venezuela is becoming yet another topic for the ongoing Moscow-Washington conflict, which is starting to resemble a new Cold War. Russian revisionism can be found even in Africa. Leading U.S. news outlets report that Moscow is strengthening its positions on that continent. Russia has been steadily expanding its military influence across Africa, alarming Western officials with investments in local mineral extraction and energy projects, increasing arms sales, security agreements, deployment of mercenaries, and training programs in support of local dictators, The New York Times reports. Bloomberg, for its part, says that Russian political advisors rig elections in African countries in favor of candidates that suit Moscow. Finally, the West is concerned about Russia’s Arctic activities. The New York Times cites NATO spokesperson Dylan White as saying that Moscow is bolstering its military presence in the Arctic. U.S. intelligence services suspect that Russia is conducting low-yield nuclear tests on Novaya Zemlya. “The United States believes that Russia probably is not adhering to its nuclear testing moratorium,” says Lt. Gen. Robert Ashley, Director of the U.S. Defense Intelligence Agency. Any Arctic move by Russia invariably causes concerns. The website of the TV channel Current Time points out that Russia has, since 2016, launched the nuclear-powered icebreakers Sibir, Arktika, and Ural: “Moscow has not built so many vessels of this class since Soviet times.” On the other hand, Russia sometimes offers a good reason for concern, and the West usually interprets Moscow’s statements in the context of possible aggression. Shoigu said in December 2017: “Over the past five years, 425 facilities with total area of 700,000 square meters have been built on Kotelny Island, Alexandra Land, Wrangel Island, and Cape Schmidt in the Arctic. They house over 1,000 troops complete with missionized weapons and equipment.” Shoigu added that Russia would continue its efforts to build “a full-blown airfield” on Franz-Josef Land that would be able to handle aircraft movements around the clock. The minister stressed that not a single country had previously managed to implement any such massive-scale military projects in the Arctic in the entire history of the region. By 2020, Russia is planning to complete construction on or modernize six military bases in the Arctic. In this light, it is quite understandable that the West treats such plans with suspicion, despite Shoigu’s assurances that Russia is “not rattling its saber and not intent on waging war against anyone.” However, the second part of his statement – “at the same time, we would not recommend anyone to test our defensive capacity” – sends a totally different message to the West: Russia is not intent on living with the old world power and will act based on its own national interests.

### putin is revisionist

#### Public statements about Ukraine proves Putin is revisionist

Serhan 2-27 (Yasmeen Serhan is a staff writer at The Atlantic. The Atlantic, FEBRUARY 27, 2022, “Who is Vladimir Putin’s Revisionist History For?” <https://www.theatlantic.com/international/archive/2022/02/putin-russia-ukraine-revisionist-history/622936/>; accessed 7/5/2022) ng

The evolution of Putin’s historical revisionism can be seen throughout his public statements over the years. In 2005, he famously described the collapse of the Soviet Union as the greatest geopolitical catastrophe of the 20th century. Two years later, Putin bemoaned the aftermath of the Soviet era and the pernicious, unipolar world—one led not by Moscow, but by Washington—that it had created. Last year, in perhaps the clearest articulation of his worldview, Putin said that Ukrainians and Russians are “one people—a single whole.” On Monday, he took that sentiment even further, declaring Ukraine to be “an inalienable part of our own history, culture, and spiritual space” whose independence was a product not of self-determination (Ukrainians resoundingly voted in favor of independence from the Soviet Union in a 1991 referendum), but rather “a mistake.” Unlike his 2014 address announcing Moscow’s annexation of Crimea, which was largely framed as a moment of celebration, this was an angry speech—one ostensibly designed to make Russia’s people angry too, and to justify what was to come. “In territories adjacent to Russia, which I have to note is our historical land, a hostile ‘anti-Russia’ is taking shape,” Putin said in another address ahead of the invasion. “For our country, it is a matter of life and death, a matter of our historical future as a nation.” It’s hard to know what Putin means by historical future (which is, on its face, an oxymoron), though we can take an educated guess. When Putin speaks of Russia today, he speaks of a country whose greatness is defined by its past—namely, its imperial history and its victory during World War II—which he believes must guide its present. “Putin weaponized history by giving it a function,” Orysia Lutsevych, the head of the Ukraine Forum at the London-based Chatham House think tank, told me. As far as the Russian president is concerned, “history is the fortune teller of the future.” Such historical narratives can be compelling, especially when they elicit the kind of nostalgic nationalism that has proved potent elsewhere, including in the United States (where Donald Trump’s Republican Party has dubbed itself the defender of “patriotic education”), India (where Hindu nationalists have appealed to pride in India’s past to undermine its secular present), and Hungary (where Prime Minister Viktor Orbán often invokes the territories the country lost after the First World War). “Putin is not the only person who is old enough to have felt that sense of deep, personalized humiliation and shame that came with the loss of power of the Soviet Union at the end of the Cold War,” Keir Giles, the author of ​​Moscow Rules: What Drives Russia to Confront the West, told me. “Anything that reasserts Russia as that great power with a greater status than others and the right to a global presence and global influence in others’ affairs will be popular in those sectors of the Russian population.” Still, it’s difficult to gauge just how big that sector is or how pervasive the narrative has been among those who don’t share Putin’s semi-mythological view of history. A recent CNN poll, published the day before the start of Moscow’s military invasion of Ukraine, found that though roughly half of Russians support using military force to prevent Ukraine from joining NATO, only 36 percent support doing so as a means of forcing a reunification of the two countries. The lack of support for the latter was most clearly evidenced by anti-war protests that have broken out across Russian cities. When I spoke with Denis Volkov, the director of the Moscow-based Levada Center, Russia’s last independent pollster, in early February, he told me that though the majority of Russians fear war, few would feel comfortable voicing opposition to it if it came due to fear of reprisals. Indeed, more than 1,700 arrests have already been made. Besides, Volkov said, “public opinion will be no limit to the Russian government.” Though Putin may feel obliged to justify his war of choice to the Russian people, who with Ukrainians will share the costs of a bloody and drawn-out conflict, his revisionist history is designed to appeal to no one more so than himself. By restoring Russia’s control over its former territories, Putin not only corrects what he sees as a historic wrong but also cements his place in Russian history as the leader who restored the country to its rightful status. The irony is that in his quest to make Russia great again, he risks achieving just the opposite. Invading Ukraine has already resulted in wide-ranging sanctions and has all but ensured Russia’s diplomatic isolation. Even Putin’s friends in Europe, such as Orbán and Czech President Milos Zeman, have gone out of their way to reiterate their support for Ukraine and their commitment to a joint European Union stance. “Putin’s views have become more and more extreme over time to the point where they are now more or less unrecognizable and have few points of contact with history as it’s understood in the outside world,” Giles said. “He’s operating in a different plane of reality and in a different century.”

### at: neorevisionism

#### Neorevisionism is wrong

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The ‘defensive Russia’ perspective is not entirely convincing either, for at least three reasons. First, the claim that Russia is a staunch defender of principles like state sovereignty and non-interference in internal affairs is problematic. Granted, Moscow consistently emphasizes these norms in official policy documents and promotes them in diplomatic forums. In practice, however, Russia has violated such principles repeatedly within the post-Soviet space. Examples are Russia’s takeover of Crimea, its meddling in south-eastern Ukraine, and its longstanding support for separatist regions in Georgia (Abkhazia and South Ossetia) and Moldova (Transnistria). As Lo (2015, pp. 71–72) rightly remarks, ‘there is a stark disconnect between its [Russia’s] formal allegiance to the “primacy of international law” and the territorial integrity of nation-states, and a highly selective approach toward implementing such principles.’ Likewise, Bolt and Cross (2018, p. 30) note that, ‘while Russia professes to champion sovereignty and non-intervention as standards for the world order, these guidelines somehow do not apply to Moscow’s own behaviour in its immediate neighbourhood.’ In other words, there is a gap between Moscow’s rhetoric and actions, which does not square with the ‘defensive Russia’ perspective. Second, it appears questionable whether Russia’s assertive foreign policy is a natural and almost automatic response to aggressive encroachments, both normative and geopolitical, from Western powers. For example, it is highly debatable whether Russia’s takeover of Crimea was a pre-emptive move, as some claim, to block NATO from establishing a naval base there (for contrasting views, see Milne, 2014, March 5; Motyl, 2015). Likewise, there was little risk that NATO would offer post-Yanukovych Ukraine a Membership Action Plan. According to then-Russian President Medvedev’s own account, the alliance seemed to have understood the dangers of eastward enlargement and given up on it after the 2008 war in Georgia (Reuters, 2011). The financial crisis of that same year and the ensuing Greek debt crisis further contributed to enlargement fatigue among many EU member states. Consequently, there was little prospect for Ukraine (or any other post-Soviet state, for that matter) to join either of these two organizations in the short to medium term. Moreover, European militaries had downsized since the end of the Cold War, while the US was engaged in its so-called pivot to Asia. If anything, the direct threat posed by NATO to Russia was therefore dwindling. Against this background, it is difficult to interpret Moscow’s takeover of Crimea and activities in eastern Ukraine as a purely defensive response to external pressures. Thirdly, it is unclear why the West – and not Russia – should adjust its status ambitions and policies. As Freire (2011) demonstrates, Russia is a status overachiever relative to the power resources (economic, demographic, and military) that it controls. This means that Russia punches above its weight and occupies an extremely prominent position in world politics – at least in comparison to other countries with a roughly equal amount of material capabilities such as Japan, Brazil, or India. None of these countries is a permanent member of the UN Security Council, for example. This raises the question of how many great-power privileges must Russia be granted before its outsized status ambitions are satisfied. More generally, it is questionable whether the creation of a modern-day concert of great powers, similar to the Concert of Europe in the second half of the nineteenth century, is possible or even desirable. As Rynning (2015, p. 552) observes, not only is concerted power in Europe unlikely, but its pursuit could be dangerous in so far as it could herald the type of unrestrained or flexible balance of power politics that presaged the great wars of the twentieth century. Kagan (2017) likewise asserts that, a return to spheres of influence would not calm international waters. It would merely return the world to the condition it was in at the end of the nineteenth century, with competing great powers clashing over inevitably intersecting and overlapping spheres. In essence, both the policy prescriptions derived from the ‘defensive Russia’ perspective and its explanations of Moscow’s international conduct require some elaboration.

## no

### allison 20 ev

#### Russia is not revisionist – but even if it was it doesn’t have goals to permanently challenge the US-led order

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Scholarly references to Russian revisionism as a general category tend to favour or dispute the core claim of official Western statements that in some sense Russian foreign policy is regressing, even recidivist. In other words it has departed from some normative consensus about core principles and rules of international order and more specifically the post-Cold War European territorial settlement, in favour of reliance on force and coercive diplomacy. This claim is found, for example, in the 2015 National Military Strategy of the US Joint Chiefs of Staff identified Russia among ‘revisionist states’, which ‘seek to revise key aspects of international order and to act in a way that threatens our security interests’.1 Former US NATO deputy secretary general Alexander Vershbow expresses this charge concisely, in arguing that by annexing Crimea, waging an undeclared war in Eastern Ukraine and occupying regions of Georgia ‘Putin’s Russia has torn up the international rule book and firmly established itself as a revisionist power’ (Vershbow 2018). Different theoretical standpoints influence academic responses to this notion of revisionism. Assuming an unabashed neo-realist perspective, Mearsheimer refutes the assumption that Russia is at all regressive, rather it has just behaved the way great powers do when their core strategic interests are threatened - for Russia, this happened in Ukraine (Mearsheimer 2014). This position is refuted by liberal claims that regime survival and contesting democracy are the key rationale behind Russian foreign policy. This liberal perspective often coexists with the claim that if the only role Russia can conceive of is an imperial one, as a former empire ‘then it is a revisionist threat to its neighbours’ (Speck 2017, pp. 13-16). Social constructivists, who emphasise the role of status, have argued on other lines. For Clunan (writing well before the Ukraine crisis) ‘Russia is not a revisionist power seeking to challenge the United States and the West and create a non-Western international order’. Instead, ‘Russia seeks to join the West but in a manner that allows its leaders to maintain national self-esteem in the eyes of Russian political elites, primarily through Russia’s involvement in the management of global affairs’ (Clunan 2009, p. 220). While the notion of Russia joining the West seems no longer persuasive for our period of study, a more recent constructivist study argues like Clunan that that ‘accommodating Russia’s status aspirations will not embolden it to pursue more radical revisionism’. It characterises Russia instead as a ‘reactionary challenger’, in the sense of seeking ‘a return to the status quo ante’. Russia would like to see ‘the return of multipolarity enshrined in a Great Power Concert’, which would entrench Russia’s position as one of the leading states in the international system – even as its relative power continues to decline’ (Krickovic, 2018, pp. 5-6). Constructivist claims that Russia is seeking an enhanced international role, although one associated with an earlier time period, share some ground with scholars who describe Russia’s approach to international rules and law as ‘neo-revisionism’. Sakwa adopts this term to argue that in Ukraine, Georgia and elsewhere, Russia has engaged in some selective revisionism, but is ‘far from being a genuine revisionist power, dedicated to transforming the basis of world order’. For him Russia does not seek to change the principles of international law, but how it is practiced by Western states. Until 2012, he claims, Moscow’s goal was to revise the system from within as a status quo power. After that, despite its neo-revisionism, Moscow still positioned itself as a ‘norm-enforcer’, rather than ‘norm innovator’, tilting against American ‘hegemonism’ and its practices. Sakwa claims Russia seeks to adhere to the existing UN-centred framework of international society ‘while carving out space for its own normative world order at the regional level (Sakwa 2017, pp. 104, 128-31). The Russian scholar Romanova applies the same neorevisionist label to Russian conduct. She argues that ‘Russia seeks to transform the global order so it accommodates its views and concerns better, but does not attempt to replace it with a completely new set of rules’. Citing official Russian documents she claims that Russia justifies its actions with the existing order’s normative frameworks, reproaches the West for inconsistency in observing the letter of international law and tries to become part of the governance structures with the same right to interpret core norms as the United States (Romanova, 2018, pp. 77-78, 81). This neorevisionist argument - the image of Russia as a status quo power, drawn into qualified revisionist actions in reaction to the earlier Western practice of liberal interventionism and concerns about Moscow’s agency in interpreting international law and norms - seems to depend on what emphasis is given to the crucial case of Crimea. Is a Russian effort to carve out space for a separate normative world at the regional level, as Sakwa suggests, a secondary issue in evaluating Russian attitudes to international order? Other scholars on the politics of international law emphasise instead the foundational challenge to post-war international order posed by Russian efforts to justify territorial annexation and enlargement through force. They argue that a core difference exists in terms of rules between the Ukraine crisis and earlier Russian-Western controversies - over Kosovo (1999), Iraq (2003) and Libya (2011) (Grant, 2015; Mälksoo, 2015, pp. 172-84). For all their international controversy, the official debate round the latter was accompanied by a recognisable legal language and arguable justifications, often around developing if unconsolidated norms or efforts to stretch the bounds of customary international law. In contrast, much of the Russian justificatory discourse over Crimea moved quite beyond the legal domain, for example in citing ‘historic justice’ (Allison, 2014, pp. 1258-68; Grant, 2015). It is this, accompanied by some Russian calls for new rules, which has raised the question whether Russia has aimed to redefine core international legal principles, a form of legal revisionism. Taking into account the radical Russian quasi-legal rhetoric over Crimea, the notion has been proposed of the CIS region as a zone of legal exceptionalism in Russian thinking. This could be consistent then with Moscow’s projection of itself as a stalwart defender of traditional rules on the use of force, ‘old rules’, around the Syrian conflict and in wider international relations (Allison, 2017, pp. 528-31, 536-40; Allison, 2013, pp. 120-49). In fact preliminary research, as elaborated below, indicates that there has been no sustainable post-2014 Russian effort to develop new legal interpretations over Crimea. Moscow has not seriously tried to shift understandings of customary international law more generally, nor have other states been at all ready to accede to such changes (Allison, 2017, pp. 531-4, 542). This article seeks first to confirm such previous research on the Russian approach to rules, by examining the period 2016-19. This period was defined by the continuation of lowintensity conflict involving Russia (despite its denials) in eastern Ukraine, but also by the American presidency of Trump, whose concern about Russia’s rule-breaking has been uncertain. Secondly, it seeks to substantiate and elaborate a previous research proposition that a major function of contemporary Russian legal discourse is to instrumentalize such normative language. This strategic effort is broadly captured by the concept of lawfare (Allison, 2017, 534-5; Kittrie, 2016).

### public statements

#### Legal discourse proves

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Russian legal discourse is expressed in the context of various officially endorsed narratives which predate the acute controversy since 2014. First, Moscow has long levelled charges that Western states are the ones revising and unravelling rules in the international system. Putin has repeatedly criticised Western interventions, citing Russia’s traditional UN Security Charter-focused ‘restrictionist’ interpretation of the lawful use of force by states (despite Russia’s forceful dismemberment of the Georgian state in 2008).2 Secondly, and crucially, narrative Western influence it is claimed was augmented unjustly at Moscow’s expense during a period of temporary Russian weakness in the 1990s. For Moscow, Western states and the ‘hegemonic’ order they have pursued in the post-Cold War era are revisionist and Russia in contrast, increasingly championing the ‘nonWest’, is the fulcrum of international stability. Russia regards its determination to progressively restore aspects of the status quo ante (though not the full scope of Soviet influence) not as revisionist, but as recovering a natural balance in Russian power relations in a concert of several major powers. It reaffirms Russia’s rightful trajectory of power in the wider system of states, codified all along by Moscow’s continued UN Security Council membership. It also reinvigorates Russia’s underlying, preordained role in Europe - an expression of Russia’s enduring great power status. In this way a core structural claim, bolstered by an identity narrative, underpins the dictum favoured in Moscow that Russia is a ‘rule-maker rather than a rule-taker’. So Foreign Minister Lavrov has scorned the ‘discourse on “revisionism”’ as based ‘on the simple and even primitive logic that only Washington can set the tune in world affairs’. He rejects those ‘who believe that Russia is doomed to drag behind, trying to catch up with the West and forced to bend to other players’ rules’. This inference of ‘Western rules’ accompanies claims by Lavrov about the declining influence of the ‘historical West’, and Russia’s shared approaches with ‘most countries of the world, including our Chinese partners, other BRICS and SCO nations, and our friends in the EAEU, the CSTO, and the CIS’ (Lavrov, 2016). This portrays Russia as a stabilising pole at the centre of a strong normative and political coalition of states. This brings us to Russian discourse more specifically on rule-making. Has Russia aimed since 2014 at legal revisionism – that is an attempt to sustain a campaign against a ‘Western’ international legal order, beyond the standard Russian criticisms about the human rights project of liberal states and a longstanding controversy over unconsolidated norms on humanitarian intervention?. In the aftermath of the Crimean annexation Putin implied that Russia was indeed ready to tolerate, or even sustain, significant disruption in the international legal order. He described the choice of living ‘without any rules at all’ as ‘entirely possible’ at the Valdai Club session in October 2014, which had taken the theme ‘The World Order: New Rules or a Game without Rules’.3 However, no other major state would support such legal nihilism. Perhaps anticipating this, the formal Russian position since 2014 has been to cast itself as an indispensable ‘rule-maker’, rather than anarchic influence on international legal regulation or general disrupter. Putin has even been tempted to grandstand against the West under a legal banner, claiming ‘if there is an area where Russia could be a leader – it is in asserting the norms of international law’.4 In this spirit Lavrov quoted the Russian philosopher Ivan Ilyin that ‘a great power is the one which…introduces a creative and meaningful legal idea to the entire assembly of the nations, the entire “concert” of the peoples and states’. In agreement, Lavrov portrayed Russia as a potential pioneer in crafting international law (Lavrov 2016). This kept the door open for some effort a legal revisionism. However, since 2014 Russia has failed to advance any such big legal idea to the international community since 2014. It has not even sustained an effort to revise customary international law to support the various weak arguments it offered to justify the annexation of Crimea (see below). Moscow retreated instead to core principles associated with legal positivism. So the Russian Foreign Policy concept approved in December 2016 enjoins Russia to uphold generally recognised rules of international law embodied in the UN Charter 5 (Likhachev, 2017, pp. 157-9). In line with this Russian legal analysts reinforced a highly traditional focus on sovereignty, one which well precedes the Charter. In the words of one, ‘it is necessary to establish order and restore the principles existing since the Peace of Westphalia’, that ‘international law should serve the interests of equal sovereign states’6 This resurgence of traditionalism does not fit an image of Russia as the standard- bearer of new rules. Indeed, when asked specifically at the end of 2017 whether Russia should develop new rules to regulate the emerging ‘multipolar world order’, Lavrov affirmed that ‘this does not seem to me to be necessary’. In his view this multipolar order, in the form of the G-20, the BRICS states or Putin’s Greater Eurasia project, would develop through ‘natural processes’.7 However, this position was accompanied by uneasiness that the legal basis of a new multipolarity was slow in coming. The Chairman of the Russian Constitutional Court, Valery Zorkin, described law as playing an important role ‘in building a unipolar world order’, arguing that ‘gradually, through the efforts of an enterprising and aggressive leader (the United States), a system of norms, rules of thumb and priorities emerges, which can hardly be called “the law”’. Therefore Zorkin has been at the forefront of efforts in Moscow in 2015 at judicial change (see below) to prevent the subordination of Russian national laws, let alone the Russian constitution, to international laws (Klishin, 2016). Whatever the benefits Putin may have hoped from a Trump presidency, Russian rhetoric on the theme of Western manipulation of the rules continued unabated. If anything it took on more vigour, as Trump showed growing disdain with his America first rhetoric for constraints on American sovereignty. For example, in early 2019 the Russian Foreign Ministry accused Washington of ‘steps to dismantle the system of international law and to force a certain rules-based order on the world, formulated by them in accordance with their immediate foreign policy needs’.8 Here rules-based is contrasted to the operation of law; by implication if Russia disavows such rules it rejects their binding quality. Later that year, just before a G20 summit, Putin lamented that during the Cold War ‘there were at least some rules that all participants in international communication more or less adhered to or tried to follow’, but ‘now it seems there are no rules at all’.9 This reprised his rhetoric at Valdai almost five years previously. This cynical approach leaves the question what Russia has expected from its extensive discourse of legal argumentation since 2014.

### neo revisionism

#### Revisionism does not explain Russia’s aggressive behavior – aggression is defensive and reactionary

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Russia has returned as an international conservative power, but it is not a revisionist one, and even less is it out to subvert the West. Russia certainly looks for allies where it can fnd them, especially if they advocate the lifting of sanctions. When Macron (2019) argued that it was time to bring Russia out of the cold, arguing that ‘We cannot rebuild Europe without rebuilding a connection with Russia’, his comments were welcomed in Moscow, although tempered by a justifable scepticism. The Putin elite had earlier welcomed Trump’s election, but in practice relations deteriorated further. The foreign policy establishment is deeply sceptical that the EU will be able to act with ‘strategic autonomy’. Above all, Russo-Western relations have entered into a statecraft ‘security dilemma’: Currently, we are again faced with a situation in which mutual intentions are assessed by Washington and Moscow as subversive, while each side considers the statecraft employed by the other side as efective enough to achieve its malign goals. At the same time, each side is more sceptical about its own statecraft and appears (or pretends) to be scrambling to catch up (Troitskiy 2019). In the nineteenth century, Russia became the ‘gendarme’ of Europe, and while Putin repudiates the country assuming such a role again, Russia has undoubtedly returned as an international conservative power. Maintenance of a specifcally historically determined defnition of the status quo is the essence of its neo-revisionism: a defence of traditional ideas of state sovereignty and of an internationalism structured by commitment to the structures of the international system as it took shape after 1945. Russia resents its perceived exclusion from the institutions of Atlantic dominion (above all NATO); but is not out to destroy the international system in which this competition is waged. Thus, Anton Shekhovtsov (2017) is mistaken to argue that Russia’s links to right-wing national populist movements are rooted in philosophical anti-Westernism and an instinct to subvert the liberal democratic consensus in the West. In fact, the alignment is situational and contingent on the impasse in Russo-Western relations and thus is susceptible to modifcation if the situation changes. Moscow’s readiness to embrace Trump in 2016 when he repeatedly argued that it made sense to ‘get on’ with Russia indicates that Western overtures for improved relations would fnd the Kremlin ready to reciprocate. In 2017 the Kremlin sent Washington various ideas on how to move out of the impasse in US-Russian relations, but given the ‘Russiagate’ allegations, the White House was in no position to respond. The same applies when in 2019 Russia was invited to resume full voting rights in the Parliamentary Assembly of the Council of Europe (PACE), which the Kremlin embraced even though powerful domestic neo-traditionalist and Eurasianist voices counselled against. Russia is not out to subvert the West but seeks to change it. For the defenders of monist enlargement, this is just as bad. Resistance at home and abroad to the post-Cold War Western order has exposed unexpected fragilities and insecurities, hence the turn to the language of ‘resilience’ (for example, EU Global Strategy 2016). Given its strategy of resistance, Russia in turn becomes the object against which resilience is tested, becoming one of Federica Mogherini’s ‘fve principles’ (2016), creating yet another barrier to normal diplomatic relations. In fact, the structural model outlined in this paper suggests that Russia does not seek to create a greater Russia through subversion let alone physical enlargement, although all leaders since the end of the Cold have tried to make the country a great power. This raises the fundamental and still unresolved question: is Russia still interested in joining a transformed West? Or has it realised that the only way to retain great power status and sovereign decision-making is to remain outside the West? Joining the transformed West meant the attempt to create a ‘greater Europe’, what Gorbachev had earlier termed the common European home. For defenders of the existing West, this is perceived as threatening its existing values, norms and freedoms, and perhaps more importantly, also the existing hierarchy of international power; but for Russia, it is a way out of the perceived geopolitical impasse and ofers a common developmental strategy. The West is faced by a choice ‘between containment and engagement on mutually agreed terms’ (Trenin 2016, p. 110). Incompatible understanding of the political character of the historical epoch provokes an intense barrage of propaganda from all sides, with mutual allegations of political subversion and interference. The interaction of hegemony and dominion on the one side and multiple layers of identity on the other provides fertile ground for incomprehension and the attribution of sinister motives, provoking the statecraft ‘security dilemma’ identifed above. Russia maintains a neo-revisionist critique, but this does not mean repudiating improved relations with a post-dominion West. The country increasingly pivoted to the East and strengthened its alignment with China, but this does not mean that Russia seeks an irrevocable break with the West (Monaghan 2019). This is why it seeks improved relations with the EU and the USA if a satisfactory formula for restored contact can be found. Moscow’s support for insurgent populist movements in Europe and disruptive forces in America will always be tempered by larger strategic concerns and are certainly not unequivocal. The greater Russia envisaged by the Kremlin elite is one whose sovereignty is defended and whose great power status is recognised, but it is not one that seeks more territory or to subvert the West and sow discord. The West can be trusted to do that without Russia’s help. The West’s response to Russia’s neo-revisionism has been neo-containment and counter-subversion strategies, but if the analysis proposed in this article has any validity, then new forms of engagement may be a more productive course.

#### Fundamentally is not seeking to change the international order

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We are now in a position to assess whether Putin really is out to subvert the West, as suggested by the US intelligence community, much recent commentary and numerous strategic and doctrinal statements. The ‘black legend’ charge underlies the Russiagate allegations of Russian interference in the 2016 US and other elections. Such accusations are based on the view that a fundamental gulf has opened between the worldviews of the Russian leadership and the Western community. There are some grounds to argue that this is the case, although this needs to be placed into the broader framework of the evolution of Russian foreign policy since the end of the communist era and into the theoretical context of how Russia sees the international system, as described earlier. Above all, as the historic West moved into an era of expansive ‘hegemonism’, Russia (and China) were inevitably categorised as hostile nations. They had the motive and heft to fght back. Lavrov (2019) condemned the way that the ‘rules-based order’ substituted for international law, while the expanded institutions of dominion encircled both countries. Challengers to the radicalised liberal world order become subversive by defnition. Russia is a challenger power but it is not insurrectionary. In other words, it is far from the Soviet position of seeking to advance the ideology of revolutionary socialism, of which ‘active measures’ were one of the most specifc manifestations. Further, Russia is not a revisionist power out to destroy the foundations of the international system as it has taken shape since 1945, but it is neo-revisionist, challenging the practices of the US-led Atlantic order within that system. As a conservative status quo Russia fnds itself challenged by the radicalisation of the historic West that it had hoped to transform at the end of the Cold War. Concurrently, Russia’s identity as a great power means that it resists the dominion element. It could live with the more modest liberal hegemony of the Cold War years (and in fact, one of the layers of Russia’s foreign policy identity still wants to join it), but the combination of radicalised hegemonic universalism and the expansive logic of the power system rendered dominion unacceptable. Russia condemns the Atlantic system for its revolutionary radicalism, manifested in what is perceives to be Western revisionism. Russia thus fnds itself divided from the historic West on a range of policy issues, but not ultimately by commitment to the post-1945 international system. This is why Moscow welcomed Trump’s post-Atlanticist declarations, since he ofered an alternative to the neo-conservative militarism and democratic interventionism of the post-Cold War era. Shackled by Russiagate, Trump was not able to deliver much and in fact the sanctions regime and other forms of neo-containment were intensifed. In this context, six observations can help us examine the problem of greater Russia and subversion. First, it is misleading to see direct continuity between the USSR and Russia. Russia no longer embodies an alternative ideology and is in fact a status quo power in both ideational and territorial terms. Russia is also comparatively far less powerful. If at its peak in the early 1970s Soviet GDP reached 58 per cent that of the USA, today Russia’s at most is ten per cent of America’s. Russia’s defence spending in 2019 was the fourth largest in the world, but at $65 billion this is less than a tenth of the USA at $732 billion (38 per cent of total global military spending) and less than a quarter of China’s $261 billion (SIPRI 2020). Cold War patterns have been restored, but the dynamics of this confrontation are very diferent even though some of the procedural rituals of mutual excoriation have returned (Monaghan 2015). However, Russia does claim to represent an alternative to the historical West in three ways: as the defender of conservative sovereign internationalism, where states interact on the basis of interests, although norms are far from repudiated; as a socially conservative civilisation state with societal dynamics of its own (Coker 2019; Tsygankov 2016); and as a European power with a stake in creating some pan-continental framework, while at the same time advocating the establishment of some sort of greater Eurasian unity.

### threat exaggerated

#### The threat is exaggerated and driven by the desire for defense spending – assumes Ukraine

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Since the collapse of the Soviet Union in 1991, the mainstream media have supported government efforts to “scare the hell out of the American people,” and convince Americans that only increased defense spending could deal with the multi-front threat that includes international terrorism; “Islamo-terrorism”; Russia; and China. The exaggeration of the Russian/Soviet threat began in the last days of WWI when the United States joined European countries and Japan in occupying Russian territory to defeat the Bolsheviks. For 16 years, the United States refused to recognize the Soviet Union; fortunately, President Franklin D. Roosevelt reversed that policy, which contributed to the eventual Soviet-American alliance that defeated the Nazis. With the start of the Cold War at WWII’s end, successive U.S. administrations demonized the Soviet Union. Also, remember the “bomber gap;” the “missile gap;” and even the “intentions gap,” a creation of Harvard Professor Richard Pipes, who argued that Soviet leaders believed they could fight and win a nuclear war? The intelligence community often cooperated with the efforts of the White House to exaggerate the Soviet threat. The worst period of all was the 1980s, when the Soviet Union was on its path to dissolution, but found the Central Intelligence Agency and the Defense Intelligence Agency supporting the myth of the Soviet Union as a superpower. In the 1980s, the DIA produced an annual compendium of Soviet weaponry that was a completely politicized product issued at an unclassified level to influence political and public opinion. CIA deputy director Robert Gates created fictions regarding Soviet strategic weaponry in order to justify President Ronald Reagan’s Star Wars program. Gates was totally wrong about the Soviet threat, and he made sure that CIA’s finished intelligence was also wrong. The exaggeration of the Russian threat, and the additional problem of dealing with China, has led to record-setting defense budgets with no sign of easing the burden. We are the most active military force in the world; the leading provider of arms to the world; and the only nation capable of projecting power anywhere in the world. Russia has two overseas military bases, and China has one. The United States has over 700 bases and facilities around the world. No major power has the geographic advantages of the United States with its secure borders north and south, and the security of oceans east and west. Very few appropriations attract bipartisan support, but nothing garners bipartisan support like the defense and intelligence budgets. We spend more on defense and intelligence than the entire global community. The United States has an Air Force and a Navy that dominate the skies and the seas. A former chief of naval operations conceded that the United States enjoys a “degree of overmatch (with any potential adversary) that is extraordinary.” The Air Force has spent billions of dollars on advanced aircraft, such as the B-1 bomber, the F-22 fighter, and the F-35 fighter that have never been deployed in combat. The final F-22 rolled off of Lockheed Martin’s assembly line in 2012 at a cost of $153 million. In 1988, Lockheed Martin executives told congressional committees that the cost of the F-22 would be $35 million per plane. The redundancy of the U.S. military services never receives serious attention from the Congress. The Navy has its own air force, its own army (the Marine Corps), and its own strategic weapons. It is equal in size to all the navies of the world combined with a subordinate organization, the Coast Guard, which represents the world’s seventh-largest fleet. The Marines haven’t conducted an amphibious operation in more than seven decades, but still garners massive support in the budgetary process. Meanwhile, there is no other nation in the world that has such a Corps in terms of numbers and capabilities. Defense spending and procurement are rarely related to actual threats that the United States faces or is likely to face. Too often, moreover, we allocate billions of dollars for weapons systems to counter enemy systems that never got out of the design stage. The Virginia-class submarine, designed to counter Soviet attack and nuclear-launch submarines, is a case in point. The Zumwalt-class destroyer is a naval combatant designed to fight mid-ocean battles that no other nation is preparing to initiate or fight. There are the costly weapons systems, such as aircraft carriers, that have lost much of their strategic utility because of China’s success in developing anti-ship missiles. Tens of billions of dollars could be saved by cutting naval platforms without any risk to U.S. national security. There would be associated savings in personnel and maintenance costs as well. Congressional delegations will resist cuts in any program, however, typically appropriating greater funding than either the Pentagon or the White House requested. States such as Connecticut and Virginia view naval construction as public works projects for their states. Even California’s liberal representatives protect the interests of California-based Lockheed Martin, and Lockheed Martin ensures its own success by manufacturing components for its aircraft in nearly every state in the union. In view of the F-16 and the F-22, there was no need for the F-35, particularly in view of U.S. air superiority that finds only one U.S. aircraft lost to the enemy over the past 45 years. Even the late Senator John McCain, who rarely met a weapons system that he didn’t love, referred to the F-35 program as a “train wreck.” It should come as no surprise that Lockheed Martin is the top donor to members of the House Armed Services Committee. We are essentially waging an arms race with ourselves. As President Dwight D. Eisenhower warned: “Every gun that is made, every warship launched, every rocket fired signifies, in the final sense, a theft from those who hunger and are not fed, those who are cold and not clothed. This world in arms is not spending money alone. It is spending the sweat of its laborers, the genius of its scientists, the hopes of its children.” There is nothing more wasteful than the $2 trillion currently earmarked over the next several years for the modernization of strategic nuclear forces and strategic defense systems. Offensive strategic nuclear weapons have no utility, and defensive strategic weapons don’t work. Eisenhower would have deplored a recent presidential administration that had a retired four-star general as the secretary of defense; two three-star generals as national security advisers; a retired Marine general as director of homeland security and then White House chief of staff; and general officers serving as directors of national intelligence. There is an American tradition to place military veterans in high political office, but the over reliance on general officers contributes to the threat exaggeration that dominates U.S. thinking in international security.

### at: revisionism

#### Revisionism is wrong

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To begin with, there are a number of reasons to be sceptical about the ‘revanchist Russia’ perspective. First, it adopts an overly deterministic position, which negates the open-ended character of history by underlining its predetermined course through certain ‘iron laws’ and the supposedly unchanging ‘essence’ of Russia. In so doing, this perspective effectively denies the role of individual agency: Whoever the leader is, or whatever the regime may be, Russians are subordinate to the quest for imperial greatness. This is a view that incidentally dovetails with that of extreme Russian nationalists, who see Russian history in similar holistic terms of a ‘single stream’ that connects Ivan IV, Peter the Great, Stalin, and Putin. However, Russia has experienced tremendous upheavals throughout history that dramatically changed its society and its relations with the outside world. This happened often at the instigation of one or a few individuals. Both the beginning and the end of the Soviet Union, for example, serve as powerful reminders of the role agency plays in affecting Moscow’s internal and external affairs. Furthermore, essentialist claims about Russian identity do not offer much insight into the dynamics of Moscow’s approach to the liberal international order, which has significantly fluctuated over time (Tsygankov, 2016). Second, Russia’s revisionist behaviour should not be exaggerated. Its intervention in Ukraine has remained relatively limited, as has its military activity in other post-Soviet states (Götz, 2016, p. 9). In fact, the scope of Russia’s revanchist aims is a matter of debate. It is doubtful whether Moscow has a blueprint for an alternative international order with different norms and principles than the current one. Nor does its promotion of conservative authoritarianism seem to constitute a genuine agenda. As Lewis (2016) writes, ‘the export of conservative social and political values (…) has so far not developed into a coherent campaign, but remains a rather ad hoc and inchoate critique by Russian politicians of “multiculturalism”, LGBT rights and “political correctness” in Europe.’ Furthermore, the ‘revanchist Russia’ perspective is unable to account for the numerous instances in which Moscow has adhered to the norms, rules, and institutions that are associated with the existing liberal order. While it might be a stretch to describe Moscow as a consistent defender of multilateralism (Lo, 2015), it has supported frameworks such as the 2015 Iran nuclear deal. It also acceded to the World Trade Organization in 2012 – after 19 years of talks – and continues to be a member of the European Court of Human Rights. The liberal goals and supranational methods of these institutions hardly fit with a revisionist imperial agenda. Third, Moscow’s behaviour is much more in line with that of an ordinary great power than the ‘revanchist Russia’ perspective makes it out to be. For one thing, Russia is by no means unique in its quest to establish a zone of influence in its near neighbourhood. As Carpenter (2017, January 19) points out, Russia is hardly the only country to regard the [sphere of influence] concept as important for its security. Or do U.S. officials believe that Chinese actions in the South China Sea, Turkey’s policies towards Iraq and Syria, and Saudi Arabia’s actions in Bahrain and Yemen do not involve such a consideration? For another, interference in the domestic affairs of other states is something of a habit for great powers. Whether they are democratic or authoritarian does not seem to make a difference in this regard. The United States, for example, has a long track record of meddling in the internal affairs and electoral processes of other countries (Levin, 2016). It is therefore unlikely that a more democratic Russia will substantially change its key foreign policy objectives and activities. Furthermore, the discrediting of Russian concerns over NATO enlargement as an ‘imagined’ threat, rather than a ‘real’ one, misses the mark. Any international relations scholar worth their salt knows that uncertainty about others’ intentions is central to security dilemma dynamics. Thus, Moscow’s fears should not be brushed aside as idiosyncratic Russian paranoia. In conclusion, it seems fair to say that the ‘revanchist Russia’ perspective faces an array of explanatory challenges and shortcomings.