## 1NC – T

#### Interpretation: appropriation is a generic bare plural. The aff may not defend that a subset of appropriation is unjust.

Nebel 19 Jake Nebel [Jake Nebel is an assistant professor of philosophy at the University of Southern California and executive director of Victory Briefs.] , 8-12-2019, "Genericity on the Standardized Tests Resolution," Briefly, https://www.vbriefly.com/2019/08/12/genericity-on-the-standardized-tests-resolution/ SM

Both distinctions are important. Generic resolutions can’t be affirmed by specifying particular instances. But, since generics tolerate exceptions, plan-inclusive counterplans (PICs) do not negate generic resolutions. Bare plurals are typically used to express generic generalizations. But there are two important things to keep in mind. First, generic generalizations are also often expressed via other means (e.g., definite singulars, indefinite singulars, and bare singulars). Second, and more importantly for present purposes, bare plurals can also be used to express existential generalizations. For example, “Birds are singing outside my window” is true just in case there are some birds singing outside my window; it doesn’t require birds in general to be singing outside my window. So, what about “colleges and universities,” “standardized tests,” and “undergraduate admissions decisions”? Are they generic or existential bare plurals? On other topics I have taken great pains to point out that their bare plurals are generic—because, well, they are. On this topic, though, I think the answer is a bit more nuanced. Let’s see why. 1.1 “Colleges and Universities” “Colleges and universities” is a generic bare plural. I don’t think this claim should require any argument, when you think about it, but here are a few reasons. First, ask yourself, honestly, whether the following speech sounds good to you: “Eight colleges and universities—namely, those in the Ivy League—ought not consider standardized tests in undergraduate admissions decisions. Maybe other colleges and universities ought to consider them, but not the Ivies. Therefore, in the United States, colleges and universities ought not consider standardized tests in undergraduate admissions decisions.” That is obviously not a valid argument: the conclusion does not follow. Anyone who sincerely believes that it is valid argument is, to be charitable, deeply confused. But the inference above would be good if “colleges and universities” in the resolution were existential. By way of contrast: “Eight birds are singing outside my window. Maybe lots of birds aren’t singing outside my window, but eight birds are. Therefore, birds are singing outside my window.” Since the bare plural “birds” in the conclusion gets an existential reading, the conclusion follows from the premise that eight birds are singing outside my window: “eight” entails “some.” If the resolution were existential with respect to “colleges and universities,” then the Ivy League argument above would be a valid inference. Since it’s not a valid inference, “colleges and universities” must be a generic bare plural. Second, “colleges and universities” fails the upward-entailment test for existential uses of bare plurals. Consider the sentence, “Lima beans are on my plate.” This sentence expresses an existential statement that is true just in case there are some lima beans on my plate. One test of this is that it entails the more general sentence, “Beans are on my plate.” Now consider the sentence, “Colleges and universities ought not consider the SAT.” (To isolate “colleges and universities,” I’ve eliminated the other bare plurals in the resolution; it cannot plausibly be generic in the isolated case but existential in the resolution.) This sentence does not entail the more general statement that educational institutions ought not consider the SAT. This shows that “colleges and universities” is generic, because it fails the upward-entailment test for existential bare plurals. Third, “colleges and universities” fails the adverb of quantification test for existential bare plurals. Consider the sentence, “Dogs are barking outside my window.” This sentence expresses an existential statement that is true just in case there are some dogs barking outside my window. One test of this appeals to the drastic change of meaning caused by inserting any adverb of quantification (e.g., always, sometimes, generally, often, seldom, never, ever). You cannot add any such adverb into the sentence without drastically changing its meaning. To apply this test to the resolution, let’s again isolate the bare plural subject: “Colleges and universities ought not consider the SAT.” Adding generally (“Colleges and universities generally ought not consider the SAT”) or ever (“Colleges and universities ought not ever consider the SAT”) result in comparatively minor changes of meaning. (Note that this test doesn’t require there to be no change of meaning and doesn’t have to work for every adverb of quantification.) This strongly suggests what we already know: that “colleges and universities” is generic rather than existential in the resolution. Fourth, it is extremely unlikely that the topic committee would have written the resolution with the existential interpretation of “colleges and universities” in mind. If they intended the existential interpretation, they would have added explicit existential quantifiers like “some.” No such addition would be necessary or expected for the generic interpretation since generics lack explicit quantifiers by default. The topic committee’s likely intentions are not decisive, but they strongly suggest that the generic interpretation is correct, since it’s prima facie unlikely that a committee charged with writing a sentence to be debated would be so badly mistaken about what their sentence means (which they would be if they intended the existential interpretation). The committee, moreover, does not write resolutions for the 0.1 percent of debaters who debate on the national circuit; they write resolutions, at least in large part, to be debated by the vast majority of students on the vast majority of circuits, who would take the resolution to be (pretty obviously, I’d imagine) generic with respect to “colleges and universities,” given its face-value meaning and standard expectations about what LD resolutions tend to mean.

#### It applies to appropriation:

#### Upward entailment test – spec fails the upward entailment test because saying that appropriating space for mining is unjust doesn’t entail that appropriating space for colonization is unjust

#### Adverb test – adding “usually” to the res doesn’t substantially change its meaning because appropriation is universal and lasting

#### Violation: they defend appropriation in the PRC – host of other actors like the US, India, Russia, plus individual companies and permutations

#### Vote neg:

#### Limits – there are countless affs accounting for every subset of space actors, like nations and companies – unlimited topics incentivize obscure affs that negs won’t have prep on – limits are key to reciprocal prep burden – potential abuse doesn’t justify foregoing the topic and 1AR theory checks PICs

#### Ground – spec guts core generics like space col good, the heg DA, and the NewSpace econ DA, because the link is premised on reducing space privatization across the board – also means there is no universal DA to spec affs

#### TVA solves – read as an advantage to whole rez

#### Paradigm issues:

#### Drop the debater – their abusive advocacy skewed the debate from the start

#### Comes before 1AR theory – NC abuse is responsive to them not being topical

#### Competing interps – reasonability invites arbitrary judge intervention and a race to the bottom of questionable argumentation

#### No RVIs – fairness and education are a priori burdens – and encourages baiting – outweighs because if T is frivolous, they can beat it quickly

#### Fairness is a voter ­– necessary to determine the better debater

#### Education is a voter – why schools fund debate

## 1NC – CP

#### CP: The Republic of Korea should ban the appropriation of outer space by private entities except for 6G satellites. The Republic of Korea should fund the appropriation of outer space for 6G satellites from asteroids by private entities.

#### South Korea is looking into 6G programs now but continued private sector investment is key.

Fletcher 7/1 [(Bevin, editor of FierceWireless. She previously served as senior reporter for Wireless Week and CED Magazine, covering the wireless industry on a variety of topics including regulation, technology, and business. She has also worked as a journalist at biotech and finance trade publications. Bevin has a bachelor's degree in journalism from West Virginia University.) “South Korea kickstarts 6G plans,” Fierce Wireless, 7/1/21. <https://www.fiercewireless.com/tech/south-korea-kickstarts-6g-plans>] RR

South Korea’s Ministry of Science and ICT this week established a 6G R&D implementation plan that calls for investing around $194 million by 2025 in six focus areas.

The plan targets government investment totaling KRW 17.9 billion ($15.78 million) in 2021 across 10 strategic technologies, including Low Earth Orbit (LEO) satellites, with KRW 220 billion within four years.

The technologies correlate with the focus areas, including performance, Terahertz bands, space communications, ultra-precision; artificial intelligence; and reliability.

Specifically MSIT outlined strategic technologies that include Tbps-capable wireless and optical communication for maximum 1 Tbps speeds; Terahertz RF components and spectrum model for bands between 100-300 GHz; space mobile and satellite communications to help expand support altitude to 10 km above ground; end-to-end ultra-precision networking for 1/10 latency compared to 5G; intelligent wireless access and network with a focus on applying AI to all sections of the network; and technology for constant network quality monitoring for 5G focused on embedded security.

This year the focus is on laying the groundwork for technologies and identifying technical requirements for key areas of the 6G network. The government is also establishing 6G research centers at three universities in 2021, including KAIST, Sungkyunkwan University and Korea University.

South Korea is also targeting leadership in international standards and patents, with an emphasis on active public-private cooperation in the early stages of 6G.

“As next-generation communications network lays foundation for digital innovation, the public and private sector should work together to take challenges in leading global market in 6G era based on our experiences and knowhow in network,” said Minister Lim Hyesook of Science and ICT. “Furthermore, as both countries have solid foundation for collaboration thanks to Korea-U.S. Summit, we will work together in the early stage of 6G deployment based on such cooperation. We will continue to closely cooperate with relevant ministries, large companies and small and medium-sized enterprises to secure competitiveness in the future and further strengthen Korea’s position as a digital powerhouse.”

In May U.S. and South Korea agreed to encourage joint R&D on emerging technology including 6G.

South Korea and the U.S. signed a Memorandum of Understanding (MoU) through the National Science Foundation (NSF) and the South Korean Institute of Information & Communications Technology Planning & Evaluation (IITP) for collaborative research opportunities, including 6G.

South Korea plans to promote joint studies on core 6G technologies and spectrum, including 11 studies with the U.S., one study with China and two studies with Finland. The country’s 5G Forum will sign MoUs for 6G collaboration with organizations in the private sector, like the Next G Alliance in the U.S.

While 5G deployments are still largely in early phases, industry and governments are turning an eye toward 6G. Europe started a flagship program called Hexa-X, targeting 6G leadership. Groups like ATIS’ Next G Alliance in North America are looking to form next steps and roadmaps for 6G. China has indicated the start of 6G efforts as well.

The U.S. and U.K. earlier this month announced plans to create a detailed science and technology partnership agreement, including collaboration on 6G.

Executives from Qualcomm and Ericsson testified on Wednesday before the U.S. House Committee on Energy and Commerce Subcommittee on Communications and Technology for a legislative hearing focused on securing U.S. wireless networks and supply chain.

Qualcomm SVP of Spectrum Strategy & Tech Policy Dean Brenner said at the hearing that 5G still has a long runway, but the company has started early work on 6G. He emphasized that there won’t be 6G without spectrum, allocated by the FCC, and that spectrum and technology interactions need to take place at a very early stage.

Jason Boswell, head of security and network product solutions for Ericsson North America, said before the subcommittee that if they had not already started on the race to 6G, “we would already be behind.”

In addition to the vendor’s own R&D, he noted it’s important to show collaborations including public-private partnerships. Boswell cited involvement with the NSF RINGS (Resilient & Intelligent NextG Systems) program, noting a focus on potentially significantly impactful technologies such as artificial intelligence, quantum computing, kilohertz spectrum. There will be many different things needed to take advantage of 6G – “not just make it go faster,” he added.

#### A strong South Korean space sector is key to launching 6G networks.

Clarke 10/24 [(Carrington, he ABC's Seoul Correspondent, covering East Asia for the network. He works across digital, television and radio) “Asia is in the midst of a space race, but it's not just about exploration. It's also a military flex,” ABC Net News, 10/24/21. <https://www.abc.net.au/news/carrington-clarke/8042208>] RR

South Korea may not yet have its own dedicated 'Space Force' like the US, but it has made clear that space is crucial to its defence.

However, there are also legitimate civilian and scientific motivations for its ambitions for a space industry.

South Korea's capacity to launch its own rockets is a critical step for reaching goals like a national 6G cellular network and a sovereign radio navigation system like the American GPS.

Lee Hyung-mok, who is a professor emeritus in physics and astronomy at Korea National University, said he and his fellow scientists were excited about the opportunity to use these rockets.

He said they will help transport observation equipment outside the earth's atmosphere, allowing them to better understand our universe.

#### 1AC Clarke proves our link – inserted in green

South Korea may not yet have its own dedicated 'Space Force' like the US, but it has made clear that **space** is **crucial** **to** its **defence**. However, there are also legitimate civilian and scientific motivations for its ambitions for a space industry. South Korea's capacity to launch its own rockets is a critical step for reaching goals like a national 6G cellular network and a sovereign radio navigation system like the American GPS. Lee Hyung-mok, who is a professor emeritus in physics and astronomy at Korea National University, said he and his fellow scientists were excited about the opportunity to use these rockets. He said they will help transport observation equipment outside the earth's atmosphere, allowing them to better understand our universe. Such a discovery doesn't come cheap and Professor Lee said he recognises that space travel can be expensive. He also said he knows that national defence is often an easier way to get the government to loosen the public purse strings. "Maybe the government decided to spend a huge amount of money because of the military importance," he said. Although competition might be spurring further investment in space, he still worries about where it might lead. "What I really hope is that instead of competing too much, it's better to collaborate," he said. "So in many areas, they try to work together." But he said within Asia, no-one is in that "mood" yet.

#### South Korea is a global leader in 6G development— encourages other countries to adopt 6G networks.

Castro 20 [(Caio, Journalist since eight years old, when I would read the newspaper out loud and pretend it was a radio show. Based in São Paulo, I have worked for Brazilian websites as reporter and editor before joining 6GWorld) “Korea lays out plan to become the first country to launch 6G,” 6G World, 11/5/20. <https://www.6gworld.com/exclusives/korea-lays-out-plan-to-become-the-first-country-to-launch-6g/>] RR

Pushing for 6G at the United Nations

Patents and standardization are two other areas where Korea wants to become a leader. And the push for that has already begun.

On September 24 2020, Korea’s delegation at the International Telecommunication Union (ITU) – the UN body responsible, among others, for global communications standards – filed a proposal for ITU members to start developing a 6G vision.

This is part of an articulated attempt to put Korea at the centre of discussions on the next generation of networks before other well-established countries do the same.

According to the MSIT’s strategy, the effort comes as a “pre-emptive response to global hegemony battle,” and the two core actions in this field are “applying to 3GPP, ITU Standards of 6G core technology.”

Still, the plan also envisions mutual collaboration with other nations regarding research and training specialized workforce.

Setting the environment

Besides establishing the R&D committee, the provisional strategy also has an eye on network development’s educational aspect.

The idea includes building four Network Research Centres by 2022, plus an investment in a platform for knowledge exchange, featuring Massive Open Online Courses about 6G technology evolution and “real-time sharing of best ideas.”

Another effort planned by the MSIT regards how to combine the private sector and academia. The plan states that universities could support companies’ R&D while they act on retraining the workforce. On the other hand, it would be the industry’s role to ” support field training of university students and [offer] student mentoring.”

The document to which 6GWorld has had access envisions 6G commercialization starting in 2028. In August, the Korean government published a provisional timetable including details for each phase of the process:

#### 6G is key to cyber security – turns scenario 1

Ziegler et al. 10/14 [(Volker, (Senior Member, IEEE) received the Dipl.-Ing. (M.Sc.) and Dr.-Ing. (Ph.D.) degrees from the Department of Electrical Engineering, Universität (TH) Karlsruhe, Germany.) “Security and trust in the 6G era,” Nokia Bell Labs, 10/14/21. Graphs/Figures Omitted <https://d1p0gxnqcu0lvz.cloudfront.net/documents/Nokia_Security_and_trust_in_the_6G_era_White_Paper_EN.pdf>] RR

In our 6G security vision, we cluster security technology enablers into domains of cyber-resilience, privacy and trust, and their respective intersection as shown in Figure 3. Our approach emphasizes the need to extend cyber-resilience technologies by privacy-preserving technologies and on top of that, trust-creating technologies in order to achieve the ultimate goal of trustworthy 6G networks. We consider resilience against all kinds of cyber-attacks as the core element and indispensable foundation — a network that lacks these attributes of cyber-resilience will not be able to protect privacy and enable trust. While cyberresilience protects privacy against external attacks, end users may in addition want to reduce the amount of sensitive information that is revealed internally, i.e., to the multiple stakeholders involved in providing the communication services. Enabling technologies are needed beyond those in the area of cyberresilience. By adding specific technologies focusing on creating trust, we complete the overall picture of a resilient, privacy-preserving and trustworthy 6G network. In this paper, we have decomposed technology enablers into the following categories: pervasive AI/ML, automated SW creation, automated closed loop security operation, privacy preserving technologies, HW and cloud embedded anchors of trust, quantum safe mechanisms, physical layer security and distributed ledger.

Successful standardization has been the cornerstone of a unified technology landscape that has enabled the proliferation of the mobile communication generations to date. The ecosystem of standardization organizations that has been involved in the architecture and specification of 4G and 5G systems has its sights firmly set on the 6G future as well. Timing is of the essence for creating the optimal impact of standardization. Most SDOs start with studies on technology enablers first before moving into a normative phase of specification. While we expect normative 6G standardization work to start no earlier than 2024/25, we see the precursors of related studies in several technology fields, which we reference in the following.

Pervasive use of AI/ML can be considered a mega-trend of security relevance and driving force to help define the next generation of the Telecom Operation Map (eTOM) [20] and business process framework. In the section below on automated security operations, AI/ML is identified as one of the key drivers for a comprehensive vision of a Secure Telecom Operation Map (SecTOM) for the 6G era. AI/ML will enable and transform automation and analytics for e2e delivery of services to customers as well as for processes to design, create, deliver and support the entire software lifecycle. AI/ML-enabled 6G must include an AI/ ML-enabled 6G security architecture in both SW creation and network operations. Notwithstanding, the complexity and the challenge of continuous adaption requires practical implementations of such a concept, without detailed continuous logging and synchronization across the stacks and processes, but rather, based on smart and representative thread sampling. Mitigation of adversarial attacks will need dedicated research as part of a comprehensive “AIOps” paradigm (cf. “Automated security operations” below), which will include adversarial training to improve robustness, continual adaption of the algorithms that an ML model uses to classify data, and omni-present checks for consistency and integrity of the ML models.

In short, AI/ML will be used pervasively across 6G security architecture, process and technology domains. As discussed in Section III, along with its benefits, there will be new and emerging threats rooted in AI/ ML. ETSI Industry Specification Group (ISG) Securing Artificial Intelligence (SAI) is already working on these aspects and this domain will gain more significance with the proliferation of AI/ML use towards 6G.

With AI/ML-supported, automated SW creation and secure network operations, 6G will address two of the major root causes of unsatisfactory security in today’s information and communication technology systems: vulnerable software and unsecure operational practices. Beyond this, 6G cyber-resilience clearly requires quantum-safe cryptography, considering the progress in the area of quantum computing. Physical layer security, i.e., exploiting the 6G radio technology not only for higher data rates and lower latency, but also for improved security, complements the set of cyber-resilience enablers we consider most relevant for the 6G area. Clearly, on the way towards 6G, these technology enablers will need to be broken down into more granular security mechanisms and further refined and optimized. They will also be part of the expected 5G security evolution, as described in Section II. New requirements coming up in the future as well as yet unknown technologies may also call for enhancing this initial set of cyber-resilience technology enablers.

Building on cyber-resilience, it is commonly agreed that privacy-preserving technologies need to be enhanced in 6G.

In our high-level view, we group all these into a single technology enabler, but we discuss the relevant technologies one-by-one in the following section below on privacy-preserving technologies. To complete the picture, two technologies aiming at enhancing trust are essential for trustworthy 6G networks: First, HW trust anchors that are resistant against tampering via software, with the challenge to apply them in a highly dynamic cloud environment, where workloads are no longer tightly coupled to specific hardware platforms.

## 1NC – CP

#### CP: South Korea should outline the reforms implemented in 1AC Panda

South Korea’s expanding space launch ambitions, sealed by the July 2020 revisions to the bilateral missile guidelines, need not heighten Northeast Asian insecurity. Seoul’s interest in more economical space launch activities and an expanded space-based layer of military surveillance is understandable. South Korean measures to increase transparency, however, could reduce the chance of misperceptions about Seoul’s intentions. Similarly, South Korea could help build confidence around its ongoing missile programs.

To mitigate a worsening security dilemma with Pyongyang and potentially Beijing, Seoul should declare the scope of applications for government-sponsored research and development in larger solid rocket boosters. While publicizing existing capabilities, like the Hyunmoo-4, may be undesirable due to the current South Korean government’s inter-Korean diplomatic efforts, Seoul can do so without provocative messaging (such as threatening North Korea with decapitation attacks or strikes on hardened military sites).

Beyond this, South Korea should also transparently release plans for specific KARI-led civilian spacefaring projects and military satellites that may make use of larger solid-propellant boosters. Such transparency would reinforce Seoul’s stated plans and build confidence. At a higher level, the South Korean government should take steps to clarify its ongoing commitment to the terms of the MTCR and the Hague Code of Conduct Against Ballistic Missile Proliferation.

Meanwhile, as testing of the Hyunmoo-4 continues, South Korea should limit development on larger payload conventional missiles that could technically be compliant with the 800-kilometer-range restriction in the bilateral missile guidelines.

Separately, the United States and South Korea should work to build confidence in the region that the 2017 and 2020 changes to the guidelines will not adversely affect regional stability. To this end, they should open an ongoing bilateral consultative review of the missile guidelines. While Seoul is not seeking further changes to the guidelines, it would be productive for the allies to establish a semiannual or quarterly review of the guidelines and discuss related matters, including any issues of concern stemming from South Korean missile activities and civilian rocket research.

**South** **Korea** has seen its **security** **environment** **deteriorate** **sharply** over the last decade as its northern neighbor has reached significant missile and nuclear milestones. Meanwhile, political malaise over cost-sharing has begun to **seep** into the **foundations** **of** the bilateral **alliance** **with** the **U**nited **St**ates since 2017. In this environment, precision strike missiles and a robust, indigenous space-based constellation of military surveillance satellites can plug important perceived gaps in conventional deterrence and even hedge against plausible shifts in how the United States postures its forces on the Korean Peninsula.

But Seoul’s ability to now use solid-propellant boosters to deliver satellite payloads to low-Earth orbit should not be the primary concern in the short term. Given the already impressive capabilities embodied in the Hyunmoo-4 and its predecessor, South Korea has already made itself stand out as a leader in missile technology. But as Seoul embarks into a **new** **era** as a spacefaring nation, it should take precautions to dispel concerns about its intentions and work to build confidence while practicing effective deterrence against North Korea.

## 1NC – Case

### Noko

#### They don’t solve – their uniqueness evidence is from this year, but 1AC Davis proves Noko aggression in space has existed for years separately – inserted in green

North Korean nukes and space war

North Korea’s launch of a Hwasong-12 IRBM over Japan on 28 August, a second launch on 15 September (once again overflying Japan), and its test of what is either a boosted fission weapon or an early generation thermonuclear weapon on 3 September have accelerated the rush towards a major military crisis on the Korean peninsula. One aspect of North Korea’s nuclear developments that warrants closer attention is its ability to use nuclear weapons to generate electromagnetic pulse (EMP) attacks, or threaten low-Earth orbiting satellites in space.

The testing of higher yield nuclear weapons gives North Korea the ability to attack electrical and electronic systems over a wide area. Detonating a nuclear weapon at high altitude, such as in low-Earth orbit (LEO), would generate EMP, which would fry electrical and electronic circuits over a large geographic area.

EMP isn’t new; we’ve known about it since the Cold War, as a result of high-altitude nuclear testing such as the ‘Starfish Prime’ test in 1962. The effects of that test on terrestrial electrical systems generated concerns that the Soviet Union could blanket the US or NATO with sufficient EMP to burn out critical command and control networks and disrupt Washington’s nuclear retaliatory capability in the opening stages of a nuclear first strike. Such an attack would have had an even more devastating effect on non-hardened civilian infrastructure.

Earlier this year, North Korea’s testing of ICBMs included trajectories lofted to very high altitudes, which allowed Pyongyang to test warhead re-entry survivability, and minimised the risk of US military retaliation. The tests also demonstrated North Korea’s ability to detonate a nuclear weapon at high altitudes to generate EMP. Carrying out such an attack wouldn’t require accurate guidance, or high-yield warheads that are capable of surviving the heat of atmospheric re-entry, or even ICBMs.

A 2008 EMP Commission report (PDF) found that **exo**-**atmospheric** **detonations** of nuclear weapons would directly **affect** critical civilian **infrastructure**, most notably for power generation, telecommunications and data networks, as well as robotic industrial and manufacturing infrastructure. Analysis in June of this year on 38 North suggests that North Korea is already well placed to cause substantial damage to unprotected civilian networks using such attacks. That would hold true against the US, as well as its allies such as Japan and South Korea, or even Australia.

Evidence given by Peter Vincent Pry to the 2004 EMP Commission suggested that (PDF, p. 5) North Korea, with Russian assistance, was developing a ‘super-EMP’ weapon designed to affect a broad range of electronic systems. Such a weapon could be delivered by a missile, or it could be deployed in a satellite in a manner similar to the Soviet-era Fractional Orbital Bombardment System (FOBS).

If North Korea could detonate a nuclear weapon in space, it could also undertake a ‘**Van** **Allen’** attack that would be designed to excite and **expand** the lower Van Allen **radiation** **belt** around Earth, exposing up to 803 satellites in LEO to high levels of radiation. US Defense Threat Reduction Agency analysis in 2010 suggested that satellites in LEO, which are not hardened against radiation found in higher orbits, would be vulnerable to nuclear detonations that ‘**pumped’** the intensity of the Van Allen belts. Weeks or months of cumulative damage generated by passing through the zones of radiation would **cause** those **satellites** **to** **fail**. A Van Allen attack is highly indiscriminate: any satellite passing through the excited lower belt would be damaged. US satellites would be just as defenceless as those belonging to China, Russia or other states.

Certainly satellites could be replaced, but it would take years to completely restore the lost capability. The requirement to wait until Van Allen belts returned to normal levels of radiation, limited launch capability, long production queues, and the high cost for new satellites would slow the process down. If a combined Van Allen and EMP attack was effectively carried out, the ability to re-establish space systems could be at risk if satellite production facilities were damaged. In the interim, global economic systems would fall apart as the vital communications links for stock markets collapsed.

The Trump administration is maintaining that ‘all options are on the table’ for dealing with North Korea’s growing nuclear threat. The prospects for war on the peninsula are bad enough, with massed North Korean artillery attacks on Seoul a leading concern as well as the prospect of a general North Korean offensive into South Korea. The risk of a war escalating across the nuclear threshold raises the spectre of the first use of nuclear weapons in anger since Nagasaki—against South Korea, Japan or US territory—and the possibility that **Pyongyang** could **devastate** its **opponents’** economies with EMP and destroy vital space infrastructure with Van Allen attacks. In any war, North Korea would certainly face defeat and, with it, the end of Kim Jong-un’s regime. In confronting his fate, Kim Jong-un would have everything to gain and little to lose by employing such a devastating tactic.

#### Nonunique – host of other areas in which Noko is treated as unequal, like their nukes going unrecognized and devastating sanctions

#### Grossman has no terminal impact – it also assumes Noko stationing nukes in space, but they haven’t read ev about the feasibility of that

If North Korea could detonate a nuclear weapon in space, it could also undertake a ‘**Van** **Allen’** attack that would be designed to excite and **expand** the lower Van Allen **radiation** **belt** around Earth, exposing up to 803 satellites in LEO to high levels of radiation. US Defense Threat Reduction Agency analysis in 2010 suggested that satellites in LEO, which are not hardened against radiation found in higher orbits, would be vulnerable to nuclear detonations that ‘**pumped’** the intensity of the Van Allen belts. Weeks or months of cumulative damage generated by passing through the zones of radiation would **cause** those **satellites** **to** **fail**. A Van Allen attack is highly indiscriminate: any satellite passing through the excited lower belt would be damaged. US satellites would be just as defenceless as those belonging to China, Russia or other states.

### Debris

#### Debris creates existential 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.

#### State-sponsored programs make space militarization inevitable

Nagashiwa 20 [(Jun, Adjunct Professor at the National Defense Academy’s Graduate School of Security Studies in Japan, former Lieutenant General, MA in European Security from Tsukuba University) “The Militarization of Space and its Transformation into a Warfighting Domain,” Sasakawa Peace Foundation, 7/17/2020] JL

In 2018, the United States issued its first National Space Strategy, which recognized that its adversaries had turned space into a warfighting domain[1].Military use of space began with the Sputnik crisis in October 1957[2], which initiated the space race between the U.S. and the Soviet Union. More recently, a growing number of countries are pursuing military uses of space. India conducted an anti-satellite weapons test in March 2019 and Iran launched its first military satellite launch in April. In its reorganization in 2015, the Chinese PLA established the Strategic Support Force, which handles the fields of space, cyber, and the electromagnetic spectrum. Russia also set up an independent Space Force in the same year. In response to these developments, France established the Space Command in September 2019, and the U.S. organized the Space Force last December.

In January 2007, China carried out an anti-satellite destruction test using anti-satellite weapons (ASAT), triggering the development of space as a warfighting domain in the post-Cold War era. China needed to build asymmetric capabilities in space and cyberspace[3]as a response to an expected contingency in the Taiwan Strait. This test created a large amount of space debris and was met with intense international criticism[4]. Although space was used militarily for decades during the Cold War, both the U.S. and the Soviet Union refrained from these kinds of tests because careless physical attacks could have a significant impact on all operations in space[5]. However, China, which is pursuing a strategy of asymmetric warfare, has set foot into this “sanctuary,” and forced the United States to recognize the vulnerability of its space system[6].

Space has enormous potential for not only the development of science and technology, but also for economic growth. Globalized society is increasingly dependent on the space system, and Japan is participating in the U.S.-led Artemis Program, which aims to explore lunar space. China, which aspires to global economic leadership, is also moving to make use of cislunar space[7], and is expected to work with Russia[8]. Non-military competition in acquiring growth resources in space has already begun through the development and use of relevant technologies. Next-generation information and communications technology (ICT), quantum computing and other such technologies will reduce the vulnerability of space systems.

As space becomes a more important resource, increasing the resilience of space systems has become an urgent issue. There were about 20,000 pieces of space debris as of November 2019[9], and more players are set to enter the field with new business models that use a constellation of small, cheaper satellites. As a result, “congestion” in space is expected to become more serious. Furthermore, in addition to kinetic threats like ASAT and physical deterioration, non-kinetic threats like cyberattacks and laser obstruction are becoming more dangerous. The vulnerability of space systems will inevitably increase.

In the June 2020 U.S. Defense Space Strategy, China and Russia are labelled as the biggest operational threats to the U.S. in outer space, and are designated as parties who have weaponized space and turned it into an area of great power competition. Both China and Russia, which prioritize their own usage of space, are criticized for trying to prevent other countries from freely utilizing space[10].

Space is becoming a less stable environment, even as it holds the promise of becoming a new source of human prosperity.

There are growing signs that space is being utilized for security as the concept of the battlefield has changed with advances in technology[11].Technologies to address air and missile threats are a clear example of this. The accuracy and reliability of ballistic missile defense (BMD) systems has improved in recent years, but developments in offensive technologies have outpaced this progress. China and Russia are developing flying object threats that overwhelm defensive reaction capability in Western countries. Hypersonic glide vehicles (HGV), for example, travel at Mach 5 or higher, and missile threats with orbital change capabilities are difficult to intercept.

#### 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.

### Alliance

#### 1AC Sukin from this year is right about alliance cred being strong now – proves no impact to Soko space sector

#### US-Soko alliance is weak now – space capabilities are key to bolster it

Park 3/26 [(Si-Soo, covers space industries in South Korea, master’s degree in science journalism from Korea Advanced Institute of Science and Technology, bachelor’s degree in business from Hanyang University) “South Korean leader vows ‘landing on the moon by 2030,” Space News, 3/26/2021] JL

The U.S. Space Force’s top general expressed hope for deepening cooperation with South Korea’s military Oct. 18, saying “Katchi Kapshida,” which means “We go together” in Korean, a symbolic slogan of the long-standing Korea-U.S. alliance.

Chief of U.S. Space Operations Gen. John W. “Jay” Raymond cited the slogan during his video message for the 22nd International Aerospace Symposium at Grand InterContinental Hotel here, a biennial event organized by the Republic of Korea Air Force.

“A key part of deterrence comes from strong international partnership, mutual trust and shared value,” Raymond said. “A long-standing alliance between the United States and Republic of Korea is a great example of the strong partnership.”

He said the bilateral space partnership had been strengthened with the Aug. 27 agreement reached between him and Republic of Korea (ROK) Air Force chief of staff, Gen. Park In-ho at Peterson Air Force Base in Colorado Springs, Colorado. And having a “deeper partnership” is critical to ensure stable and peaceful use of the increasingly contested space domain, he noted. Under the agreement, the ROK Air Force will join U.S. Space Force-led joint military drills aimed at bolstering the latter’s defense capabilities in outer space. The two sides also set up a joint consultative body on space policy, share information on space surveillance and improve joint space operations capabilities such as missile defense.

“In fact, one of Space Force’s top priorities is making partnership with nations around the world, including the Republic of Korea. We are working with these nations to train together, develop capabilities together and operate together,” he said.

Benjamin S. Lambeth, a senior fellow at California-based think tank RAND Corporation, called South Korea a “formal partner” of the U.S. in space cooperation. “The ROK is now preparing to spend some $14 billion on improving its on-orbit capabilities. This suggests one solid basis for closer U.S.-ROK space ties,” Lambeth. “Another was last year’s launch of the ROK’s first military communications satellite by a U.S. Falcon 9 rocket.” He said America’s upcoming technical support to develop South Korea’s own satellite navigation system would offer “another promising venue” to enhance the partnership.

While speakers from the U.S. largely focused their presentations on how to strengthen the Space Force’s capabilities, Korean speakers discussed policies and regulations that will help bolster the nation’s space power and industry.

“Space is no longer a mere area of curiosity; rather, it has now become a key domain for our national security, and only rigorous preparation will ensure our survival in the future space environment,” said ROK Air Force chief of staff, Gen. Park In-ho. “To this end, civil-military-government cooperation has become more important than ever.”

#### 1AC Pollack is not reverse causal – doesn’t explain why Soko would sign onto BMD agreements given they said no for decades prior to having a space industry

#### Multiple factors make Asian war exceedingly unlikely—prefer robust statistical evidence

Alagappa 14 [Carnegie Endowment for International Peace, Washington, D.C. (Muthiah, “International Peace in Asia: Will it Endure?” The Asan Forum, 12/19/2014http://www.theasanforum.org/international-peace-in-asia-will-it-endure/)

Asia continues to face numerous internal and international security challenges that have or could result in the use of military force. Long-running conflicts on the Korean Peninsula, across the Taiwan Strait, and between Pakistan and India remain unresolved. A large number of territorial disputes remain, some between major countries including China, India, Japan, and Russia. The rapid rise of Asian countries (especially China), continuing historical animosities, the spread of nuclear weapon and ballistic missile capabilities, and international terrorism reinforce existing security concerns as well as pose new strategic challenges, while sustained rapid economic growth along with increased scientific and technological prowess has enabled Asian countries to develop sophisticated military capabilities. Citing these challenges and perceived institutional weaknesses in comparison with post-World War II Europe, observers—especially in the West—opined in the 1990s that Asia was “ripe for rivalry” and Europe’s past (war torn nineteenth century) would or could be its future.4 They envisioned a dangerous region in which rivalry, power-balancing, conflict, and war would be endemic. The continued rise of China (and its aggressiveness in the pursuit of disputed territorial claims) in the context of the perceived weakness of the United States in Asia as well as rising nationalism and possible miscalculation continue to fuel prognostications of conflict and war in Asia.5¶ In contrast to those dire warnings, this article makes two claims. First, Asia has witnessed a substantial reduction in the number of major and minor inter-state wars. After reaching a peak in the 1970s, major inter-state war has declined in number, frequency, and intensity measured in terms of battle deaths. From 1979 to 2014, there were only two major inter-state wars compared to 13 in 1945 to 1979. Connected to earlier wars, the nature, purpose, scope, and outcome of these wars since 1979 reinforce rather than undermine my central claim that Asia has witnessed substantial decline in major wars.6 It has even enjoyed a long period of peace, comparable in duration, nature, and complexity to the “long peace” of the Cold War in Europe.7¶ Second, the long peace in Asia will continue in the foreseeable future. Entrenched conflicts will likely remain unresolved with a few becoming even more acute. The Asian strategic environment will become more complex with growing economic interdependence, cross-cutting links, and some new security challenges. And, armed clashes cannot be ruled out. Nevertheless, major war in Asia is unlikely in the coming decade or two. I made these claims about a decade ago.8 I am now even more convinced and set them out in this article to balance the growing chorus—now, also in Asia—of conflict and war in Asia.¶ What explains the substantial decline in the frequency of major war in Asia and the claim that the inter-state peace that has endured in Asia since 1979 will continue in the foreseeable future? These are the central questions animating this article, which advances three related arguments:¶ 1. Decline in the number and intensity of inter-state wars in Asia since 1979 is due largely to the growing legitimacy of the Asian political map, rising nationalism, focus on and success in economic growth, and the development of effective deterrence in relevant dyads. Together, these developments reduced the salience as well as altered the role of force, more specifically war, in the international politics of Asia.¶ 2. Factors that underpinned the decreasing frequency of inter-state war will continue to be salient in the foreseeable future and sustain the long peace in Asia. A development that could substantially alter the strategic environment would be a shift in military technology and strategy from deterrence to offense. Such a shift would make war more costly, but also restore it as a rational instrument of policy in pursuit of certain political objectives.

#### Deterrence checks Korean conflict – it still applies to Kim Jong Un

Blechman 13, Co-founder of the Stimson Center (Barry, Nuclear deterrence could restrain N. Korea, Iran, www.cnn.com/2013/04/30/opinion/blechman-nuclear-deterrence/)

In response to North Korea's recent threats to launch nuclear attacks, the U.S. announced it would bolster missile defenses in Alaska and California and speed the deployment of missile interceptors to Guam. With respect to Iran, President Obama said as recently as March 20: "We will do what is necessary to prevent Iran from obtaining the world's worst weapons.'' America currently has about 5,000 nuclear weapons. Even though it could retaliate against a hypothetical Iranian or North Korean nuclear attack and obliterate both nations while utilizing only 1 or 2% of its arsenal, the Obama administration is acting as if the theory of deterrence no longer applies. Why? Nuclear weapons: Who has what? It appears that the U.S. is treating Iran differently than other countries trying to go nuclear because it perceives Iranian leaders as aggressive religious fanatics willing to sacrifice everything for their goals. After all, Iran supports terrorist organizations, conducts assassinations and bombings, seeks to subvert neighboring countries, and makes fearsome threats against Israel and the U.S. Similarly, the U.S. seems uncertain about North Korea's young and untested new leader. Pyongyang not only has a history of provocative verbal threats, but it has taken reckless military actions as recently as two years ago, when the North sank a South Korean naval vessel and shelled an island occupied by the South. But wait -- didn't the Soviet spout dangerous rhetoric and take deadly actions? Didn't some of their leaders threaten to "bury" America and nuke London and Paris? And let's not forget that Leonid Brezhnev launched proxy wars against U.S. friends in Latin America, Africa and Asia. Yet the Obama administration seems to think that while Soviet leaders were deterred from using their massive arsenal, the Iranians and the North Koreans might not be deterred from using a nuclear force of no more than a handful of weapons at best. North Korea's missile capabilities But if deterrence theory is valid, then this double standard is invalid. Both Iran's and North Korea's supreme leaders will be deterred, just as were successive generations of Soviet leaders. Both would not authorize the use of nuclear weapons, for fear of seeing their nations destroyed, their people wiped out, and their ambitions for themselves and their countries turned to dust. If deterrence theory is no longer valid, the U.S. had better work harder to achieve President Obama's Nobel Prize-winning goal of a world in which no nation possesses nuclear weapons. No one can say with great confidence what North Korea's Kim Jong Un will do. While the U.S. needs to be prepared for North Korea to act on Kim's threats of nuclear war, unless he has lost his mind, it seems doubtful that he would follow through and commit national suicide by inviting devastating nuclear retaliation.

#### Preemptive US cyber capabilities reduce the risk of escalation to zero---experts are on our side

Pickrell 17, Ryan , Asia Pacific Reporter, 4-6-2017, "It’s ‘100% Possible’ To Knock Kim Jong-un’s Nukes Offline Without Firing A Shot," Daily Caller, http://dailycaller.com/2017/04/06/its-100-possible-to-knock-kim-jong-uns-nukes-offline-without-firing-a-shot/

President Donald Trump has stated that the U.S. will use “the full range of military capabilities” to defend America and its allies against North Korea, and one possible option could be cyber warfare. “It is 100 percent possible” that the U.S. could prevent a nuclear strike by hacking a North Korean missile, David Kennedy, a cyber warfare and intelligence expert, told Business Insider. North Korea’s offensive capabilities are improving. The North could probably attack South Korea or Japan with a nuclear-armed missile, and it is developing the ability to strike the U.S. South Korea and Japan are protected by layered defense, such as the South’s Korea Air and Missile Defense system, multiple Aegis destroyers, and Patriot Advanced Capability interceptor units. The U.S. has ground-based midcourse defense systems in Fort Greely, Alaska and Vandenberg Air Force Base, California. Missile defense systems are not surefire safety nets though. Not only have these systems never been tested in an actual combat scenario, they have failed in past drills. Missile defense is complicated, as it essentially involves hitting a bullet with another bullet. The U.S. and its allies could perhaps use cyber warfare to boost their defensive capabilities. “Within military intelligence spaces, this is” is how things work, Dr. Ken Geers told BI, adding, “If you think that war is possible with a given state, you are going to be trying to prepare the battle space for conflict. In the internet age, that means hacking.” Kennedy asserts that the U.S. could “plant [malicious] code in all of the missiles that could ever be launched, their guidance systems and everything else and only use it in the event we detected an actual launch happening that was overtly going towards us.” Perhaps the implanted code could cause the missile “to launch back at them and blow up in their face.” Some observers, including the New York Times, suspect that North Korean missile failures may be the result of a U.S. cyber campaign against North Korea’s missile program. Other analysts attribute North Korea’s unsuccessful missile launches to poor-quality missiles, unreliable equipment, and incompetence. Kim Jong-un is well aware of this threat and believes that allied forces may be behind certain unexpected complications during weapons testing. The young dictator requested an investigation last fall into whether or not the U.S. and its allies were using cyber warfare to sabotage the North’s efforts to develop a reliable missile program. The probe began after North Korea had two back-to-back failures in October, reports the International Business Times. Awareness and the ability to address the threat are two very different things, and it appears North Korea does not yet have the tools to eliminate this threat to its missile program, especially if code were buried in hardware devices. The use of cyber warfare and other approaches to take out potential ballistic missile threats are known as “left of launch” tactics — preemptive strike methods involving non-kinetic technologies, such as electromagnetic propagation and cyber warfare to eliminate nuclear and ballistic missile threats prior to or just after launch.