# 1NC

## 1

### CAPs NC

#### The aff burden is to show that, on balance, any individual private entity would have an obligation not to appropriate outer space, whether or not other entities do the same.

#### The aff is an invalid inference that ignores collective action problems. Showing that a world with no appropriation is good doesn’t prove that any private entity could have an obligation not to.

Elster 85

Jon Elster (the Robert K. Merton Professor of the Social Sciences). “Rationality, Morality, and Collective Action.” Ethics, Vol. 96, No. 1 (Oct., 1985), pp. 136-155. JDN. https://www.jstor.org/stable/2381329

Consider next interpersonal magic. It has been shown that-when placed before a hypothetical choice of whether or not to vote-people can be induced to act in a way that can be rationalized as follows. I am a fairly typical member of my political reference group. If I vote, it is pretty likely that others will vote as well. Being like me, they will tend to act like me. Hence I shall indeed vote, to bring it about that others vote as well. The last step in this reasoning is a slide from unexceptional diagnostic thinking to an unjustified causal argument. The slide is well- known from many other contexts, the best known being the psychology of Calvinism and the philosophical conundrum known as Newcomb's problem.'7 A statement from an eighteenth-century Baptist leaflet is a perfect illustration: "Every soul that comes to Christ to be saved . . . is to be encouraged.... The coming soul need not fear that he is not elected, for none but such would be willing to come."' 8 In **collective action,** this form of irrational inference may be connected with the What if everyone did that? question. That question invites us to compare two states of the world: the one in which everyone votes and the one in which no one votes. If these two were really the only options, then it would have to be the case that by deciding to vote rather than to abstain I could also bring it about that all others make the same choice. Of course, **there are many other possibilities**, such as the state of the world in which I do not vote but some others do, but this is not allowed by the terms of the question. To ask, What if everyone did that? is not exactly like asking someone if he has stopped beating his wife, but it shares with the latter a certain insinuating quality. To the extent that the persuasive force of the question derives from an **invalid inference**, irrationality rather than duty may be the cement of society, a socially beneficial illusion, like Voltaire's God. It may not be a good thing if social scientists spend too much of their time discussing such connections among rationality, morality, and collective action.

#### That’s specifically true for act util. No company can force others to comply, so the risk of aff offense is zero, and any risk of local costs outweighs.

Sandler 10

Ronald Sandler (Northeastern University, Philosophy and Religion, Faculty Member). “Ethical Theory and the Problem of Inconsequentialism: Why Environmental Ethicists Should be Virtue Oriented Ethicists.” Journal of Agricultural and Environmental Ethics (23:1-2) pp. 167-83, 2010. JDN. https://www.academia.edu/10464539/Ethical\_Theory\_and\_the\_Problem\_of\_Inconsequentialism\_Why\_Environmental\_Ethicists\_Should\_be\_Virtue\_Oriented\_Ethicists

According to act utilitarianism, an action is right to the extent that it brings about the best (or good enough) consequences of all the courses of action available to the agent.3 Act utilitarian reasoning provides the clearest formulation of the problem of inconsequentialism. Almost any action performed by almost any agent will have a **vanishingly small effect** on longitudinal collective action environmental problems.4 Many of these same actions will have burdens for the agent and those close to her (i.e. family and friends), in terms of, for example, time, economic costs, social costs, and professional costs. In such cases the local utility of actions that contribute to longitudinal collective action problems (or that fail to address the problems) will outweigh the inconsequential global utility of those actions. Therefore, act utilitarianism cannot explain why we ought to act or live in ways responsive to longitudinal collective action problems when doing so has costs or sacrifices associated with it. This suggests two features that a normative theory well resourced for addressing the problem of inconsequentialism will exhibit: 1. That discrete actions are not evaluated entirely on the basis of the outcomes (or likely outcomes) of the action. 2. That it evaluate on the basis of patterns of behavior or activities throughout a person’s life or patterns among people or communities.

#### Negate—if ruin is inevitable through tragedy of the commons, the only ethical act left open to individuals is to appropriate

Schmidtz 90

David Schmidtz (Professor of Philosophy at Yale). The Monist, Vol. 73, No. 4, Property Rights, pp. 504-518. Oxford University Press. October 1990. JDN. https://www.jstor.org/stable/27903207

The moral of the story is this. As latecomers arrive and natural resources become scarce, anything left in the commons will be levelled. This much is not news, at least not to readers of Garrett Hardin.13 What really is news is this: leaving goods in the commons fails to satisfy the Proviso. In fact, leaving goods in the commons practically ensures their ruin. The essence of **the Tragedy of the Commons**, what makes it tragic, is precisely that not enough and as good is left for others. As a necessary condition for satisfying the Proviso, goods must be removed from the commons. Moreover, the more severe the scarcity, the faster resources will be destroyed in the commons, and thus the more urgently the Proviso will require that resources be removed from the commons.

Needless to say, there is more than one institutional framework that can effectively remove goods from the commons, ranging from private property to public property to national borders. For present purposes, **this makes no difference.** We are not trying to decide which institutions are most effective, or even which are justified, but only that the establishment of exclusive control, which they all presume, can be justified.

At any rate, there is no incentive to nurture apple trees in the commons. In the commons, the fruits of production (so to speak) belong to others as much as to oneself. If one does not want to starve, one is better off spending one's time eating (while one can) rather than producing. If only we had the power to decide how everyone will act. There might not be any point in removing resources from the commons. We could satisfy the Proviso by choosing for everyone to abide by principles of efficient and equitable harvesting. But we choose for ourselves, not for everyone. And what people should choose for themselves differs from what would be right (and from what the Proviso would require) if they were choosing for everyone.

What does this general point imply about the commons? The commons might never be levelled if we could choose for everyone to leave enough and as good for others, but the fact that people choose for themselves makes a difference to what counts as leaving enough and as good for others. (To decide that everyone will leave a piece of land alone would be to protect it; to decide to leave it alone oneself is merely to leave it unprotected.) In the commons, we could naively restrain ourselves, waiting our turn and then eating only our share. But it wouldn't help. Those who do otherwise will still precipitate the tragedy of the commons. Our only choices in this unfolding tragedy would be these: join in the mad rush to mutual starvation, refuse to join the rush and be the first to starve, or **stake a claim** we can defend, rhetorically and otherwise. Only if some people successfully implement the latter choice is there any chance of the Proviso being satisfied.

Are those who initially catalyze this mad rush doing something wrong? Of course; in particular, they are violating the Proviso. But whether their actions are right or wrong is not really the point. The point is that until access to the land is restricted, people will have the opportunity and the incentive to overuse it, and some of them as a matter of fact will overuse it, thereby not leaving enough and as good for others. A moral agent has to take this into account when deciding how to go about ensuring that there will be something left for her children. And simply allowing the commons to go to ruin at the hands of other foragers most emphatically is not the way to ensure that something will be left for her children. If one is to satisfy the Proviso in a way that has some positive bearing on the preservation of mankind, one must, first and foremost, satisfy the Proviso insofar as it applies to things like apples, i.e., food. But if one merely appropriates apples, one is not satisfying the Proviso with respect to apples. Those who appropriate apples from the commons violate the Proviso (on any interpretation of it) insofar as it pertains to apples. They generate the tragedy of the commons. Since appropriating apples ignores the Proviso with respect to apples, the tragedy created by those who appropriate apples alters what the Proviso means as a constraint on appropriations of land. In other words, some alteration of the rules of access to apples is necessary if the Proviso with respect to apples is to be satisfied. The Proviso itself drives us to make this alteration, and so our interpretation of the Proviso must reflect the fact that it drives us to alter the rules of access to apples? i.e., to restrict access to apples.

Specifically, to appropriate land is to restrict access to apples. And restricted access to apples tends (somewhat paradoxically) to be a precondition of the ongoing availability of apples. To satisfy the Proviso with respect to apples, one must appropriate land rather than apples. Hence, **land appropriation is not a violation** of the Proviso (given that the Proviso applies first and foremost to food) under those circumstances, **but** must instead be **required** by it. I will say more about the Proviso with respect to land at the end of the following section

## 2

### ASAT CP

#### Text: Spacefaring nations should agree to a binding international treaty that bans debris-generating anti-satellite testing in space

* Implementation as in the Bateman 22 card

#### The time to act is now to avoid normalizing blowing up satellites in orbit. The key is targeting behavior – not specific actors or systems – that competes with the Aff.

Bateman 22

Aaron Bateman, “Anti-Satellite weapons are creating space hazards. Here’s a way to limit the damage.” Bulletin of the Atomic Scientists January 21, 2022. <https://thebulletin.org/2022/01/anti-satellite-weapons-are-creating-space-hazards-heres-a-way-to-limit-the-damage/> -CAT

As companies and countries clamor to launch satellites and manned spacecraft, space is getting ever more crowded. And because satellites play increasingly important roles in military operations, multiple governments are developing anti-satellite (ASAT) weapons. But debris generated by anti-satellite weapons tests, like the one Russia conducted late last year, poses a significant threat to use of space, whether by militaries or private enterprises. Since 2007, the United States, China, and India have also carried out debris-producing activities, creating a hazardous environment for satellites and human spaceflight. While many experts agree that debris-producing weapons tests in space should be prohibited, very little progress has been made toward achieving this goal. There’s a key obstacle in the way of formal anti-satellite weapons limits: Many countries around the world are developing missile defense systems, and several of the technologies used in missile defense are applicable to anti-satellite weapons. In the last two decades of the Cold War, the United States and the Soviet Union went through multiple rounds of arms control negotiations that included discussions specifically aimed at limits on anti-satellite weapons. While Moscow and Washington made significant progress on nuclear arms reductions, talks about the “controlled use of space” did not lead to anti-satellite arms control agreements. But there is a path toward eliminating the damage of the space weapons tests without limiting weapons technologies that can be used as anti-satellite weapons: A ban on debris-generating anti-satellite testing in space. Such a ban would be verifiable and circumvent the difficulty of eliminating whole categories of weapons technologies. Anti-satellite weapons and the Cold War. In the summer of 1960, the United States successfully launched its first imagery intelligence satellite, called Corona, into orbit. On its first mission, Corona imaged more of the Soviet Union than all of the previous U-2 reconnaissance plane flights combined. Very quickly, satellites became the largest source of intelligence on the Soviet Union. American national security leaders feared that a US anti-satellite weapon program would have risked spurring the Soviets to act aggressively against US space systems, putting vulnerable intelligence satellites at risk. To this end, President Dwight Eisenhower set the precedent of pursuing an international political framework that would ensure the viability of satellite reconnaissance. But anxiety about orbital nuclear weapons prompted the US government to embrace a hedge. Fearful of the potential for Soviet space-based nuclear weapons, President John F. Kennedy, approved a land-based nuclear-tipped anti-satellite weapons system called Program 437. By the time of the program was established, US scientists had already learned that high-altitude nuclear detonations could damage or destroy American satellites. Officials believed that Program 437 was of very limited utility. In Moscow, however, Program 437 was likely used as a justification to accelerate its own anti-satellite weapons effort aimed at having the capability to destroy US military and intelligence satellites. By the late 1960s, the United States and the Soviet Union both recognized the legitimacy of overflights from space. At this same time, the Soviets, however, had begun testing a non-nuclear co-orbital anti-satellite system. Damage to a space shuttle. Unknown space debris once damaged the Space Shuttle Endeavor. Anti-satellite weapons are creating more debris in space. Not wanting to undermine the American-Soviet arms control talks, President Richard Nixon refused to approve a new anti-satellite weapons program in response to the Soviet effort. Largely due to ongoing arms control negotiations, the Soviet Union ceased testing anti-satellite weapons in space in 1971, lowering tensions over space security. When in 1972 the United States and the Soviet Union signed the Anti-Ballistic Missile Treaty and the Strategic Arms Limitation Treaty, they included a provision that neither party would interfere with the other’s reconnaissance satellites, which were used to monitor treaty compliance. But the calm wouldn’t last long. The Soviets resumed testing in 1975, and President Gerald Ford ordered a reexamination of US anti-satellite weapons policy. Prominent American physicist Solomon Buchsbaum would oversee the review. Buchsbaum maintained that satellites would increasingly play essential roles in supporting tactical military operations and would therefore be critical targets in a wartime situation. The review noted that Soviet satellites used to support naval targeting provided reason enough for the United States to begin developing a new space weapons. Primarily due to the growing tactical use of military space systems, Buchsbaum concluded that “treating space as a sanctuary [was] neither enforceable nor verifiable” and that “the Soviets should not be allowed an exclusive sanctuary in space.” Ford embraced these findings, and in his final days in office, he signed a national security memorandum directing the creation of a new anti-satellite weapons program. Buchsbaum and his team, nevertheless, maintained that it was worthwhile to consider arms control proposals that would limit anti-satellite weapons designed to attack higher-attitude satellites that were used for nuclear command and control and early warning. It would be left up to Jimmy Carter to decide how to proceed on anti-satellite weapons arms control. Shortly after his arrival in the White House, Carter made securing a new arms control treaty with the Soviet Union a top priority. Since the treaty would rely on satellites for verification, Carter believed unfettered development of anti-satellite weapons could undermine treaty ratification. He wanted to completely ban anti-satellite systems and maintained that the benefits of getting rid of them outweighed the Ford administration’s favored arguments about the utility of the weapons in wartime. The Pentagon warned that verification of anti-satellite limits would be a significant challenge because it would be difficult to monitor all Soviet military hardware with anti-satellite applications. To address this problem, US officials recommended banning dedicated weapons, but not systems with residual anti-satellite capabilities, e.g., missile defenses that did not have a primary anti-satellite mission. During the Carter administration, the United States and the Soviet Union went through multiple rounds of anti-satellite weapons talks in 1978 and 1979. The parties disagreed over definitions; Soviet negotiators, for example, wanted the United States to place limits on the space shuttle because they deemed it anti-satellite capable, but US officials refused to put the shuttle on the negotiating table. To place added pressure on Moscow, Carter authorized the Pentagon to move ahead with anti-satellite weapons development, including tests in space, though no debris-producing tests would be conducted while he was president. Despite disagreements, Moscow and Washington were making progress towards agreeing to a moratorium on testing anti-satellite weapons in space, along with a prohibition on displacing each other’s satellites. In essence, even though the two sides were unable to agree to limits on anti-satellite or anti-satellite-capable weapons, a ban on certain behaviors, i.e., debris-producing tests and physical interference with satellites, was a possibility. But world events interrupted the diplomatic progress. After the Soviet Union invaded Afghanistan in 1979, the talks stalled. In stark contrast to Carter, President Ronald Reagan embraced the military utility of anti-satellite weapons; his administration publicly identified their importance for denying the Soviet Union the use of space and for deterring attacks against US satellites. And Reagan sought expeditious development of an air-launched anti-satellite weapon, commissioning a study for implementing his national space policy based on the premise that the Soviet Union had “initiated a major campaign to capture the ‘high ground’ of space.” The most significant space-related development during Reagan’s presidency was his establishment of the Strategic Defense Initiative, a research program to develop the technologies for land- and space-based missile defense. Shortly after the president announced the program in March 1983, the Soviet Union proposed a moratorium on anti-satellite weapons testing that would eventually lead to their dismantlement. Because anti-satellite weapons and space-based missile defense relied on many of the same technologies, the Soviet proposal to limit anti-satellite systems would have constrained the Strategic Defense Initiative. Despite the Reagan administration’s emphasis on the military value of anti-satellite weapons, recently declassified documents reveal that in 1984 the president was considering proposing a treaty that would limit offensive space weapons, i.e., anti-satellite systems, and allow defensive ones, i.e., space-based missile defense. Reagan told his senior advisors that “we should first talk about getting rid of these offensive arms like this F-15 [anti-satellite weapons]. We must make it clear that we are not seeking advantage, only defense.” He said, moreover, that the United States was “willing to negotiate the end of [anti-satellite weapons] because they are offensive weapons. [Strategic Defense Initiative] is a non-nuclear defensive system.” Chief of Naval Operations Admiral James Watkins replied that the planned air-launched anti-satellite weapon was “not the answer to the military’s prayer” and could “be given up, from a military point of view, but it must be remembered that this is closely related to [the Strategic Defense Initiative].” Other members of Reagan’s national security team explained that the Strategic Defense Initiative’s interceptors could also serve as anti-satellite weapons, and that it was therefore impossible to distinguish between offensive and defensive space weapons. At this same time, Kenneth Adelman, the head of the Arms Control and Disarmament Agency, an independent agency of the US government that focused on arms control negotiation and implementation until its dissolution in 1999, recommended negotiating “rules of the road” that would establish boundaries for military activities in space, but this was not positively received by other administration officials. Members of an inter-agency anti-satellite weapons working group considered multiple arms control options, including a ban on high-altitude systems and new generations of low-altitude systems, but the Department of Defense was vehemently opposed to any form of space arms control because of its plans for more sophisticated anti-satellite weapons and because of the potential impact on the Strategic Defense Initiative. Because preserving the Strategic Defense Initiative was a top priority, Reagan ended up rejecting any limits on anti-satellite weapons. In 1985, the United States conducted the first and only test of its air-launched, Miniature Homing Vehicle system that included destruction of a US satellite. But due to congressional opposition to anti-satellite weapons, lawmakers prohibited further debris-producing tests and the Pentagon cancelled the Miniature Homing Vehicle program in 1988. Anti-satellite weapons after the Cold War. After the Cold War came to an end, the US government cut funding for space-based missile defense and anti-satellite weapons. The Russian Federation moved its anti-satellite weapons programs into a mothballed status and focused on other priorities. In these changing geopolitical circumstances, restraint in space was restored, but this was a tenuous situation at best. Though Moscow and Washington had made significant progress on nuclear arms reductions in the Nuclear and Space Talks of the 1980s, they did not agree to any new binding measures regarding the use of space for military purposes. The United States demonstrated that space systems were essential for modern warfare during the first Gulf War, which also highlighted the reality that satellites were a key vulnerability for US national security. To ensure unfettered access to space in wartime, Air Force Vice Chief of Staff General Thomas Moorman advocated that the United States develop the means for militarily controlling space. Because of US dependence on space systems, the federal government commissioned a special panel to reexamine the organization and management of the American national security space enterprise. The panel’s chair, Donald Rumsfeld, warned of the potential for a “Pearl Harbor in space” and that space security, therefore, demanded renewed focus. When former President George W. Bush selected Rumsfeld as his secretary of defense, the president was choosing someone with a long history of endorsing space control capabilities. The linkage between missile defense and anti-satellite weapons would once again become a key problem for space security in the post-Cold War era. The first really significant development for space security in the 21st century was Bush’s announcement in 2001 that the United States would withdraw from the 1972 Anti-Ballistic Missile Treaty, citing concerns about “rogue states” like North Korea and Iran. This move contributed to the proliferation of missile defense systems, which, of course, could also be used as anti-satellite weapons. A watershed moment in space security was a 2007 Chinese weapons test that produced significant debris in low earth orbit. This was the first debris-generating anti-satellite weapons test in over 20 years. The tacit norm of not conducting destructive weapons tests in space was shattered. According to media reports, the Bush administration knew of the test ahead of time but said nothing in order to “maintain maximum flexibility for developing antimissile defenses.” Washington, along with diplomats from around the world, resolutely condemned the test. Approximately one year after the Chinese test, the United States executed Operation Burnt Frost, which involved shooting down a US satellite that had reached its end of life. The Bush administration had determined that the satellite’s toxic hydrazine posed a significant environmental risk and ordered the Pentagon to destroy it. The Navy used an SM-3 missile, designed for missile defense, to eviscerate the satellite shortly before reentry to minimize debris generation. Even though the operation was officially due to health and safety concerns, its occurrence so soon after the Chinese demonstration made the US action appear to be a response to Beijing. Even though then-Vice Chairman of the Joint Chiefs General James Cartwright described the use of the SM-3 in an anti-satellite role as “a one-time deal,” the current director of the Missile Defense Agency, Vice Admiral John Hill, recently referred to the SM-3 as a “space weapon.” In recognition of the changing space security environment, the Obama administration declared that space was “congested, contested, and competitive,” a policy position that, harkened back to the late 1970s, when Carter recognized that the United States and the Soviet Union were moving towards making space into a potential battleground. But former President Barrack Obama did not, however, take meaningful steps towards engaging with the international community to constrain either the development or testing of anti-satellite weapons. The administration rejected the European Union’s proposed Space Code of Conduct, which emphasized freedom of access to space, among other areas, describing it as “too restrictive.” In other words, there was concern that agreeing to the non-binding code of conduct could box in US military space activities and plans. Obama did not reinvigorate the country’s anti-satellite efforts in response to space security concerns, but he also did not act to curb the harmful effects of anti-satellite weapons testing in space. In certain key areas, former President Donald Trump’s national security space policy recycled the space language of the Reagan administration. Trump famously created the US Space Force as an independent service and called for “projecting military power in, from, and to space.” Space, Trump said, is “going to be a very big part of our defense and offense,” insisting on the need for space-based missile defense. During Trump’s presidency, the Department of Defense began to formally refer to space as a warfighting domain. Despite these re-organizations and introduction of more aggressive space policy language, the United States has focused on developing technologies that wouldn’t physically destroy satellites, electronic warfare capabilities for instance. After India, an important US partner, destroyed one of its own satellites in 2019, the then-Acting Secretary of Defense Patrick Shanahan called for developing “rules of the road” for space. But just as in the 1980s, diplomatic engagement on norms development in space was not an administration priority. In his first year in office, President Joe Biden has had to contend with Russia’s first debris-producing anti-satellite weapons test in the 21st century. Moscow has conducted multiple tests that did not involve destroying a space object, and it is not yet clear why the Russian government conducted this particular test, especially when it could have endangered astronauts and Russian cosmonauts on the International Space Station. Perhaps the test was a “screw up” and the Russians did not intend to intercept the target in a way that produced so much debris. Regardless, the test incident highlighted the reality that debris produced by anti-satellite weapons is a serious threat to commercial, civil, and national security space operations, a reality that has been proven time and time again since the Cold War. Deputy Secretary of Defense Kathleen Hicks has called for an end to debris-producing anti-satellite weapons tests. Biden’s nominee to become the assistant secretary of defense for space policy, John Plumb, similarly backs a moratorium on destructive testing of the space weapons. It’s time to make an international agreement banning debris-generating anti-satellite weapons tests a top administration priority. Learning from the past. The present space security environment is similar to the situation in the late 1970s and 1980s, but also different in key respects. The US government is once again openly discussing concerns about the vulnerability of space systems, along with the potential for military action to, in, and from space. Key differences are that anti-satellite weapons technologies have significantly progressed and the number of countries and commercial entities operating in space has grown exponentially. During the Cold War, space security was primarily defined by US-Soviet engagement, but bilateral arrangements will be insufficient for the present situation. Because space systems play such important roles in modern warfare, it is only to be expected that militaries around the world will develop the means to interfere with satellites in wartime. Many countries are investing more in missile defense capabilities that can be used as anti-satellite weapons as well. Israel, for example, has alluded to the fact that it could use its Arrow system in an anti-satellite weapons role if needed in the future. Due to this situation, the missile defense-anti-satellite weapons “entanglement” continues to be a significant problem and an impediment to limits on the weapons. All hope is not, however, lost. A key lesson from the Cold War is that proposals aimed at limiting behaviors in space are likely to be more easily achieved than attempting to limit or ban whole classes of weapons systems with anti-satellite applications. The United States and the Soviet Union discussed anti-satellite limits multiple times, but definitional differences and concerns over verification stymied progress. It is, nevertheless, very well possible that had the American-Soviet anti-satellite weapons talks continued past 1979 a mutual testing moratorium would have been achieved. For the United States in the 1980s, the fact that anti-satellite weapons constraints would have limited missile defense development was the primary problem. At different points in time, Moscow and Washington did, however, limit their respective testing activities in space. This emphasis on banning debris-producing space tests in no way suggests that other space arms control proposals should not be considered or pursued. For example, discussions aimed at preventing kinetic and non-kinetic interference with satellites used for nuclear command and control and early warning could reduce the likelihood of nuclear escalation. But the objective here is to secure an agreement, in the near term, that will lead to a more sustainable space environment. Securing formal constraints on dual-use technologies with anti-satellite weapons applications is going to be a long-term and uphill battle. To promote stability in space, the United States, Russia, China, India, and other countries should focus on finally establishing a prohibition against debris-producing tests. This will, at the very least, prevent the further generation of harmful debris in space due to weapons testing. It is indeed verifiable and overcomes the political challenges associated with securing a multi-party arms control agreement that bans specific weapons systems that can be used as anti-satellite weapons. Developing rules of the road for space has long been on the diplomatic agenda, and it is time to act before debris-producing tests become a behavioral norm.

#### The CP 1) better solves debris and 2) avoids catastrophic space war

Erwin 21

U.S. generals planning for a space war they see as all but inevitable by Sandra Erwin — September 17, 2021 Space News Senior Staff Writer Sandra Erwin writes about military space programs, policy, technology and the industry that supports this sector. She has covered the military, the Pentagon, Congress and the defense industry for nearly two decades as editor of NDIA’s National Defense Magazine and Pentagon correspondent for Real Clear Defense. <https://spacenews.com/u-s-generals-planning-for-a-space-war-they-see-as-all-but-inevitable/> -CAT

A ship in the Pacific Ocean carrying a high-power laser takes aim at a U.S. spy satellite, blinding its sensors and denying the United States critical eyes in the sky. This is one scenario that military officials and civilian leaders fear could lead to escalation and wider conflict as rival nations like China and Russia step up development and deployments of anti-satellite weapons. If a satellite came under attack, depending on the circumstances, “the appropriate measures can be taken,” said Lt. Gen. John Shaw, deputy commander of U.S. Space Command. Lt. Gen. John Shaw, deputy commander of U.S. Space Command. Credit: Tom Kimmell Photography The space battlefield is not science fiction and anti-satellite weapons are going to be a reality in future armed conflicts, Shaw said at the recent 36th Space Symposium in Colorado Springs. U.S. Space Command is responsible for military operations in the space domain, which starts at the Kármán line, some 100 kilometers (62 miles) above the Earth’s surface. This puts Space Command in charge of protecting U.S. satellites from attacks and figuring out how to respond if hostile acts do occur. Military space assets like satellites and ground systems typically have been considered “support” equipment that provide valuable services such as communications, navigation data and early warning of missile launches. But as the Pentagon has grown increasingly dependent on space, satellites are becoming strategic assets and coveted targets for adversaries. “It is impossible to overstate the importance of space-based systems to national security,” Air Force Secretary Frank Kendall said in a keynote speech at the symposium. Shaw noted that Gen. John Hyten, the vice chairman of the Joint Chiefs of Staff, “likes to talk about satellites as being ‘big fat juicy targets.’” “I agree with that,” said Shaw. “But how do we change that? How do we make it more difficult for a potential adversary to think they could succeed in depriving us of our space capabilities?” Those questions are now being debated as Space Command develops what Shaw describes as “space warfighting doctrine.” A laser blinding a satellite is just an example of the types of attacks the U.S. has to prepare for, said Shaw. If that happened, the Defense Department would have to decide how to respond to that threat. Conceivably, naval or aerial forces would be called upon to take retaliatory action. “[W]e are only starting to grapple with… what space warfighting really means,” Shaw said. U.S. in a ‘long-term strategic competition’ A competition for space dominance between the United States and rival powers China and Russia prompted the Trump administration and Congress in 2019 to re-establish U.S. Space Command — which had been deactivated since 2002 — and create the U.S. Space Force as an independent service branch. Kendall, who was sworn in late July as the civilian leader of the Air Force and the Space Force, said the United States is in a “long-term strategic competition” with China. The implications for space are significant, he said, as “China has moved aggressively to weaponize space.” The Space Force will invest in new capabilities to deter and win if deterrence fails, Kendall said. Any type of escalation can result in miscalculations and human errors which is why a space war is a “conflict that no one wants,” he said. The U.S. military’s space weapons that presumably would deter China from firing the first shot against a satellite are classified. In a rare disclosure, the Space Force last year said it deployed an advanced ground-based communications jammer made by L3Harris that could be used as an “offensive weapon” to disrupt enemies’ satellite transmissions. Chris Kubasik, L3Harris vice chairman and CEO, said there should be more awareness of the risks of an attack against a satellite precipitating a broader conflict. “I think it’s the biggest threat facing our nation,” Kubasik said at the Space Symposium. A war in space would be “detrimental to society” because satellites play such a central role in everyday life for most people. “If you think of the impact of a war in space and how it impacts something as simple as our cellphones, navigation, supply chain, logistics, healthcare. I think it is a serious issue. And I think we have to continue to talk about it.” Public awareness and education about the nation’s dependence on space are needed to help DoD “get the funding to make sure that we deter or defeat our adversaries in space,” he said. Unlike conflicts on Earth, a space war is not easy to visualize. “I call it an invisible war with invisible hardware that people can’t see, it’s a little different than being here on the ground,” said Kubasik. Travis Langster, vice president and general manager of Comspoc. Credit: Tom Kimmell Photography First shot could be against satcom The military’s reliance on commercial satellites for communications makes these systems one of the most likely targets of enemy jammers and cyber disruptions, said Travis Langster, vice president and general manager of Comspoc, a company that monitors space traffic and tracks orbital activities. “Given the plethora of commercial space, based on the observations and activities we’ve seen at Comspoc, the target of that first shot is likely to be a commercial satellite,” Langster said during a Space Symposium panel discussion. By launching an electronic or cyberattack against a commercial satellite that is used by DoD for military operations, an enemy would be “trying to send a very specific message” that it does not draw a line between commercial and military space assets. The most likely scenario is a “reversible attack,” meaning some temporary loss of a space-based service, said Langster. “In this day and age, the first shot will likely be a cyberattack.” Carey Smith, CEO of defense and cybersecurity contractor Parsons, said space-based networks already are under attack. “Jamming is occurring today; there’s obviously cyber attacks that are occurring across the infrastructure,” she said. And there have been many documented attempts to interfere with communications signals in war zones where U.S. forces operate. Carey Smith, CEO of defense and cybersecurity contractor Parsons. Credit: Tom Kimmell Photography But the question is whether these activities will escalate and lead to broader conflict. “I think the path to war in space is really based upon a space arms race, and we’ve been fortunate that we’ve been able to delay it up until this point, but it is perhaps imminent,” she added. A key reason why the space race is accelerating is that technology is advancing so rapidly, Smith said. A second reason is the absence of “binding commitments on what the operating norms are going to be in space,” she said. “And without that, we’re very likely to have a space war.” The only foundation of international space law that currently exists, the 1967 Outer Space Treaty, is outdated and doesn’t address most space security issues that could set off a war, Smith noted. The treaty bans the stationing of weapons of mass destruction in outer space, prohibits military activities on celestial bodies and contains legally binding rules governing the peaceful exploration and use of space. But a new set of rules is needed for the current space age, Smith said. “We really haven’t addressed some of the very difficult questions. Can a nation tailgate another nation’s satellite? Is preemptive self defense going to be permissible? Are we going to ban any form of weapons in space?” Frank Backes, senior vice president of space and defense contractor Kratos, echoed that sentiment. “We’ve seen very intentional interference within regional conflicts to take military systems offline,” he said. Of particular concern to the Pentagon are disruptions to satellite communications networks that are used to operate unmanned surveillance aircraft. Drones rely on GPS and satellite communications systems to track and strike targets. “Those types of reversible effects have already entered into the space layer, but I agree with Carrie Smith. It is the space race that is turning space into a warfighting domain,” said Backes. “What that looks like going forward definitely could be devastating to our commercial and international use of space.” DoD wants resilient space architecture Experts point out that there are increasingly more ways to permanently or temporarily damage satellites so it would be virtually impossible for DoD to defend against a multitude of weapons. China and Russia, for example, have direct-ascent weapons that are launched on a sub-orbital trajectory to strike a satellite in orbit. They also have co-orbital weapons that are placed into orbit and then later maneuvered toward their intended target. Additionally, China and Russia are deploying non-kinetic space weapons, according to the Center for Strategic and International Studies. These include lasers that can be used to temporarily dazzle or permanently blind sensors on satellites, and jamming devices that interfere with the communications to or from satellites by generating noise in the same radio frequencies. In the face of these threats, the United States aims to make space networks more resilient by using a diversity of satellites in different orbits,complicating an adversary’s ability to launch an effective attack. Kendall said resiliency “isn’t just about the individual satellite, it’s about the architecture.” DoD’s Space Development Agency is looking to demonstrate what it hopes will be a more resilient space architecture. The agency is working to deploy a proliferated constellation of small satellites in low Earth orbit as an alternative to the traditional large, expensive spacecraft that DoD has traditionally flown in higher orbits but much smaller numbers. “We’re getting away from ‘juicy targets’,” said SDA Director Derek Tournear. The idea of a proliferated architecture is to have enough satellites in orbit that “we can handle some attrition.”

## 3

### Appropriation CP

#### Counterplan: Private entities’ Large Satellite Constellations in Lower Earth Orbit are unjust.

#### The counterplan’s ban covers the exact same extent of activities as the plan, BUT it doesn’t rely on classifying LSCs as appropriation as a basis for banning them.

#### The plan’s precedent shreds the non-appropriation principle. Allowing in de facto appropriation extends it beyond meaningfulness.

Matignon 19 [Louis de Gouyon Matignon, PhD in space law from Georgetown University, “ORBITAL SLOTS AND SPACE CONGESTION,” 06/03/19, *Space Legal Issues*, https://www.spacelegalissues.com/orbital-slots-and-space-congestion/, EA]

Near-Earth space is formed of different orbital layers. Terrestrial orbits are limited common resources and inherently repugnant to any appropriation: they are not property in the sense of law. Orbits and frequencies are res communis (a Latin term derived from Roman law that preceded today’s concepts of the commons and common heritage of mankind; it has relevance in international law and common law). It’s the first-come, first-served principle that applies to orbital positioning, which without any formal acquisition of sovereignty, records a promptness behaviour to which it grants an exclusive grabbing effect of the space concerned. Geostationary orbit is a limited but permanent resource: this de facto appropriation by the first-comers – the developed countries – of the orbit and the frequencies is protected by Space Law and the International Telecommunications Law. The challenge by developing countries of grabbing these resources is therefore unjustified on the basis of existing law. Denying new entrants geostationary-access or making access more difficult does not constitute appropriation; it simply results from the traditional system of distribution of access rights. The practice of developed States is based on free access and priority given to the first satellites placed in geostationary orbit.

#### A risk they reduce OST cred means the CP solves better and the aff fails—maintaining clear principles is key to enforceable space law.

Pershing 19

Abigail Pershing (J.D. Candidate @ Yale, B.A. UChicago). “Interpreting the Outer Space Treaty’s Non-Appropriation Principle: Customary International Law from 1967 to Today.” Yale Journal of International Law 44, no. 1. 2019. JDN. https://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=1697&context=yjil

Under the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (commonly known as the Outer Space Treaty), no State has the right to claim as sovereign territory the moon or any other celestial body. 4 Some critics see the Outer Space Treaty as merely an outdated relic from the Cold War era,5 but there are good reasons for maintaining the **fundamental principles** undergirding the law in its current form. If the Treaty were repealed or interpreted to allow a free-for-all, first-come, first-served method of allocating space property rights (as some have suggested either should, or will, happen),6 this would likely produce **an extremely chaotic and unequal allocation of resources.** Developing nations that currently lack space capabilities would be at a **significant disadvantage** relative to States possessing such capabilities, and the ensuing State actions would likely result in an unequal territorial grab leaving few, if any, resources for those nations technologically incapable of space exploration.

#### Only co-op can solve the aff

Kerrest 11

Armel Kerrest (Head of the public law department of the University of Western Brittany; Chairman of the Institute of Law of International Spaces and Telecommunications). "Outer Space as International Space: Lessons from Antarctica." in Science Diplomacy: Antarctica, Science, and the Governance of International Spaces, edited by Berkman, Paul Arthur, Lang, Michael A., Walton, David W. H., and Young, Oran R., 133–142. Smithsonian Contributions to Knowledge. 2011. JDN. https://doi.org/10.5479/si.9781935623069.133

There are many cooperations in outer space, both multilateral, for example, the activities of the International Space Station, and bilateral. Even during the cold war, some cooperations between the two superpowers took place. These cooperations are mostly performing some task together and are not targeted at jointly regulating outer space itself and the activities conducted there.

Over the last few years, it has appeared **more and more obvious** that some kind of international regulations are necessary. The increase in the number of spacefaring states, the danger coming from space debris, the necessity to rationalise space traffic on some overcrowded orbits, the trend to weaponize outer space, and the projects aimed at the Moon, Mars, and other celestial bodies increase **the necessity to enter into cooperation**, especially if the **use of the resources** of theses bodies is concerned.

# 1AC

## Collisions

### AT: Kessler---1NC

#### Kessler syndrome is a process not an event---timeframe is decades and intervening actors check.

Burns Interviewing Kessler **’**13 Corrinne Burns, interviewing Donald Kessler, who made up the concept. [Space junk apocalypse: just like Gravity? 11-15-2013, https://www.theguardian.com/science/blog/2013/nov/15/space-junk-apocalypse-gravity]//BPS

Now? Are we in trouble? Not yet. Kessler syndrome isn't an acute phenomenon, as depicted in the movie – it's a slow, decades-long process. "It'll happen throughout the next 100 years – we have time to deal with it," Kessler says. "The time between collisions will become shorter – it's around 10 years at the moment. In 20 years' time, the time between collisions could be reduced to five years." Fortunately, communications satellites are, in the main, situated high up in geosynchronous orbit (GEO), whereas the risk of collisions lies mainly in the much lower, and more crowded, low Earth orbit (LEO). But that doesn't mean we can relax. "We've got to get a handle on it – we need to prevent the cascade process from speeding up." And the only way to do that is, he says, to begin actively removing junk from space. Charlotte Bewick agrees. She's a mission concepts engineer with the German space technology company OHB System, with special expertise in space junk – specifically, how we can capture it and bring it back to Earth. While agreeing with Kessler that the movie scenario is exaggerated, she remains concerned. "Fragments of junk can naturally re-enter the atmosphere [and so be removed from orbit]. But we're at the stage where the rate of creation of new debris fragments is higher than the rate of natural removal. The orbits most at risk harbour important space assets – satellites for weather forecasting, oil spill and bush fire detection, and polar ice monitoring." Bewick highlights the case of Envisat, a defunct 8,000kg spacecraft circling Earth in an orbit that is very popular with space agencies and, hence, pretty crowded. "If Envisat collides with a piece of debris or a micrometeorite, the fragments could render the whole orbital region unusable." So can we get the junk down, I asked Massimiliano Vasile, part of the Mechanical & Aerospace Department at the University of Strathclyde and co-ordinator of the Stardust network. He told me defunct satellites in the high GEO region have, for some time, been shifted to higher "graveyard orbits" to keep them out of the way. But that's not an option for items in low Earth orbit. For this, he tells me, researchers are looking seriously into active debris removal – in-orbit capture techniques like harpooning, netting and tethering, the use of contactless systems like ion-beams or lasers, and even onboard robotics to position the junk away from high-risk orbital regions. As for middle Earth orbit – well, ideas are welcome, he says. We're in no immediate danger from Kessler syndrome – but it's not a problem that's going away. Despite Gravity's artistic license, Donald Kessler is pleased to see the phenomenon represented on the big screen. "It is very improbable that events would play out as they did in the film," he says. "But if it raises awareness, then that's great."

#### Tracking systems solves space dust.

**Mosher** **’19** [Dave; September 3rd; Journalist with more than a decade of experience reporting and writing stories about space, science, and technology; Business Insider, “Satellite collisions may trigger a space-junk disaster that could end human access to orbit. Here’s How,” <https://www.usafa.edu/app/uploads/Space_and_Defense_2_3.pdf>; GR]

The Kessler syndrome plays center-stage in the movie "Gravity," in which an accidental space collision endangers a crew aboard a large space station. But Gossner said that type of a runaway space-junk catastrophe is unlikely. "Right now I don't think we're close to that," he said. "I'm not saying we couldn't get there, and I'm not saying we don't need to be smart and manage the problem. But I don't see it ever becoming, anytime soon, an unmanageable problem." There is no current system to remove old satellites or sweep up bits of debris in order to prevent a Kessler event. Instead, space debris is monitored from Earth, and new rules require satellites in low-Earth orbit be deorbited after 25 years so they don't wind up adding more space junk. "Our current plan is to manage the problem and not let it get that far," Gossner said. "I don't think that we're even close to needing to actively remove stuff. There's lots of research being done on that, and maybe some day that will happen, but I think that — at this point, and in my humble opinion — an unnecessary expense." A major part of the effort to prevent a Kessler event is the Space Surveillance Network (SSN). The project, led by the US military, uses 30 different systems around the world to identify, track, and share information about objects in space. Many objects are tracked day and night via a networkof radar observatories around the globe. Optical telescopes on the ground also keep an eye out, but they aren't always run by the government. "The commercial sector is actually putting up lots and lots of telescopes," Gossner said. The government pays for their debris-tracking services. Gossner said one major debris-tracking company is called Exoanalytic. It uses about 150 small telescopes set up around the globe to detect, track, and report space debris to the SSN. Telescopes in space track debris, too. Far less is known about them because they're likely top-secret military satellites. Objects detected by the government and companies get added to a catalog of space debris and checked against the orbits of other known bits of space junk. New orbits are calculated with supercomputers to see if there's a chance of any collisions. Diana McKissock, a flight lead with the US Air Force's 18th Space Control Squadron, helps track space debris for the SSN. She said the surveillance network issues warnings to NASA, satellite companies, and other groups with spacecraft, based on two levels of emergency: basic and advanced. The SSN issues a basic emergency report to the public three days ahead of a 1-in-10,000 chance of a collision. It then provides multiple updates per day until the risk of a collision passes. To qualify for such reporting, a rogue object must come within a certain distance of another object. In low-Earth orbit, that distance must be less than 1 kilometer (0.62 mile); farther out in deep space, where the precision of orbits is less reliable, the distance is less than 5 kilometers (3.1 miles). Advanced emergency reports help satellite providers see possible collisions much more than three days ahead. "In 2017, we provided data for 308,984 events, of which only 655 were emergency-reportable," McKissock told Business Insider in an email. Of those, 579 events were in low-Earth orbit (where it's relatively crowded with satellites).

#### Modeling proves.

Drmola 18 [Jakub Drmola, Division of Security and Strategic Studies, Department of Political Science at the Faculty of Social Sciences of Masaryk University. Tomas Hubik, Department of Theoretical Computer Science and Mathematical Logic, Faculty of Mathematics and Physics, Charles University. Kessler Syndrome: System Dynamics Model. Space Policy Volumes 44–45, August 2018, Pages 29-39. https://www.sciencedirect.com/science/article/pii/S0265964617300966?via%3Dihub]

The probabilities and rates of collisions of objects from different groups were calculated using a coefficient converting the rate of collisions between objects from one group to the rate of collisions between objects from another group. The initial base rate was estimated using iterative simulations and comparison of the resulting runs with real data and outputs from other models. Detailed model built by a group of researchers from the Lawrence Livermore National Laboratory was used as a base for the calibration [see 9]. As the major factor influencing collision probability is size, the probability increases with square of the diameter representing bigger area for possible impact. Speed would be another factor influencing the probability of impacts, but the speed depends on the distance from the Earth and is not influenced by debris size. It means that it will not vary between different debris groups and thus will not influence the collision probability conversion parameters in our model.

One the most important limitations and simplifications of the model is the uncertainty of size, structure, and composition of the satellites—i.e. what debris the satellite will disintegrate into in case of a collision. Perhaps even more crucially, the rate of orbital decay changes significantly with the altitude and eccentricity of the trajectory. The lower the orbital altitude is or the more eccentric it is, the more drag the object experiences as it passes through the last vestiges of our atmosphere. Therefore, objects in the lower or more eccentric orbit will decay significantly faster. Thus, the actual lifetime of a piece of debris can easily vary from days to centuries. It also needs to be noted that while it may take many decades for a satellite to decay (especially from the popular orbits between 500 km and 800 km), we cannot assume the same about debris. That is because while satellite orbits typically have very low eccentricity, collisions result in fragments with velocities and trajectories that vary and differ from the original intact satellite (i.e. are more eccentric and decay faster). This makes estimating rate of orbital decay of debris quite difficult, especially when combined with the ongoing laudable efforts by Inter-Agency Space Debris Coordination Committee (IADC) to shorten the lifetime of satellites after they cease planned operations [14], [15].

Therefore, both the orbital and structural parameters used here are (and must be) overall averages designed to represent a “general LEO satellite” and are based on previous fragmentations, of which there are but few. Furthermore, this is getting increasingly more difficult as satellites are getting progressively more diverse, especially with the ongoing boom of the miniaturized CubeSats [16]. This leads to a relatively wide and heterogeneous population of real satellites being represented by a single, homogenized stock of simulated satellites in the model. It is also uncertain and difficult to predict how exactly is this going to evolve in the far future, what proportion of launched satellites will be of which size, and into which orbit they will be placed. Lacking precise information, we simply extrapolate current and expected trends.

5. Scenarios and simulation results

5.1. Business as usual and beyond

The baseline scenario represents a continuation of the current trends, which are simply extended into the future. An average 1% growth rate of yearly launches of new satellites (starting at 89) is assumed, together with constant success rate in satellites’ ability to actively avoid collisions with debris and other satellites, constant lifetime, and failure rate. This basic model lacks any sudden events or major policy changes that would markedly influence the debris propagation. However, it serves both as a foundation for all the following scenarios and as a basis of comparison to see what the impact would be.

Given high uncertainty regarding future state of the satellite industry (how many satellites will be launched per year, of what type and size, etc.), we elected to limit our simulations to 50 years. The model can certainly continue beyond this point, but the associated unknowns make the simulations progressively less useful.

Running this model for its full 50 years (2016–2066) yields the expected result of perpetually growing amount of debris in the LEO. One can observe nearly 2-fold increase in the large debris (over 10 cm) and 3-fold increase in small debris (less than 1 cm) quantities (Fig. 5). The oscillations visible in the graph are caused by the aforementioned solar cycles which influence the rate of reentry for all simulated populations except the still active (i.e. powered) satellites. Also please note that throughout the article, the graphs use quite different scales for debris populations because of the considerable variations between scenarios. Using any single scale for all graphs would render some of them unintelligible.

We can see that this increase in numbers still does not result in realization of the Kessler syndrome as most of the satellites being launched remain intact for their full expected service life. However, it comes with a considerable increase in risk to satellites, which is manifested by their higher yearly losses, making satellites operations riskier and more expensive for governments and private companies alike. This increased amount of debris in LEO combined with the larger number of active satellites makes it approximately twice as likely that an active satellite will suffer a disabling hit or a total disintegration during its lifetime. It should be noted that this risk might possibly be offset by future improvements in satellite reliability, debris tracking, and navigation [17].

### AT: War---1NC

#### Kessler induces restraint, not war.

Bowen 18 [Bleddyn, Lecturer in International Relations at the University of Leicester; ELN; 20 Februrary 2018; “The Art of Space Deterrence,” <https://www.europeanleadershipnetwork.org/commentary/the-art-of-space-deterrence/>] brett

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 miscalc from satellite disruptions or space dust -- empirically denied.

Mazur 12 (Jonathan Mazur, Manager Engineering at Northrop Grumman, writing in Space & Defense, from the Eisenhower Center for Space and Defense Studies. Past U.S. Actions: Redlines in Space. Space & Defense, Volume 6, Number 1, Fall 2012. https://inss.ndu.edu/Portals/97/Space\_and\_Defense\_6\_1.pdf?ver=2018-09-06-135424-147)

U.S. Reactions To Foreign Disruption Of U.S. Capabilities

In the 1970s, it was suspected that a U.S. maritime communications satellite was turned off by the Soviets when it was outside of the range of U.S. tracking stations.25 There does not appear to be any documented U.S. reaction, and I suspect there was none. In the mid-1990s, satellite hackers in Brazil began hijacking U.S. military communication satellite signals to broadcast their own information, though it took until 2009 for Brazil to crack down on the illegal activity with the support of the DoD.26 In 1998, a U.S.-German satellite known as ROSAT was rendered useless after it turned suddenly toward the sun. NASA investigators later determined the accident was possibly linked to a cyber-intrusion by Russia.

The fallout? Though there was an ongoing criminal investigation as of 2008; NASA security officials have seemed determined to publicly minimize the seriousness of the threat.27 In 2003, a signal originating from Cuba—later determined to be coming from Iranian embassy property— was jamming a U.S. communications satellite that was transmitting Voice of America programming over Iran, which was publicly referred to as an “act of war” by a U.S. official. 28 Press reporting indicates the U.S. administration was [frozen]“paralyzed” about how to cope with the jamming that continued for at least a month, even after U.S. diplomatic protests to Cuba.29 In 2005, U.S. diplomats protested to the Libyan government after two international satellites were illegally jammed disrupting American diplomatic, military, and FBI communications.30 In 2006, press reporting indicates that China hit a U.S. spy satellite with a ground-based laser. This action was acknowledged by the then director of the NRO, though the DoD remained tight lipped about the incident.31

“We’re at a point where the technology’s out there, and the capability for people to do things to our satellites is there. I’m focused on it beyond any single event.” – Air Force Space Command Commander, General Chilton, 2006 32

marked

In 2009, a U.S. commercial Iridium communications satellite—extensively used by the DoD—was accidently destroyed by a collision with a dead Russian satellite.33 The U.S. company, Iridium, was able to minimize any loss of service by implementing a network solution within a few days.34 As of early 2011, no legal action had been taken by the company either because it is not clear who was at fault or because it might be politically problematic for the United States, which is trying to enter into bi-lateral transparency and confidence-building measures (TCBM) with Russia regarding space activities.35 Since August of 2010, North Korea has been intermittently using GPS jamming equipment, which reportedly has been interfering with U.S. and South Korean military operations and civilian use south of the North Korean border.36 Reportedly, only South Korea and the United Nations International Telecommunications Union—at the request of South Korea—have issued letters to Pyongyang demanding the cessation of disruptive communications signals in South Korea.37

It appears that the only time the U.S. military has responded with force to a disruption in U.S. space capabilities was in 2003, a few days after the start of the Iraq war.38 According to U.S. officials, Iraq was using multiple GPS jammers—which supposedly did not affect military GPS functionality. However, the U.S. military bombed the jammers anyway after a diplomatic complaint to Russia.39 The use of military force against the GPS jamming threat was possibly because the United States was already intervening in Iraq, and the bombing probably would not have occurred if the United States was not at war.

### Impct D

#### Space war is impossible – limited access, attribution, and interdependence.

James Pavur 19, Professor of Computer Science Department of Computer Science at Oxford University and Ivan Martinovic, DPhil Researcher Cybersecurity Centre for Doctoral Training at Oxford University, “The Cyber-ASAT: On the Impact of Cyber Weapons in Outer Space”, 2019 11th International Conference on Cyber Conflict: Silent Battle T. Minárik, S. Alatalu, S. Biondi, M. Signoretti, I. Tolga, G. Visky (Eds.), <https://ccdcoe.org/uploads/2019/06/Art_12_The-Cyber-ASAT.pdf>

A. Limited Accessibility Space is difficult. Over 60 years have passed since the first Sputnik launch and only nine countries (ten including the EU) have orbital launch capabilities. Moreover, a launch programme alone does not guarantee the resources and precision required to operate a meaningful ASAT capability. Given this, one possible reason why space wars have not broken out is simply because only the US has ever had the ability to fight one [21, p. 402], [22, pp. 419–420]. Although launch technology may become cheaper and easier, it is unclear to what extent these advances will be distributed among presently non-spacefaring nations. Limited access to orbit necessarily reduces the scenarios which could plausibly escalate to ASAT usage. Only major conflicts between the handful of states with ‘space club’ membership could be considered possible flashpoints. Even then, the fragility of an attacker’s own space assets creates de-escalatory pressures due to the deterrent effect of retaliation. Since the earliest days of the space race, dominant powers have recognized this dynamic and demonstrated an inclination towards de-escalatory space strategies [23]. B. Attributable Norms There also exists a long-standing normative framework favouring the peaceful use of space. The effectiveness of this regime, centred around the Outer Space Treaty (OST), is highly contentious and many have pointed out its serious legal and political shortcomings [24]–[26]. Nevertheless, this status quo framework has somehow supported over six decades of relative peace in orbit. Over these six decades, norms have become deeply ingrained into the way states describe and perceive space weaponization. This de facto codification was dramatically demonstrated in 2005 when the US found itself on the short end of a 160-1 UN vote after opposing a non-binding resolution on space weaponization. Although states have occasionally pushed the boundaries of these norms, this has typically occurred through incremental legal re-interpretation rather than outright opposition [27]. Even the most notable incidents, such as the 2007-2008 US and Chinese ASAT demonstrations, were couched in rhetoric from both the norm violators and defenders, depicting space as a peaceful global commons [27, p. 56]. Altogether, this suggests that states perceive real costs to breaking this normative tradition and may even moderate their behaviours accordingly. One further factor supporting this norms regime is the high degree of attributability surrounding ASAT weapons. For kinetic ASAT technology, plausible deniability and stealth are essentially impossible. The literally explosive act of launching a rocket cannot evade detection and, if used offensively, retaliation. This imposes high diplomatic costs on ASAT usage and testing, particularly during peacetime. C. Environmental Interdependence A third stabilizing force relates to the orbital debris consequences of ASATs. China’s 2007 ASAT demonstration was the largest debris-generating event in history, as the targeted satellite dissipated into thousands of dangerous debris particles [28, p. 4]. Since debris particles are indiscriminate and unpredictable, they often threaten the attacker’s own space assets [22, p. 420]. This is compounded by Kessler syndrome, a phenomenon whereby orbital debris ‘breeds’ as large pieces of debris collide and disintegrate. As space debris remains in orbit for hundreds of years, the cascade effect of an ASAT attack can constrain the attacker’s long-term use of space [29, pp. 295– 296]. Any state with kinetic ASAT capabilities will likely also operate satellites of its own, and they are necessarily exposed to this collateral damage threat. Space debris thus acts as a strong strategic deterrent to ASAT usage.

## Space Militarization

### UQ

#### Squo is solving

**Baklitskiy**, A. **12/1** (2021, December 1). Andrey Baklitskiy is a senior research fellow at the Institute of International Studies at MGIMO University, Russia. He was a participant and speaker at ECFR’s latest EU-Russia strategy group, which took place online on 15 November. At this meeting, around 30 leading experts and policymakers from Europe and Russia gathered to share their views on the recent crises in eastern Europe, the renewed dialogue between the US and Russia, and the role of climate in EU-Russia relations. *Small victories: Why us-Russia relations could improve under Biden*. ECFR. Retrieved January 5, 2022, from https://ecfr.eu/article/small-victories-why-us-russia-relations-could-improve-under-biden/ // sosa

In this environment, it is hard to be optimistic about the Biden administration’s prospects for improving US-Russia relations. However, there might be some hope for stabilising – and perhaps even slightly improving – the relationship.

Firstly, the sides are clear-eyed about each other. For the first time in more than a decade, leaders in Moscow have no illusions that a change in the occupant of the White House could lead to the change in the general US approach to Russia. President Joe Biden, for his part, does not seem to believe that Russia will go away or change into something that is more acceptable to the US – which means dealing with Moscow as it is.

Secondly, Biden’s foreign policy centres on growth at home, international stability, managed competition with China, and efforts to address global challenges such as climate change and the covid-19 pandemic. Russia will have an important role to play in any UN-based solutions to these challenges, which heightens its importance to the US administration. The country could also be important to solving regional conflicts in the Middle East, Africa, and Asia. And the US might want to minimise its confrontation with Russia so that it can focus on China. Russian foreign policy, which often forms a reaction to what leaders in Moscow perceive as US offences, could become less confrontational in response to reduced pressure from Washington (be it in relation to sanctions, military affairs, or even rhetoric).

Thirdly, Moscow and Washington have an interest in dealing with not just traditional security issues such as nuclear and conventional deterrence but also newer ones, particularly cyber. To these ends, they will use diplomatic channels wherever possible.

Therefore, one can realistically expect the US and Russia to dismantle at least some of that infrastructure of confrontation discussed above. This could involve prisoner exchanges and the normalisation of the work of their embassies – even if, so far, there has been little progress on either front.

Russia and the US could also agree on arms control measures and some level of cooperation in cyberspace. Since Biden came to power, the sides have taken several modest but promising steps in their dialogue on strategic stability. The ransomware crisis that struck the US in the first months of the Biden presidency has dissipated, presumably thanks to cooperation with Russia.

Finally, Russia and the US have already teamed up to promote joint solutions to international problems at the United Nations. In October 2021, the two countries jointly submitted a resolution on cyber norms at the UN General Assembly. Therefore, they could engage in further such cooperation.

In the last few months, US-Russia diplomacy has involved a flurry of activity and high-level visits. There are rumours that the sides will hold a virtual summit before the end of the year and an in-person meeting in early 2022. Presidential meetings are a good mechanism through which to assess this progress, declare a few achievements, and perhaps agree to specific breakthroughs in areas where the bureaucracy is unable to do so by itself.

Biden’s reluctance to continue the fight against the Nord Stream 2 pipeline indicates that his administration could ease the pressure on Russia in some of the most important spheres. It seems that, so long as there is no new crisis, the administration will have little appetite for a confrontation with Moscow.

### Turn

#### Turn – increasing private activities solves space war and ASAT restraint.

Cobb 21 [Wendy N. Whitman Cobb, Associate Professor of Strategy and Security Studies at the School of Advanced Air and Space Studies, “Privatizing Peace: How Commerce Can Reduce Conflict in Space,” 2021, Routledge, pp. 68-69, EA]

Finally, given the involvement of an ever-larger number of private actors in space, states also need to consider the lost opportunity costs if private actors choose to forego research, development, and deployment of new technologies because the danger in space is too high. As space becomes more commercialized, these private actors can exert pressure on states to behave peacefully in order to promote further economic development. Gartzke and Quan Li argue that this can happen through the movement of capital from conflict-prone states or areas to non-conflictual states.50 This is not necessarily applicable to space because there is no area in space which is formally protected, but commercial space actors may choose not to engage in new economic investment which can in turn affect a state’s economic performance. To date, the size of the space sector is comparatively small, so, arguably, the potential economic loss would not be that great. Where the harm comes from is state reliance on private actors for military and national security space services. As states contract out space services to a greater extent, private actors exert an even greater influence over the state by having a capability they do not.

Why might private companies want a more conflict-free space? If there is weaponized conflict in space, they could potentially benefit through new launches to send up replacement satellites; this is similar to an argument that war can actually be beneficial to an economy because companies are needed to create materiel and weapons.51 But, in a debris filled environment, sending replacements is more difficult and dangerous. Some private companies want to engage in human spaceflight; a conflictual or more dangerous orbital environment would likely prevent those activities or increase their costs to such an extent that it becomes economically infeasible. James Clay Moltz argues specifically that “the growing presence of space tourists in low-Earth orbit would greatly increase the incentives for restraint in any future [ASAT] test programs.”52 Those foregone development costs and commercial activities can have a similar cost to states simply by discouraging private actors from participating in the market.