## 1NC – DA

#### Democracy’s on the brink – control of information will determine its fate

Nye 18 [(Joseph, Distinguished Visiting Fellow at the Hoover Institution, University Distinguished Service Professor Emeritus and former dean of Harvard’s Kennedy School of Government, PhD in political science from Harvard) “Protecting Democracy in an Era of Cyber Information War,” Hoover Institution, 11/13/2018] JL

Today, in the face of successful Chinese control of what citizens can see and say on the Internet and Russian use of the Internet to interfere in the 2016 American election, the United States (and allied democracies) find themselves on the defensive. The expected asymmetries seem to have been reversed. Autocracies are able to protect themselves by controlling information flows, while the openness of democracies creates vulnerabilities that autocracies can exploit via information warfare. Ironically, one cause of the vulnerabilities has been the rise of social media and mobile devices in which American companies have been the global leaders. Citizens voluntarily carry Big Brother and his relatives in their pockets. Along with big data and artificial intelligence, technology has made the problem of defending democracy from information warfare far more complicated than foreseen two decades ago. And while rule of law, trust, truth, and openness make democracies asymmetrically vulnerable, they are also critical values to defend. Any policy to defend against cyber information war must start with the Hippocratic oath: first, do no harm.

The use of information as an instrument of conflict and manipulation in international politics has a long history. Britain manipulated information to move American opinion in the direction of war with Germany both in 1917 and 1941. The United States and the Soviet Union both used broadcasts, covert organizations, and funds to interfere in foreign elections during the Cold War.3 And more narrowly, in battlefield situations in Iraq or in the campaign against ISIS, information was an important tool. In recent years, Russia’s hybrid war against Ukraine has encompassed both cyber attacks and manipulation of information. Information operations are a critical component of modern warfare.4

Russia has used propaganda to express preferences for candidates in American elections since at least 1964, but new technologies have amplified their impact enormously.5 According to former CIA Director Michael Hayden, Russian interference in the 2016 election was “the most successful covert influence campaign in recorded history.”6 For example, Russian operatives used Facebook to publicize 129 staged events, drawing attention of 340,000 users; 10 million people saw ads paid for by Russian accounts; and 126 million Americans saw posts by 470 accounts affiliated with the Russian Internet Research Agency.7 A study by Twitter reported that 50,000 Russia-linked accounts were automated and tweeted election related content.8 Reports released by the Senate Intelligence Committee estimate that the Russian campaign reached not only the 126 million people on Facebook but another 20 million more on Instagram.9 Some Russian messages were crafted to support particular candidates while others were designed to create a general sense of chaos. Still others were micro-targeted to suppress voting by particular demographic groups such as African-Americans or younger voters. While skeptics argue that Russian efforts were a small percentage of the total content on the Internet, “for sub-groups of targeted Americans, the messaging was perhaps ubiquitous.”10

Before the Internet, such operations involved costly training and movement of spies across borders, establishment of foreign bank accounts, and transfers of cash. Now similar effects can be accomplished remotely at much lower cost. It is much easier to send electrons across borders than human agents. Ransoming a failed spy can be costly, but if no one clicks on a phishing e mail, it is simple, deniable, and virtually free to send another. In 1983, when the KGB seeded the rumor that AIDS was the product of U.S. government experiments with biological weapons, the rumor started with an anonymous letter to a small New Delhi newspaper and then was propagated globally but slowly over several years by widespread reproduction and constant repetition in conventional media. It took four years to reach full fruition. 11 In 2016, an updated version of the same technique was used to create “Pizzagate,” the bizarre rumor that Hillary Clinton’s campaign manager ran a child sex ring in a Washington restaurant. It spread instantly on the Internet. What’s new is not the basic model; it’s the speed with which such disinformation can spread and the low cost of spreading it.

With its armies of paid trolls and botnets, along with outlets such as Russia Today (RT) and Sputnik, Russian intelligence, after hacking into the e-mails of the Democratic National Committee and senior Clinton campaign officials, could distract and disrupt news cycles week after week without setting foot in the United States. And it could also count on the witting and unwitting help of organizations like Wikileaks. Russian messages aimed at priming, framing, agenda setting, and contagion were accelerated by U.S. media that were too quick and unreflective in using the Russian phrasing and frames.12 American voters are subject to many influences, and there were many potential causes of the narrow outcome of the 2016 election. It is far too simple just to blame manipulation of social media. As social scientists say, the outcome was “overdetermined.” But whatever its effects on the particular election outcome, Russia was able to accomplish its deeper goal of sowing disruption and discrediting the democratic model. It successfully undercut American soft power.

#### Constellations are key to democracy promotion – they put authoritarian leaders on the defensive – it’s perceptual and proven by opposition to satellites

Schwille 4/12 [(Michael, senior policy analyst at RAND, research interest focuses on the integration of information into combined arms warfare, M.A. in international development studies from George Washington University) “Satellite Internet Services—Fostering the Dictator's Dilemma?” RAND Corporation, 4/12/2021] JL

Constellations of low-altitude, low-latency satellites providing broadband internet access to wide swathes of the earth are an impending challenge to the information dominance enjoyed by the world's authoritarian states. Whether Amazon's proposed Project Kuiper, Elon Musk's Starlink (already functional in some areas of North America), or the United Kingdom funded OneWeb, the ability to provide relatively low cost internet access outside of government control is both a challenge for authoritarian states and an opportunity for democracies.

In Russia, the Duma is already considering a law to criminalize access to such satellite services. China is not only planning to launch a competing service, it has Starlink's Musk concerned about having his satellites “blown up.” North Korea, which bans its citizens from accessing the internet and (in)famously attacks leaflets with machine guns, shells loudspeakers with artillery, and punishes citizens for accessing Chinese cellphone towers, has yet to comment publicly on such services. Given this history though, Pyongyang's reaction is unlikely to be very positive.

What are low-altitude, low-latency satellites and why are authoritarian states so concerned? The problem (for authoritarians) and promise (for democracies) are the services' ability to provide broadband internet access almost anywhere on earth, with nothing new required on the ground aside from a small terminal. Because these satellites orbit at several hundred kilometers (low Earth orbit), versus 35,000km for telecommunication satellites in geostationary orbit, their terminals can be smaller, portable, and easier to conceal, smuggle, and infiltrate. With one of these terminals, users can cheaply and quickly bypass national controls on the internet and information access, plus place phone (e.g. Voice over Internet Protocol, Skype, or Zoom) calls outside of government-controlled systems. It is this freedom of information access and communication that has Russia and China so concerned, and that provides an opportunity for democratic states to rebalance their current information disadvantage.

In what some scholars have termed democracy's dilemma, nations that rely on relatively free and open information flows are vulnerable to having that openness turned against them by adversaries. Think Russian influence on Brexit, the 2016 U.S. elections and the COVID-19 infodemic. What these new satellite systems offer is an opportunity to reinvigorate the dictator's dilemma (PDF)—the fear authoritarian leaders have of nonregime narratives reaching their people, or their people communicating outside of government-approved channels.

Just how powerful is this fear? Moscow reacts more negatively to criticisms and threats to its information control than it does to (far more expensive) NATO exercises. For years, Russian state media have even coordinated to deflect these criticisms of Russia's censorship onto countries with which Moscow is in conflict, successively targeting Georgia, the United States, and Ukraine.

China's rulers have a similar view, more fearful of “American ideals of freedom, democracy, and human rights infecting the people of China and Hong Kong,” than they are of U.S. military or economic challenges. This is not a new concern for Beijing; the term *Great Firewall of China* was discussed in a Wired article back in 1997. Beijing's controls have expanded since, with hundreds of thousands of censors and billions of dollars spent on informational and societal control, including the uniquely intrusive social credit systems (PDF).

North Korea is an even clearer example, with years of North Korea specialists (see Lankov, Baek, Cha, Myers, and others) highlighting Pyongyang's reliance on domestic information control to keep the Kim family in power. Impressive control, but a weakness masquerading as a strength.

This desire for information control represents both the dictator's dilemma and democracy's opportunity. Beijing, Moscow, and Pyongyang (as well as Tehran and others) are clearly concerned about the threat posed by unsupervised information access. Washington (or Brussels, London, Tokyo…whomever) publicly advocating for more open internet access, coupled with a clear mention of the new satellite services, would quickly command attention and establish a compelling narrative (and underlying threat). Coupling this message with a reminder of the West's ability to challenge information controls by, for example, smuggling bulky typewriters, printing presses, and Xerox machines into Eastern Europe in the 80s, which increased the flow of uncensored information, would add credibility to the threat—if authoritarian states thought typewriters were a problem, infiltrating an “internet in a box” (or thousands of them) looms as an even more compelling danger. The physical threat of infiltrated devices combined with a narrative advocating freedom of information access provide the West with a new, information-based tool for foreign policy leverage. A tool, or active measure, based not on fear, deception, or disinformation, but simply on information access.

By offering an information-based response to an information-based attack, this tool offers a fresh, calibrated response option. Chinese cyber espionage or recent attacks on Hong Kong's civil liberties, Russian attempts to influence Brexit or U.S. elections (or the more recent SolarWinds hack), North Korean attacks on Sony or South Korea's ATM network, are all activities ripe for response. Once this tool is effectively demonstrated in terms of fostering the dictator's dilemma, democracy's response and deterrence toolkits, for both cyber and influence activities, commensurately expands.

Importantly, the utility of this information tool is not confined simply to allowing outside information in; it also allows information to flow out (especially important with North Korea). Perhaps most importantly, it provides another tool to avoid government monitoring inside an authoritarian state. When paired with mesh networks of the type used, for example, during demonstrations in Hong Kong, it further increases the opportunity for the free flow of information dictators perceive as so threatening.

This tool (or its threatened use) does not replace other foreign policy tools—diplomatic, economic, and military tools remain options; this proposal simply adds a new information-based capability. The tool fits within a historical context of Western information activities and offers a compelling public narrative—fighting censorship. The hardware costs are relatively low, largely borne by the companies launching the satellites, and coming into existence whether governments wish them to or not. Finally, by rebalancing democracy's dilemma through a reinforcement of the dictator's dilemma, this tool offers an information response to information/cyber/influence attacks, using a method that clearly targets the vulnerabilities and sensitivities of authoritarian adversaries.

#### Democracy solves war

Christopher Kutz 16. PhD UC Berkeley, JD Yale, Professor, Boalt Hall School of Law @ UC Berkeley, Visiting Professor at Columbia and Stanford law schools, as well as at Sciences Po University. “Introduction: War, Politics, Democracy,” in On War and Democracy, 1.

Despite Churchill’s famous quip—“Democracy is the worst form of government, except for all those other forms that have been tried from time to time”2—democracy is seen as a source of both domestic and international flourishing. Democracy, understood roughly for now as a political system with wide suffrage in which power is allocated to officials by popular election, can solve or help solve a host of problems with stunning success. It can solve the problem of revolutionary violence that condemns autocratic regimes, because mass politics can work at the ballot box rather than the streets. It can help solve the problem of famine, because the systems of free public communication and discussion that are essential to democratic politics are the backbone of the markets that have made democratic societies far richer than their competitors. It can help solve the problem of environmental despoliation, which occurs when those operating polluting factories (whether private citizens or the state) do not need to answer for harms visited upon a broad public. And democracy has been famously thought to help solve the problem of war, in the guise of the idea of the “peace amongst democratic nations”—an idea emerging with Immanuel Kant in the Age of Enlightenment and given new energy with the wave of democratization at the end of the twentieth century.

## 1NC – DA

#### China’s capitalizing on US vulnerabilities and ramping up ASAT development now – that emboldens Xi to invade Taiwan

Chow and Kelley 8/21 [(Brian G., policy analyst for the Institute of World Politics, Ph.D in physics from Case Western Reserve University, MBA and Ph.D in finance from the University of Michigan,and Brandon, graduate of Georgetown’s School of Foreign Service ) “China’s Anti-Satellite Weapons Could Conquer Taiwan—Or Start a War,” National Interest, 8/21/2021] JL

If current trends hold, then China’s Strategic Support Force will be capable by the late 2020s of holding key U.S. space assets at risk. Chinese military doctrine, statements by senior officials, and past behavior all suggest that China may well believe threatening such assets to be an effective means of deterring U.S. intervention. If so, then the United States would face a type of “Sophie’s Choice”: decline to intervene, potentially leading allies to follow suit and Taiwan to succumb without a fight, thereby enabling Xi to achieve his goal of “peacefully” snuffing out Taiwanese independence; or start a war that would at best be long and bloody and might well even cross the nuclear threshold.

This emerging crisis has been three decades in the making. In 1991, China watched from afar as the United States used space-enabled capabilities to obliterate the Iraqi military from a distance in the first Gulf War. The People’s Liberation Army quickly set to work developing capabilities targeted at a perceived Achilles’ heel of this new American way of war: reliance on vulnerable space systems.

This project came to fruition with a direct ascent ASAT weapons test in 2007, but the test was limited in two key respects. First, it only reached low Earth orbit. Second, it generated thousands of pieces of long-lasting space junk, provoking immense international ire. This backlash appears to have taken China by surprise, driving it to seek new, more usable ASAT types with minimal debris production. Now, one such ASAT is nearing operational status: spacecraft capable of rendezvous and proximity operations (RPOs).

Such spacecraft are inevitable and cannot realistically be limited. The United States, European Union, China, and others are developing them to provide a range of satellite services essential to the new space economy, such as in situ repairs and refueling of satellites and active removal of space debris. But RPO capabilities are dual-use: if a satellite can grapple space objects for servicing, then it might well be capable of grappling an adversary’s satellite to move it out of its servicing orbit. Perhaps it could degrade or disable it by bending or disconnecting its solar panels and antennas all while producing minimal debris.

This is a serious threat, primarily because no international rules presently exist to limit close approaches in space. Left unaddressed, this lacuna in international law and space policy could enable a prospective attacker to pre-position, during peacetime, as many spacecraft as they wish as close as they wish to as many high-value targets as they wish. The result would be an ever-present possibility of sudden, bolt-from-the-blue attacks on vital space assets—and worse, on many of them at once.

China has conducted at least half a dozen tests of RPO capabilities in space since 2008, two of which went on for years. Influential space experts have noted that these tests have plausible peaceful purposes and are in many cases similar to those conducted by the United States. This, however, does not make it any less important to establish effective legal, policy, and technical counters to their offensive use. Even if it were certain that these capabilities are intended purely for peaceful applications—and it is not at all clear that that is the case—China (or any other country) could at any time decide to repurpose these capabilities for ASAT use.

There is still time to get out ahead of this threat, but likely not for much longer. China’s RPO capabilities have, thus far, lagged about five years behind those of the United States. There are reasons to believe this gap may close, but even assuming that it holds, we should expect to see China demonstrate an operational dual-use rendezvous spacecraft by around 2025. (The first instance of a U.S. commercial satellite docking with another satellite to change its orbit occurred in February 2020.)

At the same time, China is expanding its capacity for rapid spacecraft manufacturing. The Global Times reported in January that China’s first intelligent mass production line is set to produce 240 small satellites per year. In April, Andrew Jones at SpaceNews reported that China is developing plans to quickly produce and loft a thirteen thousand-satellite national internet megaconstellation. It is not unreasonable to assume that China could manufacture two hundred small rendezvous ASAT spacecraft by 2029, possibly more.

If this happens, and Beijing was to decide in 2029 to launch these two hundred small RPO spacecraft and position them in close proximity to strategically vital assets, then China would be able to simultaneously threaten disablement of the entire constellations of U.S. satellites for missile early warning (about a dozen satellites with spares included); communications in a nuclear-disrupted environment (about a dozen); and positioning, navigation, and timing (about three dozen); along with several dozen key communications, imagery, and meteorology satellites. Losing these assets would severely degrade U.S. deterrence and warfighting capabilities, yet once close pre-positioning has occurred such losses become almost impossible to prevent. For this reason, such pre-positioning could conceivably deter the United States from coming to Taiwan’s aid due to the prospect that intervention would spur China to disable these critical space systems. Without their support, the war would be much bloodier and costlier—a daunting proposition for any president.

Should the United States fail to intervene, the consequences would be disastrous for both Washington and its allies in East Asia, and potentially the credibility of U.S. defense commitments around the globe. Worse yet, however, might be what could happen if China believes that such a threat will succeed but proves to be wrong. History is rife with examples of major wars arising from miscalculations such as this, and there are many pathways by which such a situation could easily escalate out of control to a full-scale conventional conflict or even to nuclear use.

#### Starlink development solves – mega-constellations are unjammable and accurate

Harris 20 [(Mark, Knight Science Journalism Fellow at MIT in 2013, writes about technology, science, business, the environment, and travel, internally cites Todd Humphreys, Professor of Aerospace Engineering at UT Austin, and Peter Iannucci,, Postdoctoral Research Fellow in Aerospace Engineering and Engineering Mechanics at UT Austin) “SpaceX’s Starlink satellites could make US Army navigation hard to jam,” MIT Technology Review, 9/28/2020] JL

Now, research funded by the US Army has concluded that the growing mega-constellation could have a secondary purpose: doubling as a low-cost, highly accurate, and almost unjammable alternative to GPS. The new method would use existing Starlink satellites in low Earth orbit (LEO) to provide near-global navigation services.

In a non-peer-reviewed paper, Todd Humphreys and Peter Iannucci of the Radionavigation Laboratory at the University of Texas at Austin claim to have devised a system that uses the same satellites, piggybacking on traditional GPS signals, to deliver location precision up to 10 times as good as GPS, in a system much less prone to interference.

The Global Positioning System consists of a constellation of around 30 satellites orbiting 20,000 kilometers above Earth. Each satellite continuously broadcasts a radio signal containing its position and the exact time from a very precise atomic clock on board. Receivers on the ground can then compare how long signals from multiple satellites take to arrive and calculate their position, typically to within a few meters.

The problem with GPS is that those signals are extremely weak by the time they reach Earth, and are easily overwhelmed by either accidental interference or electronic warfare. In China, mysterious GPS attacks have successfully “spoofed” ships in fake locations, while GPS signals are regularly jammed in the eastern Mediterranean.

The US military relies heavily on GPS. Last year, the US Army Futures Command, a new unit dedicated to modernizing its forces, visited Humphreys’s lab to talk about a startup called Coherent Navigation he had cofounded in 2008. Coherent, which aimed to use signals from Iridium satellites as a rough alternative to GPS, was acquired by Apple in 2015.

“They told me the Army has a relationship with SpaceX [it signed an agreement to test Starlink to move data across military networks in May] and would I be interested in talking to SpaceX about using their Starlink satellites the same way that I used these old Iridium satellites?” Humphreys says. “That got us an audience with people at SpaceX, who liked it, and the Army gave us a year to look into the problem.” Futures Command also provided several million dollars in funding.

The concept of using LEO satellites for navigation isn't new. In fact, some of the first US spacecraft launched in the 1960s were Transit satellites orbiting at 1,100 kilometers, providing location information for Navy ships and submarines. The advantage of an LEO constellation is that the signals can be a thousand times stronger than GPS. The disadvantage is that each satellite can serve only a small area beneath it, so that reliable global coverage requires hundreds or even thousands of satellites.

Building a whole new network of LEO satellites with ultra-accurate clocks would be an expensive undertaking. Bay Area startup Xona Space Systems plans to do just that, aiming to launch a constellation of at least 300 Pulsar satellites over the next six years.

Humphreys and Iannucci’s idea is different: they would use a simple software upgrade to modify Starlink’s satellites so their communications abilities and existing GPS signals could provide position and navigation services .

They claim their new system can even, counterintuitively, deliver better accuracy for most users than the GPS technology it relies upon. That is because the GPS receiver on each Starlink satellite uses algorithms that are rarely found in consumer products, to pinpoint its location within just a few centimeters. These technologies exploit physical properties of the GPS radio signal, and its encoding, to improve the accuracy of location calculations. Essentially, the Starlink satellites can do the heavy computational lifting for their users below.

The Starlink satellites are also essentially internet routers in space, capable of achieving 100 megabits per second. GPS satellites, on the other hand, communicate at fewer than 100 bits per second.

“There are so few bits per second available for GPS transmissions that they can’t afford to include fresh, highly accurate data about where the satellites actually are,” says Iannucci. “If you have a million times more opportunity to send information down from your satellite, the data can be much closer to the truth.”

The new system, which Humphreys calls fused LEO navigation, will use instant orbit and clock calculations to locate users to within 70 centimeters, he estimates. Most GPS systems in smartphones, watches, and cars, for comparison, are only accurate to a few meters.

But the key advantage for the Pentagon is that fused LEO navigation should be significantly more difficult to jam or spoof. Not only are its signals much stronger at ground level, but the antennas for its microwave frequencies are about 10 times more directional than GPS antennas. That means it should be easier to pick up the true satellite signals rather than those from a jammer.  “At least that’s the hope,” says Humphreys.

According to Humphreys and Iannucci’s calculations, their fused LEO navigation system could provide continuous navigation service to 99.8% of the world’s population, using less than 1% of Starlink’s downlink capacity and less than 0.5% of its energy capacity.

“I do think this could lead to a more robust and accurate solution than GPS alone,” says Todd Walter of Stanford University’s GPS Lab, who was not involved with the research. “And if you don’t have to modify Starlink’s satellites, it certainly is a fast, simple way to go.”

#### Taiwan goes nuclear – the US gets drawn in

The Week 1/4 [(The Week Staff, weekly news magazine with editions in the United Kingdom and United States) “What would happen if China tried to invade Taiwan?” The Week Staff, 1/4/2022] JL

If a conflict were to break out between the two neighbours it would be “a catastrophe”, reported The Economist. This is first because of “the bloodshed in Taiwan” but also because of the risk of “escalation between two nuclear powers”, namely the US and China.

Beijing massively outguns Taiwan, with estimates from the Stockholm International Peace Research Institute showing that China spends about 25 times more on its military. However, Taiwan has a defence pact with the US dating back to the 1954 Sino-American Mutual Defence Treaty, meaning the US could, in theory, be drawn into the conflict.

“Beijing’s optimistic version of events” after the decision to invade would see “cyber and electronic warfare units target Taiwan’s financial system and key infrastructure, as well as US satellites to reduce notice of impending ballistic missiles”, Bloomberg said.

“Chinese vessels could also harass ships around Taiwan, restricting vital supplies of fuel and food,” the news site continued, while “airstrikes would quickly aim to kill Taiwan’s top political and military leaders, while also immobilising local defences”.

This would be followed by “warships and submarines traversing some 130 kilometres [80 miles] across the Taiwan Strait”, before “thousands of paratroopers would appear above Taiwan’s coastlines, looking to penetrate defences [and] capture strategic buildings”.

According to satellite imagery seen by military news site The Drive, China has also begun “beefing up its combat aviation infrastructure across from Taiwan as invasion fears grow”.

Beijing “is upgrading three air bases located opposite” the island, “boosting its air power capability in an already tense region that is flush with air combat capabilities.”

“Construction of the new infrastructure began in early 2020 and continued uninterrupted through the pandemic, underlining its priority,” the site added.

Taiwan would be reliant on “natural defences” – its rugged coastline and rough sea – with plans to “throw a thousand tanks at the beachhead” in the event of a Chinese invasion that could result in “brutal tank battles” that “decide the outcome”, according to Forbes.

The island’s top military leadership has also “warned China that the closer its aircraft and ships get to the island the harder Taipei will respond”, Bloomberg reported, with “a multi-pronged approach that utilises aircraft, ships and its air defence systems to counter Chinese military incursions” in the works.

“Chinese state media has dismissed the idea of Taiwan retaliating,” the news agency added. But a report by the island’s defence ministry sent to legislators shows the island is preparing to “take tougher measures” should they be necessary.

This would all be complicated by the US pledge to defend its ally in what The Economist called a “test of America’s military might and its diplomatic and political resolve”.

Asked last week during a CNN town hall meeting whether the US would mount a military response if Beijing attempted to take the island by force, Biden responded: “Yes, we have a commitment to do that.”

The Guardian said that Biden “made a similar pledge in August”, when he told ABC News that the US has a “sacred commitment” to defend its Nato allies in Canada and Europe and it was the “same with Japan, same with South Korea, same with Taiwan”.

If the US had decided against intervention, “China would overnight become the dominant power in Asia” and “America’s allies around the world would know that they could not count on it”, the paper added. In other words, “Pax Americana would collapse”.

That would be unacceptable in Washington, especially as “Joe Biden pivots US foreign policy towards a focus on the Indo-Pacific as the main arena for 21st-century superpower competition”, The Guardian said.

Biden’s comments during the CNN event were “at odds with the long-held US policy” of “strategic ambiguity”, The Telegraph said. Historically, Washington has helped “build Taiwan’s defences” but has “not explicitly promised to come to the island’s aid”.

US manoeuvres have so far consisted of building up “large amounts of lethal military hardware”, The Guardian added, with “the steady buildup of troops and equipment and the proliferation of war games” meaning there is “more of a chance of conflict triggered by miscalculation or accident”.

The primary danger that comes with US involvement lies in the fact that both Washington and Beijing possess nuclear weapons.

Leaked documents published by The New York Times earlier this year revealed the extent of Washington’s discussions about using nuclear weapons to deter a Chinese invasion of Taiwan in the 1950s.

Provided to the paper by Daniel Ellsberg, the whistleblower behind the 1971 Pentagon Papers, the documents appeared to show an “acceptance by some US military leaders of possible retaliatory nuclear strikes on US bases”, CNN noted, raising the spectre of how the nuclear powers would square off in a 21st-century conflict.

## 1NC – Case

### 1NC – Debris

#### Debris creates deterrence by raising the bar for conflict – international norms fail

Miller 7/31 [(Gregory, Chair of the Department of Space Power at the Air Command and Staff College, Ph.D. in Political Science from The Ohio State University) “Deterrence by Debris: The Downside to Cleaning up Space,” Space Policy, 7/31/2021] JL

The danger of kinetic strikes increasing orbital debris is a common theme in the literature, but the positive deterrent effects of some debris are often overlooked. The debris resulting from destroyed satellites, or other space objects, creates a deterrent effect on actors who might otherwise violate international norms and strike at objects in space, either to test their capabilities or as an act of hostilities. This is not deterrence in the traditional sense, of one actor publicly threatening punishment in response to another actor’s unwanted actions. It is not deterrence by denial since the attacker is not damaged and may even achieve its objective. Nor is it deterrence by punishment because the debris itself does not threaten to punish the attacker’s country. But debris can increase the future costs to the aggressor, even if their initial attack succeeds, and thus it has a similar restraining effect on certain behavior. Like the automated response of the U.S. tripwire in West Germany, the threat that debris can pose to state interests acts as a form of deterrence, at least to prevent some actors from taking certain types of actions. Removing the danger of debris will weaken that restraint and thus weaken deterrence, making ASAT tests and hostile actions in space more likely.

Several factors may deter a state from launching kinetic tests or striking against an adversary’s interests in space. For one thing, if a state’s adversary has similar capabilities to destroy objects in space, deterrence would be a function of not wanting to escalate tensions. Although international law only explicitly prohibits states from placing weapons of mass destruction in orbit, international space law, like the Outer Space Treaty [30], does provide a framework for addressing the activities of one state that lead to the damage of another state’s property. Likewise, there are international norms (informal but expected rules of behavior) against the weaponization of space. But these norms seem to be in decline [31], and such norms only deter a state from engaging in certain types of behavior if the state cares about following norms, if it cares about how states perceive its behavior, or if it believes other states are willing to enforce the norms. The beauty of debris as a deterrent is that it does not rely on the enforcement of norms or the credibility of states to succeed.

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

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

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

#### No impact to debris – it hits stations all the time.

Cain ’15 (Fraser; 12/23/15; writer for Universe Today; “How Do Astronauts Avoid Debris”; http://www.universetoday.com/121067/how-do-astronauts-avoid-debris)

So, just how do we keep our space stations, ships and astronauts from being riddled with holes from all of the space junk in orbit around Earth? We revel in the terror grab bag of all the magical ways to get snuffed in space. Almost as much as we celebrate the giant brass backbones of the people who travel there. We’ve already talked about all the scary ways that astronauts can die in space. My personal recurring “Hail Mary full of grace, please don’t let me die in space” nightmare is orbital debris. We’re talking about a vast collection of spent rockets, dead satellites, flotsam, jetsam, lagan and derelict. It’s not a short list. NASA figures there are **21,000 bits of junk** bigger than 10 cm, **500,000 particles** between 1 and 10 cm, and more than **100 million** smaller than 1 cm. Sound familiar, humans? This is our high tech, sci fi great Pacific garbage patch. Sure, a tiny rivet or piece of scrap foil doesn’t sound very dangerous, but consider the fact that astronauts are orbiting the Earth at a velocity of about 28,000 km/h. And the Tang packets, uneaten dehydrated ice cream, and astronaut poops are also traveling at 28,000 km/h. Then think about what happens when they collide. Yikes… or yuck. Here’s the International Space Station’s solar array. See that tiny hole? Embiggen and clarinosticate! That’s a tiny puncture hole made in the array by a piece of orbital crap. The whole station is **pummeled by tiny pieces of space program junk drawer contents**. Back when the Space Shuttle was flying, NASA had to **constantly replace their windows because of the damage they were experiencing** from the orbital equivalent of Dennis the Menace hurling paint chips, fingernail clippings, and frozen scabs.

**Probability – 0.1% chance of a collision.**

**Salter 16** [(Alexander William, Economics Professor at Texas Tech) “SPACE DEBRIS: A LAW AND ECONOMICS ANALYSIS OF THE ORBITAL COMMONS” 19 STAN. TECH. L. REV. 221 \*numbers replaced with English words] TDI

The probability of a collision is currently low. Bradley and Wein estimate that the maximum probability in LEO of a collision over the lifetime of a spacecraft remains below one in one thousand, conditional on continued compliance with NASA’s deorbiting guidelines.3 However, the possibility of a future “snowballing” effect, whereby debris collides with other objects, further congesting orbit space, remains a significant concern.4 Levin and Carroll estimate the average immediate destruction of wealth created by a collision to be approximately $30 million, with an additional $200 million in damages to all currently existing space assets from the debris created by the initial collision.5 The expected value of destroyed wealth because of collisions, currently small because of the low probability of a collision, can quickly become significant if future collisions result in runaway debris growth.

**Time frame – Kessler effect 200 years away**

**Stubbe 17** [(Peter, PhD in law @ Johann Wolfgang Goethe University Frankfurt) “State Accountability for Space Debris: A Legal Study of Responsibility for Polluting the Space Environment and Liability for Damage Caused by Space Debris,” Koninklijke Brill Publishing, ISBN 978-90-04-31407-8, p. 27-31] TDI

The prediction of possible scenarios of the future evolution of the debris p o p ulation involves many uncertainties. Long-term forecasting means the prediction of the evolution of the future debris environment in time periods of decades or even centuries. Predictions are based on models84 that work with certain assumptions, and altering these parameters significantly influences the outcomes of the predictions. Assumptions on the future space traffic and on the initial object environment are particularly critical to the results of modeling efforts.85 A well-known pattern for the evolution of the debris population is the so-called Kessler effect’, which assumes that there is a certain collision probability among space objects because many satellites operate in similar orbital regions. These collisions create fragments, and thus additional objects in the respective orbits, which in turn enhances the risk of further collisions. Consequently, the num ber of objects and collisions increases exponentially and eventually results in the formation of a self-sustaining debris belt aroundthe Earth. While it has long been assumed that such a process of collisional cascading is likely to occur only in a very long-term perspective (meaning a time 1 n of several hundred years),87 a consensus has evolved in recent years that an uncontrolled growth of the debris population in certain altitudes could become reality much sooner.88 In fact, a recent cooperative study undertaken by various space agencies in the scope of i a d c shows that the current l e o debris population is unstable, even if current mitigation measures are applied. The study concludes:

Even with a 90% implementation of the commonly-adopted mitigation measures [...] the l e o debris population is expected to increase by an average of 30% in the next 200 years. The population growth is primarily driven by catastrophic collisions between 700 and 1000 km altitudes and such collisions are likely to occur every 5 to 9 years.89

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

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

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

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

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

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

## Ozone

#### **The ozone is resilient and improving now:**

Sustainability for All nd [(Sustainability for All - international organization working in partnership with the United Nations, leaders in government, the private sector, financial institutions and civil society with as goal to drive further, faster action toward the achievement of Sustainable Development Goal 7, which calls for universal access to sustainable energy by 2030, and the Paris Agreement, which calls for reducing greenhouse gas emissions to limit climate warming to below 2° Celsius) “WHY THE OZONE LAYER IS NO LONGER AT RISK” nd]

In the mid-Seventies, a group of scientists warned about the gradual destruction of the ozone layer that protects the planet from ultraviolet radiation. In 1985, an article in Nature magazine by British Antarctic Survey scientists alerted that a hole had appeared in the ozone layer over the South Pole, where the gas had been reduced by 50%. From this moment on, the hole in the ozone layer became a crucial question in the fight to conserve the environment.

Why had this ozone gas diminished? The main cause was the growing use of chlorofluorocarbons, known as CFCs, which was provoking more ozone loss than was being formed, lowering its concentration. CFCs consisted of chemical substances that were used in everyday items such as refrigeration devices (domestic fridges, air conditioning, industrial freezers) and aerosols (deodorants, spray paint, insecticides, lacquers, etc.).

As well as CFCs, of which 12 different types exist, there are other gases of human origin that endanger the ozone layer, such as methyl chloroform (used in paints and solvents), carbon tetrachloride (present in pesticides, fire extinguishers and bleaches) and substances made of bromine, such as halons, used, for example, to put out fires.

Why damaging the ozone layer is dangerous

Ozone concentration is present in 90% of the upper layers of the atmosphere and is essential for the development of life, since it filters all ultraviolet radiation. This vital function for life on earth prevents us from being over-exposed to the ultraviolet rays which will harm our health.

The ozone layer protects human beings and other species from diseases such as skin cancer, melanomas, cataracts in the eyes and suppression of the immune system. Its destruction also damages crops sensitive to ultraviolet radiation.

Montreal Protocol, a turning point

Two decades ago, in 1987, an international pact known as the Montreal Protocol represented a milestone in global environmental policy, a unanimous agreement to reduce production and consumption of the noxious substances destroying the ozone layer.

Why the ozone layer is no longer at risk

Since it entered into force in 1989, CFCs have mainly been replaced by HCFCs (hydrochlorofluorocarbons), which although these also have a negative impact on the greenhouse effect, at least they do not damage the ozone layer.

The Montreal Protocol is considered one of the great successes of international cooperation in fighting to conserve the environment, and is a clear example of how a global pact can incentivize countries to continue working together.

The ozone layer is recovering

Thanks to the measures adopted in the Montreal Protocol, the ozone layer is recovering. According to a report by MIT (Massachusetts Institute of Technology), since the year 2000, the moment at which the ozone concentration fell to its lowest in history, the hole has reduced by four million square kilometres.

The hole in the ozone layer has shrunk by four million square kilometres since 2000

The scientific community estimates that, if it continues this rate of recovery, in 2050 the hole will have completely closed, i.e. the concentration of ozone gas will have returned to be the same over the South Pole as before human action provoked its change.

Paradoxically, according to UNEP (the United Nations Environment Programme), if the Montreal Protocol had not been signed, in 2050 the hole in the ozone layer would have grown ten times bigger than at the time it was discovered.

To raise awareness on the importance of caring for the ozone layer, every 16 September the global community celebrates the International Day for the Preservation of the Ozone Layer.