# 1NC vs Strath Haven AM

### 1NC – Off

#### Interpretation: “Appropriation of outer space” by private entities refers to the exercise of exclusive control of space.

TIMOTHY JUSTIN TRAPP, JD Candidate @ UIUC Law, ’13, TAKING UP SPACE BY ANY OTHER MEANS: COMING TO TERMS WITH THE NONAPPROPRIATION ARTICLE OF THE OUTER SPACE TREATY UNIVERSITY OF ILLINOIS LAW REVIEW [Vol. 2013 No. 4]

The issues presented in relation to the nonappropriation article of the Outer Space Treaty should be clear.214 The ITU has, quite blatantly, created something akin to “property interests in outer space.”215 It allows nations to exclude others from their orbital slots, even when the nation is not currently using that slot.216 This is directly in line with at least one definition of outer-space appropriation.217 [\*\*Start Footnote 217\*\*Id. at 236 (“Appropriation of outer space, therefore, is ‘the exercise of exclusive control or exclusive use’ with a sense of permanence, which limits other nations’ access to it.”) (quoting Milton L. Smith, The Role of the ITU in the Development of Space Law, 17 ANNALS AIR & SPACE L. 157, 165 (1992)). \*\*End Footnote 217\*\*]The ITU even allows nations with unused slots to devise them to other entities, creating a market for the property rights set up by this regulation.218 In some aspects, this seems to effect exactly what those signatory nations of the Bogotá Declaration were trying to accomplish, albeit through different means.219

#### Violations: private appropriation of extracted debris is distinct from appropriation “of” outer space. Despite longstanding permission of appropriation of extracted resources, sovereign claims are still universally prohibited.

Abigail D. Pershing, J.D. Candidate @ Yale, B.A. UChicago,’19, "Interpreting the Outer Space Treaty's Non-Appropriation Principle: Customary International Law from 1967 to Today," Yale Journal of International Law 44, no. 1

II. THE FIRST SHIFT IN CUSTOMARY INTERNATIONAL LAW’S INTERPRETATION OF THE NON-APPROPRIATION PRINCIPLE Since the drafting of the Outer Space Treaty, several States have chosen to reinterpret the non-appropriation principle as narrower in scope than its drafters originally intended. This reinterpretation has gone largely unchallenged and has in fact been widely adopted by space-faring nations. In turn, this has had the effect of changing customary international law relating to the non-appropriation principle. Shifting away from its original blanket application in 1967, States have carved out an exception to the non-appropriation principle, allowing appropriation of extracted space resources.53 This Part examines this shift in the context of the two branches of the United Nation’s customary international law standard: State practice and opinio juris. A. State Practice The earliest hint of a change in customary international law relating to the interpretation of the non-appropriation clause came in 1969, when the United States first sent astronauts to the moon. As part of his historic journey, astronaut Neil Armstrong collected moonrocks that he brought back with him to Earth and promptly handed off to the National Aeronautics and Space Administration (NASA) as U.S. property.54 Later, the USSR similarly claimed lunar material as government property, some of which was eventually sold to private citizens. 55 These first instances of space resource appropriation did not draw much attention, but they presented a distinct shift marking the beginning of a new period in State practice. Having previously been limited by their technological capabilities, States could now establish new practices with respect to celestial bodies. This was the beginning of a pattern of appropriation that slowly unfolded over the next few decades and has since solidified into the general and consistent State practice necessary to establish the existence of customary international law. Currently, the U.S. government owns 842 pounds of lunar material.56 There is little question that NASA and the U.S. government consider this material, as well as other space materials collected by American astronauts, to be government property.57 In fact, NASA explicitly endorses U.S. property rights over these moon rocks, stating that “[l]unar material retrieved from the Moon during the Apollo Program is U.S. government property.”5 The U.S. delegation’s reaction to the language of the 1979 Moon Agreement further cemented this interpretation that appropriation of extracted resources is a permissible exception to the non-appropriation clause of Article II. Although the United States is not a party to the Moon Agreement, it did participate in the negotiations.59 The Moon Agreement states in relevant part: Neither the surface nor the subsurface of the moon, nor any part thereof or natural resources in place, shall become property of any State, international intergovernmental or nongovernmental organization, national organization or nongovernmental entity or of any natural person.60 In response to this language, the U.S. delegation made a statement laying out the American view that the words “in place” imply that private property rights apply to extracted resources61—a comment that went completely unchallenged. That all States seemed to accept this point, even those bound by the Moon Agreement, is further evidence of a shift in customary international law.62 B. Opinio Juris: Domestic Legislation Domestic law, both in the United States and abroad, provides further evidence of the shift in customary international law surrounding the issue of nonappropriation as it relates to extracted space resources. Domestic U.S. space law is codified at Section 51 of the U.S. Code and has been regularly modified to expand private actors’ rights in space.63 Beginning in 1984, the Commercial Space Launch Act provided that “the United States should encourage private sector launches and associated services.”64 The goal of the 1984 Act was to support commercial space launches by private companies and individuals.65 It did not, however, specifically discuss commercial exploitation of space. The first such mention of commercial use of space appeared in 2004, with the Commercial Space Launch Amendments Act.66 This Act specifically aimed at regulating space tourism but did not explicitly guarantee any private rights in space.67 The most significant change in U.S. space law came with the passage of the Spurring Private Aerospace Competitiveness and Entrepreneurship (SPACE) Act in 2015. As incorporated into Section 51 of the Code, this Act provides: A United States citizen engaged in commercial recovery of an asteroid resource or a space resource under this chapter shall be entitled to any asteroid resource or space resource obtained, including to possess, own, transport, use, and sell the asteroid resource or space resource obtained in accordance with applicable law, including the international obligations of the United States.68 Whereas the idea that private corporations might go into space may have seemed far-fetched to the drafters of the Outer Space Treaty, the SPACE Act of 2015 was the first instance of a government recognizing such a trend and officially supporting private companies’ commercial rights to space resources under law. With the new 2015 amendment to Section 51 in place, U.S. companies can now rest assured that any profits they reap from space mining are firmly legal—at least within U.S. jurisdictions. Although the United States was the first country to officially reinterpret the non-appropriation principle, other countries are following suit. On July 20, 2017, Luxembourg passed a law entitled On the Exploration and Utilization of Space Resources with a vote of fifty-five to two.69 The law took effect on August 1, 2017.70 Article 1 of the new law states simply that “[s]pace resources can be appropriated,” and Article 3 expressly grants private companies permission to explore and use space resources for commercial purposes.71 Official commentary on the law establishes that its goal is to provide companies with legal certainty regarding ownership over space materials—a goal that the commentators regard as legal under the Outer Space Treaty despite the non-appropriation principle.72 The next country to enact similar legislation may be the United Arab Emirates (UAE). According to the UAE Space Agency director general, Mohammed Al Ahbabi, the UAE is currently in the process of drafting a space law covering both human space exploration and commercial activities such as mining.73 To further this goal, in 2017 the UAE set up the Space Agency Working Group on Space Policy and Law to specify the procedures, mechanisms, and other standards of the space sector, including an appropriate legal framework.74 C. Opinio Juris: Legal Scholarship Other major space powers are also considering similar laws in the future, including Japan, China, and Australia. 75 Senior officials within China’s space program have explicitly stated that the country’s goal is to explore outer space and to take advantage of outer space resources.76 The general international trend clearly points in this direction in anticipation of a potential “space gold rush.” 7 Mirroring the shift in State practice and domestic laws, the legal community has also changed its approach to the interpretation of the nonappropriation principle. Whereas at the time of the ratification of the Outer Space Treaty the majority of legal scholars tended to apply the non-appropriation principle broadly, most legal scholars now view appropriation of extracted materials as permissible.78 Brandon Gruner underscores that this new view is historically distinct from prior legal interpretation, noting that modern interpretations of the Outer Space Treaty’s non-appropriation principle differ from those of the Treaty’s authors.79 In contrast to earlier legal theory that denied the possibility of appropriation of any space resources, scholars now widely accept that extracting space resources from celestial bodies is a “use” permitted by the Outer Space Treaty and that extracted materials become the property of the entity that performed the extraction.80 Stressing the fact that the Treaty does not explicitly prohibit appropriating resources from outer space, other authors conclude that the use of extracted space resources is permitted, meaning that the new SPACE Act is a plausible interpretation of the Outer Space Treaty.81 However, scholars have been careful to cabin the extent to which they accept the legality of appropriation. For instance, although Thomas Gangale and Marilyn Dudley-Rowley acknowledge the legality of private appropriation of extracted space resources, they nonetheless emphasize that “[o]wnership of and the right to use extraterrestrial resources is distinct from ownership of real property” and that any such claim to real property is illegal.82 Lawrence Cooper is also careful to point out this distinction: “[t]he [Outer Space] Treaties recognize sovereignty over property placed into space, property produced in space, and resources removed from their place in space, but ban sovereignty claims by states; international law extends this ban to individuals.”83 Although there remain some scholars who still insist on the illegality of the 2015 U.S. law and State appropriation of space resources generally,84 their dominance has waned since the 1960s. These scholars are now a minority in the face of general acceptance among the legal community that minerals and other space resources, once extracted, may be legally claimed as property. 85 Taken together, the elements described above—statements made in the international arena, de facto appropriation of space resources in the form of moon rocks, the adoption of new national policies permitting appropriation of extracted space resources, and the weight of the international legal community’s opinion— indicate a fundamental shift in customary international law. The Outer Space Treaty’s non-appropriation clause has been redefined via customary international law norms from its broad application to now include a carve-out allowing appropriation of space resources once such resources have been extracted.

#### Standards:

#### Limits – their interpretation means that affs about any outer space activity would be topical: mining, photography, sending rovers, collecting ice cores, launching satellites, deflecting debris, can’t sell rocks on EBAY, etc. This explodes neg prep burdens since outer space activity is so vague – no generics exist to answer both the photography and the rovers aff, so affs would just win with a tiny impact every round

#### Ground – allowing debates about extracting any space resource denies the neg links to core generics like space democracy bad, space colonization good, the moon pic, the property rights NC, etc. – that kills clash by forcing negatives to the fringes of argumentation that disagree with everything and kills fairness by giving the aff a major prep advantage since they only need to frontline the few negative arguments that link to their aff.

#### Fairness and education are voters – debate’s a game, and fairness is necessary to determine the winner of the game, and education is the reason why schools fund debate.

#### Drop the debater – dropping the argument doesn’t rectify abuse since winning T proves why we don’t have the burden of rejoinder against their aff.

#### Use competing interps – reasonability invites arbitrary judge intervention since there’s no consensus as to what’s reasonable.

#### No RVIs – fairness and education are logical litmus tests and they incentivize baiting theory and prepping it out which turns substance crowdout

### 1NC – Off

#### JCPOA passes now – diplomacy is working despite setbacks

TASS 4/21 [(TASS, largest Russian news agency and one of the largest news agencies worldwide) “Negotiators in Vienna far close to nuclear deal - Iranian top diplomat,” 4/21/2022] JL

Delegations participating in the Vienna talks to restore the nuclear deal with Iran are close to reaching an agreement, Iranian Foreign Minister Hossein Amir Abdollahian told his Syria counterpart Faisal Meqdad on the phone on Thursday.

"The diplomatic path is working properly and we have not gone far from a good and lasting deal," the minister was quoted as saying.

According to Iran’s top diplomat, the exchange of messages between Iran and the US is done through the European Union.

"The Islamic Republic of Iran does not pay attention to excessive demands nor will it retreat from its red lines," he added.

After eight rounds of talks in Vienna, aimed at restoring the Joint Comprehensive Plan of Action on Iran’s nuclear program in its original form and resuming the US participation in the agreement, a pause has been taken due to external factors. Prior to that, it was reported that the negotiations have entered the final phase and were expected to be completed by late February.

#### Space diplomacy directly trades off with nonproliferation agreements – finite manpower, money, and political will within the AVC

Johnson-Freeze 16 [(Joan, Professor and former Chair of National Security Affairs at the US Naval War College, Newport, Rhode Island) “Space Warfare in the 21st Century: Arming the Heavens,” Cass Military Studies, 11/8/2016] JL

 \*The plan is legislated in the AVC (same bureau of the State Department that’s concerned with the JCPOA)

Proactive policymaking takes commitment, manpower, and money. A quick look at the money and manpower devoted to diplomacy in the US State and Defense departments compared to the resources available for the hardwareproducing military–industrial complex efforts described in Chapter 5 is enlightening. The Assistant Secretary of State for Arms Control, Verification, and Compliance (AVC) leads space-related diplomacy in the State Department. The AVC Bureau is responsible for “all matters related to the implementation of certain international arms control, nonproliferation, and disarmament agreements and commitments; this includes staffing and managing treaty implementation commissions.”34 The AVC arms control portfolio includes nuclear, biological, and chemical weapons and all related issues. The AVC section charged with space issues is the Office of Emerging Security Challenges; this office also handles missile defense issues and the promotion of transparency, cooperation, and building confidence regarding cybersecurity. As of financial year 2013, AVC had a budget of $31.2 million and 141 employees35 to be active participants and leaders in all of these issues.

By way of comparison, the Space Security and Defense Program, a joint program of the DoD and the Office of the Director of National Intelligence (ODNI) was programmed for a similar budget amount in financial year 2015: $32.3 million. That program is described as a “center of excellence for options and strategies (materiel, non-materiel, cross-Title, cross-domain) leading to a more resilient and enduring National Security Space (NSS) Enterprise.”36 A majority of SSDP funding is allocated to the development of offensive space control strategies. So basically, the same budget is allocated for all US global space diplomacy efforts as for an in-house Pentagon think tank to devise counterspace strategies.

Within the Pentagon, the Deputy Assistant Secretary of Defense for Space Policy is charged with all issues related to space policy, including diplomacy. The responsibilities of the Space Policy office are to:

• Develop policy and strategy for a domain that is increasingly congested, competitive, and contested

• Implement across DoD — plans, programs, doctrine, operations — and with the IC and other agencies

• Engage with allies and other space-faring countries in establishing norms and augmenting our capabilities.37

The breadth of those responsibilities, which includes reviewing space acquisitions, means that there may be only a handful of individuals actually engaged in multilateral diplomatic efforts, acting, for example, as advisors to diplomatic discussions such as those through the United Nations. Additionally, the expanse of the Pentagon results in a chain of command that makes organizational competition for attention to subject matter challenging at best. The Deputy Assistant Secretary of Defense for Space Policy reports to the Assistant Secretary of Defense for Homeland Defense, who then reports to the Principle Deputy Secretary of Defense for Homeland Defense and Global Security, who then reports to the Under Secretary of Defense for Defense Policy. There are also a multitude of space players in other governmental organizations to coordinate and contend with, particularly within the Air Force and intelligence communities. Personnel are spread thin.

US government-wide space diplomacy needs a mandate, manpower, and a supporting budget. Diplomacy, especially multilateral diplomacy, can be timeconsuming, manpower-intensive, and frustrating; and patience is not a strong American virtue. The recent experience in the UN LTS Working Group is emblematic of everything that causes the United States to shun multilateralism. Under the auspices of this group, countries had worked in good faith over the past five years to develop technical guidelines as reciprocal constraints, as insisted upon by the developing countries when they rejected the ICOC. Yet group success appeared thwarted at the February 2016 meeting of the LTS Working Group by one country, Russia.

#### Iranian proliferation goes nuclear – causes regional war and spurs proliferation cascades across the Middle East

Chilton and Hoshovsky 20 – [(Kevin, led U.S. Strategic Command and has participated in the Jewish Institute for National Security of America’s Generals and Admirals Program; Harry, policy analyst at JINSA’s Gemunder Center for Defense and Strategy) "Avoiding a nuclear arms race in the Middle East," Defense News, 2-13-2020, https://www.defensenews.com/opinion/commentary/2020/02/13/avoiding-a-nuclear-arms-race-in-the-middle-east/] TDI

This raises two immediate concerns. First, **should Iran race for the bomb, it is** almost inevitable that the United States and/or Israel will take preventative military action **to stop it from crossing that fateful threshold**. This could easily spiral into a regional war as Iran activates its various proxy forces against the United States and its allies.

Second, **an Iranian nuclear breakout attempt could** spur a proliferation cascade throughout the Middle East, **beginning with Saudi Arabia.**

Mohammed bin Salman, **the Saudi crown prince, openly stated in 2018 that if Iran developed nuclear weapons**, Riyadh would quickly “follow suit.” **One suggested approach would see Saudi Arabia purchase a nuclear power reactor from a major supplier like South Korea and then build a reprocessing plant that would yield enough weapons-grade plutonium in five years**.

A half-decade delay isn’t optimal, however, when the goal is achieving nuclear deterrence quickly. Thus, there is the so-called Islamabad option.

This refers to Riyadh’s role in financing Pakistan’s nuclear weapons program and an alleged commitment from Islamabad that it would repay the favor. While Pakistani and Saudi officials have denied any such understanding, **there is the possibility that the two could work out an arrangement where Islamabad could deploy some of its nuclear arsenal on Saudi soil following a successful Iranian breakout.**

Although this maneuver would draw sharp, international criticism, in theory, it would allow Riyadh to remain in good standing vis-a-vis the nuclear nonproliferation treaty. Nevertheless, Pakistan might not be willing to play spoiler against a nuclearized Iran. If it is, Middle Eastern geopolitics would become extremely unstable.

**If Saudi Arabia acquires nuclear weapons**, many believe Turkey would follow suit. Last September, Turkish President Recep Tayyip **Erdogan declared that he “cannot accept” the argument from Western nations that Turkey should not be allowed to attain nuclear weapons.** In 1958, Charles de Gaulle proclaimed that a nation without nuclear weapons “does not command its own destiny”; two years later, France tested its first bomb. Erdogan’s comments echo those earlier remarks and raise the possibility that Ankara could become the second NATO member to leave the alliance’s nuclear umbrella in favor of its own independent arsenal.

#### Prolif cascades undermine deterrence and cause nuclear war – this is predictive of what a multi-nuclear Middle East would look like

Krepinevich 13 – [(Dr. Andrew F, the President of the Center for Strategic and Budgetary Assessments) “Critical Mass: Nuclear Proliferation in the Middle East,” 2013, https://csbaonline.org/uploads/documents/Nuclear-Proliferation-in-the-Middle-East.pdf] TDI

As more countries over time develop nuclear capabilities and build up their nuclear arsenals, the competition will evolve from an Israeli-Iranian affair to a multi-state rivalry. For illustrative purposes **we will assume that** in the 2025-2030 timeframe, **Iran**, **Saudi Arabia, Turkey, and perhaps Egypt** and/or Iraq **have nuclear arsenals** in the low double-digit range (i.e., ten to forty weapons). What form might a nuclear competition among these powers and Israel assume? The remainder of this chapter attempts to shed some light on this issue, and its potential implications, with emphasis on those affecting regional stability.

The challenge of preserving stability when confronted with military competition among five nuclear-armed states within the Middle East and with other powers external to the region engaged in a Great Game for influence is formidable. At first blush, one thing seems apparent: **many** Cold War-era metrics **for assessing the competition and gauging where it might be headed** appear to be of little utility; in fact, **they may actually prove misleading and dangerous**. The same can be said of those looking to apply Cold War-era arms control metrics as a way of keeping the peace in general and avoiding nuclear use in particular.

**During the Cold War, many nuclear strategists came to view nuclear parity** (the possession of roughly equivalent arsenals capable of inflicting roughly equivalent levels of destruction) **between the United States and the Soviet Union as stabilizing**. The perception of these strategists is that the rough equivalence contributed to the tradition of non-use of nuclear weapons, and was thus desirable. Parity enabled both sides to avoid the perception of being inferior to their rival, and perceptions are critical to deterrence and to preserving the confidence of one’s allies and security partners. If accepted by both sides, parity could enable them to avoid the cost and instability associated with “racing” toward ever-larger arsenals. Accordingly, maintaining parity was a major objective of U.S.-Soviet (and later U.S.-Russian) arms control negotiations. Yet irrespective of its merits, parity is not an option for states engaged in an n-player competition. Each competitor cannot have a nuclear force equivalent to all the others. Even if the competition should solidify into two coalitions so as to mimic the two-player Cold War competition, questions would almost certainly arise regarding the willingness of a coalition partner that has not been attacked to risk its own destruction by using its nuclear weapons in response to an attack on its ally. Indeed, these concerns were raised during the Cold War, and formed a major justification for France pursuing its own force de frappe. 93

**In a Middle Eastern “n-player” competition, all nuclear powers would be** challenged to establish an “assured destruction” capability **against all the other regional nuclear powers**, another Cold War desideratum, **given their relatively modest economies. An “assured destruction” capability in an n-state competition would require that each state have weapons sufficient to survive an initial attack by all potential rivals and still be able to devastate the countries of all attackers**. It would also require that the source of the attack be reliably identified. As noted earlier, this may prove difficult given likely limitations on these states’ ability to field advanced early warning systems. For example, would Israel be able to determine with confidence the owner of a ballistic missile launched from a location along the Iranian-Turkish border? The origin of any cruise missile launched from a sea-based platform? Even assuming a state could identify the source (or sources) of an attack, could its command and control systems survive the attack sufficiently intact to execute a retaliatory strike? **A decapitation strike could preclude an “assured destruction” retaliatory strike even if sufficient weapons survive to execute one.**

**This, in turn,** raises the possibility of a “catalytic” war**—one that is initiated between two states by a third party. Given a proliferated Middle East as described above, the chances that a regime would incorrectly attribute the source of an attack cannot be easily dismissed. To the extent** cyber weapons can introduce false information **into a state’s decision-making process, the risks of catalytic war only increase.**

Further complicating matters, **the early warning requirement following a proliferation cascade could be multidirectional, and at some point perhaps 360 degrees**, especially if nuclear rivals begin deploying a portion of their nuclear forces at sea. **Early warning requirements would be stressed even further** (and the costs of such a system increase correspondingly) **if a neighboring state** (e.g., Iran in the case of Turkey or Iraq; Turkey in the case of Israel; etc.) **were to acquire nuclear weapons**. In this case warning times would be even more compressed than in an Israeli-Iranian competition. Owing to its proximity to Iran, **Saudi Arabia**, for example, **could have less than five minutes to react to an Iranian ballistic missile attack no matter how advanced its early warning and command and control systems are.**

As noted earlier in this assessment, regardless of what assumptions are made regarding a regional nuclear power’s early warning system, given the short ballistic missile flight times it seems likely that preserving command and control of the state’s nuclear forces while under attack will prove challenging. **States might be tempted to adopt a launch-on-warning posture**, but this requires both early warning and a highly responsive command and control system. Should a state determine that it will not be able to launch-on-warning and instead attempt to “ride-out” a nuclear first strike and retaliate, it would still need its command and control system to function effectively in the wake of the nuclear attack. **Absent a highly resilient command and control system,** a state’s ability to launch a retaliatory **nuclear strike** may require nuclear release authority to be diffused to lower-level commanders. But again, absent an effective early warning system it may not be possible to determine the attack source with confidence in a region with multiple nuclear powers.

### **1NC – Off**

#### **Moral realism posits the existence of truths that hold independently of our evaluative attitudes – ought statements are an example**

Street 06 [(Sharon, Professor of Philosophy and Associate Chair of the Department of Philosophy at New York University) “A Darwinian Dilemma for Realist Theories of Value,” Springer, 2006]

The defining claim of realism about value, as I will be understanding it, is that there are at least some evaluative facts or truths that hold independently of all our evaluative attitudes.1 Evaluative facts or truths I understand as facts or truths of the form that X is a normative reason to Y, that one should or ought to X, that X is good, valuable, or worthwhile, that X is morally right or wrong, and so on.2 Evaluative attitudes I understand to include states such as desires, attitudes of approval and disapproval, unreflective evaluative tendencies such as the tendency to experience X as counting in favor of or demanding Y, and consciously or unconsciously held evaluative judgements, such as judgements about what is a reason for what, about what one should or ought to do, about what is good, valuable, or worthwhile, about what is morally right or wrong, and so on.

It is important to note that it is not enough to be a realist to claim that the truth of an evaluative judgement holds independently of one’s making that particular evaluative judgement. Antirealists can agree with that much. Consider, for example, a constructivist view according to which the truth of ‘‘X is a reason for agent A to Y’’ is a function of whether that judgement would be among A’s evaluative judgements in reflective equilibrium. This view is antirealist because it understands truths about what reasons a person has as depending on her evaluative attitudes (in particular, on what those attitudes would be in reflective equilibrium). Yet on this view, it is quite possible for someone to have a reason independently of whether she thinks she does, for whether she has a reason is not a function of whether she (presently) judges she has it, but rather a function of whether that judgement would be among her evaluative judgements in reflective equilibrium. Antirealists can therefore agree with realists that the truth of a given evaluative judgement holds independently of whether one makes that particular judgement. Where antirealists part ways with realists is in denying that there are evaluative truths which hold independently of the whole set of evaluative judgements we make or might make upon reflection, or independently of the whole set of other evaluative attitudes we hold or might hold upon reflection.

The kind of independence from our evaluative attitudes that realists endorse is what Russ Shafer-Landau has called stance-independence. 3 To illustrate: Realists of course agree that the evaluative truth that ‘‘Hitler was morally depraved’’ depends in part on Hitler’s evaluative attitudes in the sense that if Hitler had valued peace and universal human rights instead of dictatorial power and genocide, then it would have been false instead of true that he was morally depraved. But given that Hitler did value dictatorial power and genocide, value realists think that it is true, independent of all of our (and any of Hitler’s other) evaluative attitudes, that Hitler was morally depraved. According to realists, the truth that Hitler was morally depraved holds independently of any stance that we (or Hitler) might take toward that truth, whether now or upon reflection.

There are different brands of realism about value. What unites them is the view that there are evaluative facts or truths that hold independently of all our evaluative attitudes (now keeping in mind the qualification about stance-independence). What separates different kinds of realists from one another is how they construe the nature of these facts or truths. According to what I will call non-naturalist versions of value realism, evaluative facts or truths are not reducible to any kind of natural fact, and are not the kinds of things that play a role in causal explanations; instead, they are irreducibly normative facts or truths.4 This brand of realism has been gaining increasing numbers of adherents in recent years, and it lies squarely within the target of the Darwinian Dilemma.

In contrast to non-naturalist versions of value realism, the position I will call value naturalism holds that evaluative facts are identical with or constituted by (certain) natural facts, and that evaluative facts are the kinds of things that play a role in causal explanations.5 According to such views, much as water is identical with H2O, so evaluative properties are identical with certain natural properties, though we may or may not ever be able to provide a reduction telling exactly which natural properties evaluative properties are identical with (different naturalists taking different views on the possibility of such a reduction).6 Whereas non-naturalist versions of value realism lie straightforwardly within my target in this paper, it is a more complicated matter whether versions of value naturalism lie within my target. Answering this question requires making a distinction (in section 7) between versions of value naturalism which count as genuinely realist on my understanding and versions which don’t; my argument will be that the former, but not the latter, are vulnerable to the Darwinian Dilemma. Before introducing these complexities, however, it is important to get the fundamental dilemma for realism on the table.7

#### Selective pressures have had a relentless impact on the content of our evaluative judgements – shared values and animal tendencies prove

Street 06 [(Sharon, Professor of Philosophy and Associate Chair of the Department of Philosophy at New York University) “A Darwinian Dilemma for Realist Theories of Value,” Springer, 2006]

To begin, note the potentially phenomenal costs and benefits, as measured in the Darwinian currency of reproductive success, of accepting some evaluative judgements rather than others. It is clear, for instance, how fatal to reproductive success it would be to judge that the fact that something would endanger one’s survival is a reason to do it, or that the fact that someone is kin is a reason to harm that individual. A creature who accepted such evaluative judgements would run itself off cliffs, seek out its predators, and assail its offspring, resulting in the speedy elimination of it and its evaluative tendencies from the world.13 In contrast, it is clear how beneficial (in terms of reproductive success) it would be to judge that the fact that something would promote one’s survival is a reason in favor of it, or that the fact that something would assist one’s offspring is a reason to do it. Different evaluative tendencies, then, can have extremely different effects on a creature’s chances of survival and reproduction. In light of this, it is only reasonable to expect there to have been, over the course of our evolutionary history, relentless selective pressure on the content of our evaluative judgements, or rather (as I discuss below) ‘‘proto’’ versions thereof. In particular, we can expect there to have been overwhelming pressure in the direction of making those evaluative judgements which tended to promote reproductive success (such as the judgement that one’s life is valuable), and against making those evaluative judgements which tended to decrease reproductive success (such as the judgement that one should attack one’s offspring).

The hypothesis that this is indeed very roughly what happened is borne out by the patterns of evaluative judgement that we observe in human beings today. There is, of course, a seemingly unlimited diversity to the evaluative judgements that human beings affirm. Yet even as we note this diversity, we also see deep and striking patterns, across both time and cultures, in many of the most basic evaluative judgements that human beings tend to make. Consider, as a brief sampling, the following judgements about reasons:

(1) The fact that something would promote one’s survival is a reason in favor of it.

(2) The fact that something would promote the interests of a family member is a reason to do it.

(3) We have greater obligations to help our own children than we do to help complete strangers.

(4) The fact that someone has treated one well is a reason to treat that person well in return.

(5) The fact that someone is altruistic is a reason to admire, praise, and reward him or her.

(6) The fact that someone has done one deliberate harm is a reason to shun that person or seek his or her punishment.

What explains the widespread human acceptance of such judgements? There are so many other possible judgements about reasons we could make so why these? Why, for instance, do we view the death of our offspring as a horror, rather than as something to be sought after? Why do we think that altruism with no hope of personal reward is the highest form of virtue, rather than something to be loathed and eliminated? Evolutionary biology offers powerful answers to these questions, very roughly of the form that these sorts of judgements about reasons tended to promote survival and reproduction much more effectively than the alternative judgements. The details of how survival and reproduction were promoted will vary depending on the evaluative tendency in question. In the case of judgement (1), for instance, the rough explanation is obvious: creatures who possessed this general evaluative tendency tended to do more to promote their survival than those who, say, had a tendency to view the fact that something would promote their survival as counting against it, and so the former tended to survive and reproduce in greater numbers. The explanation of evaluative tendencies in the direction of judgements such as (2) and (3) will be somewhat more complicated, drawing on the evolutionary theory of kin selection.14 The explanation in the case of evaluative tendencies in the direction of judgements (4), (5), and (6), meanwhile, will appeal to the biological theory of reciprocal altruism.15

For the sake of contrast, consider the following possible evaluative judgements:

(1) The fact that something would promote one’s survival is a reason against it.

(2) The fact that something would promote the interests of a family member is a reason not to do it.

(3) We have greater obligations to help complete strangers than we do to help our own children.

(4) The fact that someone has treated one well is a reason to do that individual harm in return.

(5) The fact that someone is altruistic is a reason to dislike, condemn, and punish him or her.

(6) The fact that someone has done one deliberate harm is a reason to seek out that person’s company and reward him or her.

If judgements like these ones that would, other things being equal, so clearly decrease rather than increase the reproductive success of those who made them predominated among our most deeply and widely held evaluative judgements across both time and cultures, then this would constitute powerful evidence that the content of our evaluative judgements had not been greatly influenced by Darwinian selective pressures. But these are not the evaluative judgements we tend to see; instead, among our most deeply and widely held judgements, we observe many like those on the first list many with exactly the sort of content one would expect if the content of our evaluative judgements had been heavily influenced by selective pressures. In this way, the observed patterns in the actual content of human evaluative judgements provide evidence in favor of the view that natural selection has had a tremendous influence on that content.

A further piece of evidence in favor of this view is the striking continuity that we observe between many of our own widely held evaluative judgements and the more basic evaluative tendencies of other animals, especially those most closely related to us. It does not seem much of a stretch, for example, to say that chimpanzees, in some primitive, non-linguistic sort of fashion, experience certain things in the world as calling for or counting in favor of certain reactions on their part. Moreover, the content of these evaluative experiences seems to overlap significantly with the content of many of our own evaluative tendencies. Like us, individual chimpanzees seem to experience at some basic motivational level actions that would promote their survival or help their offspring as in some way ‘‘called for.’’ More strikingly, and again at some basic motivational level, chimpanzees seem to experience the fact that another chimpanzee has helped them, whether by sharing food, grooming them, or supporting their position within the group hierarchy, as ‘‘counting in favor of’’ assisting that other individual in similar ways.16 While more work is needed to make such claims precise and subject them to thorough scientific testing, they have a strong basic plausibility, such that the conspicuous continuities between the basic evaluative tendencies of our close animal relatives and our own evaluative judgements lend further support to the view that evolutionary forces have played a large role in shaping the content of our evaluative judgements. We may view many of our evaluative judgements as conscious, reflective endorsements of more basic evaluative tendencies that we share with other animals.

#### **The Darwinian Dilemma makes moral realism impossible – the realist must defend judgements being true by pure coincidence or an anti-scientific account of evolution**

Street 06 [(Sharon, Professor of Philosophy and Associate Chair of the Department of Philosophy at New York University) “A Darwinian Dilemma for Realist Theories of Value,” Springer, 2006]   
Contemporary realist theories of value claim to be compatible with natural science. In this paper, I call this claim into question by arguing that Darwinian considerations pose a dilemma for these theories. The main thrust of my argument is this. Evolutionary forces have played a tremendous role in shaping the content of human evaluative attitudes. The challenge for realist theories of value is to explain the relation between these evolutionary influences on our evaluative attitudes, on the one hand, and the independent evaluative truths that realism posits, on the other. Realism, I argue, can give no satisfactory account of this relation. On the one hand, the realist may claim that there is no relation between evolutionary influences on our evaluative attitudes and independent evaluative truths. But this claim leads to the implausible skeptical result that most of our evaluative judgements are off track due to the distorting pressure of Darwinian forces. The realist’s other option is to claim that there is a relation between evolutionary influences and independent evaluative truths, namely that natural selection favored ancestors who were able to grasp those truths. But this account, I argue, is unacceptable on scientific grounds. Either way, then, realist theories of value prove unable to accommodate the fact that Darwinian forces have deeply influenced the content of human values. After responding to three objections, the third of which leads me to argue against a realist understanding of the disvalue of pain, I conclude by sketching how antirealism is able to sidestep the dilemma I have presented. Antirealist theories of value are able to offer an alternative account of the relation between evolutionary forces and evaluative facts an account that allows us to reconcile our understanding of evaluative truth with our understanding of the many non-rational causes that have played a role in shaping our evaluative judgements.

#### Our interpretation is that the aff must prove that private entities have a moral obligation not to appropriate outer space

#### Justice requires moral realism

Dworkin 11 [(Ronald, FBA QC was an American philosopher, jurist, and scholar of United States constitutional law. At the time of his death, he was Frank Henry Sommer Professor of Law and Philosophy at New York University and Professor of Jurisprudence at University College London.) “Justice for Hedgehogs” Harvard University Press, 2011.] BC

Politics is coercive: we cannot stand up to our responsibility as governors or citizens unless we suppose that the moral and other principles on which we act or vote are objectively true. It is not good enough for an offi cial or voter to declare that the theory of justice on which he acts pleases him. Or that it accurately expresses his emotions or attitudes or aptly states how he plans to live. Or that his po liti cal principles are drawn from his nation’s traditions and so need not claim larger truth. Any nation’s history and contemporary politics are a kaleidoscope of confl icting principle and shifting prejudice: any formulation of the nation’s “traditions” must therefore be an interpretation that, as Chapter 7 argues, must be rooted in in de pen dent assumptions about what is really true. Of course, people will disagree about which conception of justice is really true. But those in power must believe that what they say is so. So the old phi los o phers’ question— Can moral judgments really be true?— is a foundational, inescapable, question in po liti cal morality. We cannot defend a theory of justice without also defending, as part of the same enterprise, a theory of moral objectivity. It is irresponsible to try to do without such a theory.

#### Prefer it:

#### Precision – the resolution says “unjust,” not should – the resolution is the most predictable stasis point for debates, anything outside of that ruins prep and clash by allowing the affirmative to pick any grounds for debate

#### Phil Ed – all of the debates that happen under their interp can still occur; we just also allow for debates about meta-ethics. Those debates are valuable -- saying “we have a moral obligation to do X” is useless if you can’t answer the argument that moral obligations don’t exist.

#### Ground – anti-moral realism is a key negative generic, especially on a topic where there’s an aff about every space faring state, company, and type of appropriation, but no neg args that answer every aff

#### No offense –

#### Stale debates are inevitable because of generics like plans bad, but generic meta ethics debates are better since they produce transferrable skills

#### Our interp filters out bad arguments – a prioris and paradoxes don’t negate since they don’t disprove that states have a moral obligation to do the plan

## 1NC – Case

### 1NC – Framing

#### Pain’s badness is a contingent truth – if evolution favored those who pursued pain, our evaluative judgements would be different

Street 06 [(Sharon, Professor of Philosophy and Associate Chair of the Department of Philosophy at New York University) “A Darwinian Dilemma for Realist Theories of Value,” Springer, 2006]

Suppose, however, there is remaining doubt and some are still tempted by a realist position on the badness of pain so understood. It’s at this point that the Darwinian Dilemma arises again for the realist. To see how, suppose again that pain is given some definition according to which it is not a necessary feature of pain that we unreflectively experience it as counting in favor of what would avoid, lessen, or stop it. In that case, the following becomes a legitimate scientific question: given that it is perfectly conceivable that we all could have ended up taking pain sensations to count in favor of what would cause them and intensify them rather than in favor of what would lessen them and stop them, what explains the fact that such a huge percentage of us so consistently do the latter? Here, as in earlier cases, there is a powerful evolutionary answer. I’ve left it open how the person opting for the first horn of the Pain Dilemma is defining pain (so long as that definition makes no reference to the idea that pain is a sensation that we unreflectively take to count in favor of what would stop it). But if the proposed definition is to be plausible at all, then it will pick out (predominantly, one assumes) sensations associated with the sorts of bodily conditions that we normally consider painful, such as cuts, burns, bruises, broken bones, and so on. And it is of course no mystery whatsoever, from an evolutionary point of view, why we and the other animals came to take the sensations associated with bodily conditions such as these to count in favor of what would avoid, lessen, or stop them rather than in favor of what would bring about and intensify them. One need only imagine the reproductive prospects of a creature who relished and sought after the sensations of its bones breaking and its tissues tearing; just think how many descendants such a creature would leave in comparison to those who happened to abhor and avoid such sensations.

As in earlier cases, the realist faces a problem when confronted with such an explanation. For once again we see that there is a striking coincidence between the content of the independent evaluative truth posited by the realist, on the one hand, and the content that evolutionary theory would lead us to expect, on the other. The realist tells us that it is an independent evaluative truth that pain sensations (however he or she defines them) are bad, and yet this is precisely what evolutionary theory would have predicted that we come to think. And once again the realist is unable to give any good account of this coincidence. To insist that the coincidence is mere coincidence is implausible. The realist’s alternative, here as in earlier cases, is to defend some sort of tracking account, according to which we were selected to be able to discern independent evaluative truths, among them the truth that these pain sensations (however the realist is defining them) are bad. Yet here as in earlier cases, the tracking account is scientifically unacceptable. In order to explain why we came to think that these sensations are bad, we need make no reference whatsoever to the fact that they are bad; we need only point out how it tended to promote reproductive success to take them to be bad (due to their connection with bodily conditions that tended to diminish reproductive success).

The realist, then, is forced to the other horn of the Pain Dilemma. To salvage realism about the badness of pain, he or she is forced to understand pain as a sensation such that the creature who has it unreflectively takes that sensation to count in favor of whatever would avoid, lessen, or stop it. But now notice what this means. In order to salvage his or her view of pain as bad independently of our evaluative attitudes, the realist must admit that pain’s badness depends on its being a sensation such that the creature who has it is unreflectively inclined to take it to be bad. But this, in turn, is just to admit that its badness depends in an important sense on our evaluative attitudes in particular, on our being unreflectively inclined to take it to be bad. Pain may well be bad, in other words, but if it is so, its badness hinges crucially on our unreflective evaluative attitudes toward the sensation which pain is. The realist is thus forced to recognize the role of our evaluative attitudes in determining the disvalue of pain. Though initially plausible, it is a mistake to say that pain is bad independently of our evaluative attitudes. Pain, if it is plausibly to be construed as bad independently of our other evaluative attitudes, must be understood as a sensation such that we have a certain evaluative attitude toward it and it’s that evaluative attitude which (at least in part) makes the sensation bad.

#### All of these framework arguments are justification of a normative theory of ethics — util doesn't prove moral realism it presupposes it.

#### Off GPP -- This argument suggests that if moral realism is true, we can best maximize value by reducing existential risk — but that's what we indict

#### Off Blum

#### Blum proves that pleasure and pain are conditioned by evolution not special phenomenal capabilities that track moral truth

#### Their ev says "Foods mates, offsprings are rewarding," this would not be our attitude if it were not the case that these things were evolutionarily advantageous

#### Off Yudkowsky -- this argument just says that it's most prudent to discuss normative ethical questions — perhaps that's the case in lay moral reasoning, but the resolution has posed a meta-ethical proposition. So, in order to have topical debate, we need to discuss meta-ethics whether it's most prudent or not. This arg is just aggressive dismissal of meta-ethical questions but that does not disprove the truth of the arguments we have made about moral realism

#### Util fails –

#### Infinite consequences – every action produces infinite consequences because every consequences causes another one – makes it impossible to assess an action’s goodness or badness

#### Nonbinding – there are infinite events occurring over which you have no control if you’re held responsible for things other than your intent – creates a logic of futility where you don’t even attempt to act ethically

#### Subjectivity – there’s no objective arbiter to evaluate consequences – masochists find typically painful experiences pleasurable

#### Incalculability – 5 headaches and a migraine can’t be compared since I don’t know how they feel for you – proves weighing consequences is arbitrary

#### Sensory perception is inaccurate – hallucinations, dreams, and simulations prove that the things we perceive do not necessarily exist – prefer the NC because we know that logic is true through contradiction

### 1NC – Space War

1. **No dual-use – 1AC Chow observes that states could pursue dual-use and says ADR is peaceful now – make them read evidence about which states have tried – in blue**

In June 2018, the United Nations Office for Outer Space Affairs will celebrate the 50th anniversary of the first United Nations Conference on the Exploration and Peaceful Uses of Outer Space. The conference is an opportunity “for the international community to gather and consider the future course of global cooperation for the benefit of humankind.”1 Indeed, there is much to celebrate since the space age began because the world has reaped abundant benefits from satellites. We have established five treaties and a number of transparency and confidencebuilding measures for space activities.2 But, in spite of countless efforts, these treaties and measures focus on civil and commercial activities and cannot control space weapons other than weapons of mass destruction in orbit. One of the greatest emerging threats in space comes from unmanned proximity operations. These operations require maneuvering a spacecraft close enough to another object in space to make physical contact with the other object or affect the object in some way.3 To date, the intent of unmanned proximity operations has been for peaceful purposes such as active debris removal (ADR) or on-orbit servicing (OOS). However, a spacecraft that can perform ADR or OOS can also be readily commanded to grapple and destroy an adversary’s satellite. Currently the United States, China, Russia, the European Union, and other countries are pursuing R&D programs for satellites to perform ADR and OOS. Each nation is planning to provide such services in early 2020 and beyond. To perform these peaceful services, a country needs to master the skill of unmanned proximity operations.

1. **Their inherency ev is only about US private companies – no chance the aff solves internal links about Chinese and Russian RPO, which are state-owned**

Thompson 20 [(Cort, military intelligence officer in the United States Army and previously served as a MQ-5B Hunter UAS operator and mission commander) “Russia’s Recent Space Activity Is a Return to Old Form,” 4/20/2020] JL

The U.S. Space Force [stated](https://time.com/5779315/russian-spacecraft-spy-satellite-space-force/) on Feb. 10 that there have been several recent instances of Russian satellites maneuvering into similar orbital paths as known U.S. spy satellites, specifically USA-245. While some commentators have [suggested](https://www.cbsnews.com/news/russian-satellites-fly-near-us-government-satellite-activity-unusual-disturbing-space-command/) that these may be “inspector satellites,” whose purpose is to examine the U.S. satellites and determine their capabilities, this activity likely signals a return to form of Russian anti-satellite (ASAT) weapons testing.

Russia has [historically relied](https://www.popularmechanics.com/space/satellites/a9620/the-hidden-history-of-the-soviet-satellite-killer-16108970/) on co-orbital ASAT weapons to counter adversary space assets. The recent satellite maneuvers suggest that Russia is conducting dry runs to prepare to intercept strategic space assets with other orbital vehicles. These maneuvers, and other rendezvous and proximity operations (RPO), can publicly be presented by the Kremlin as peaceful demonstrations to test the ability to refuel or repair other satellites while hiding their second-order purpose of testing co-orbital intercept capabilities.

#### Chinese ASATs are state-owned – can’t solve

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

If current trends hold, then China’s[Strategic Support Force](https://ndupress.ndu.edu/Portals/68/Documents/stratperspective/china/china-perspectives_13.pdf) will be capable by the late 2020s of holding key U.S. space assets at risk. [Chinese military doctrine](https://nationalinterest.org/blog/reboot/nowhere-earth-will-be-safe-us-china-war-172523), statements by senior officials, and past behavior all suggest that China may well believe threatening such assets to be an effective means of deterring U.S. intervention. If so, then the United States would face a type of “Sophie’s Choice”: decline to intervene, potentially leading allies to follow suit and Taiwan to succumb without a fight, thereby enabling Xi to achieve his goal of “peacefully” snuffing out Taiwanese independence; or start a war that would at best be long and bloody and might well even cross the nuclear threshold.

This emerging crisis has been three decades in the making. In 1991, China watched from afar as the United States used space-enabled capabilities to obliterate the Iraqi military from a distance in the first Gulf War. The People’s Liberation Army quickly set to work developing capabilities targeted at a perceived Achilles’ heel of this new [American way of war](https://nationalinterest.org/feature/secrets-and-lies-role-truth-great-power-information-warfare-170579): reliance on vulnerable space systems.

This project came to fruition with a direct ascent[ASAT weapons test](https://fas.org/sgp/crs/row/RS22652.pdf) in 2007, but the test was limited in two key respects. First, it only reached low Earth orbit. Second, it generated thousands of pieces of long-lasting space junk, provoking immense[international ire](https://spacenews.com/u-s-official-china-turned-to-debris-free-asat-tests-following-2007-outcry/). This backlash appears to have taken China by surprise, driving it to seek new, more usable ASAT types with minimal debris production. Now, one such ASAT is nearing operational status: spacecraft capable of rendezvous and proximity operations (RPOs).

#### Zero risk of escalation from ASATs

**Pavur and Martinovic 19** [James Pavur and Ivan Martinovic, May 2019, "The Cyber-ASAT: On the Impact of Cyber Weapons in Outer Space," ResearchGate, 11th International Conference on Cyber Conflict: Silent Battle [https://www.researchgate.net/publication/334422193\_The\_Cyber-ASAT\_On\_the\_Impact\_of\_Cyber\_Weapons\_in\_Outer\_Space accessed 12/10/21](https://www.researchgate.net/publication/334422193_The_Cyber-ASAT_On_the_Impact_of_Cyber_Weapons_in_Outer_Space%20accessed%2012/10/21)]Adam

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.

1. **No space war – insurmountable barriers and everyone has an interest in keeping space peaceful**

**Dobos 19** [(Bohumil Doboš, scholar at the Institute of Political Studies, Faculty of Social Sciences, Charles University in Prague, Czech Republic, and a coordinator of the Geopolitical Studies Research Centre) “Geopolitics of the Outer Space, Chapter 3: Outer Space as a Military-Diplomatic Field,” Pgs. 48-49] TDI

Despite the theorized potential for the achievement of the terrestrial dominance throughout the utilization of the ultimate high ground and the ease of destruction of space-based assets by the potential space weaponry, the utilization of space weapons is with current technology and no effective means to protect them far from fulfilling this potential (Steinberg 2012, p. 255). In current global international political and technological setting, the utility of space weapons is very limited, even if we accept that the ultimate high ground presents the potential to get a decisive tangible military advantage (which is unclear). This stands among the reasons for the lack of their utilization so far. Last but not the least, it must be pointed out that the states also develop passive defense systems designed to protect the satellites on orbit or critical capabilities they provide. These further decrease the utility of space weapons. These systems include larger maneuvering capacities, launching of decoys, preparation of spare satellites that are ready for launch in case of ASAT attack on its twin on orbit, or attempts to decrease the visibility of satellites using paint or materials less visible from radars (Moltz 2014, p. 31). Finally, we must look at the main obstacles of connection of the outer space and warfare. The first set of barriers is comprised of physical obstructions. As has been presented in the previous chapter, the outer space is very challenging domain to operate in. Environmental factors still present the largest threat to any space military capabilities if compared to any man-made threats (Rendleman 2013, p. 79). A following issue that hinders military operations in the outer space is the predictability of orbital movement. If the reconnaissance satellite's orbit is known, the terrestrial actor might attempt to hide some critical capabilities-an option that is countered by new surveillance techniques (spectrometers, etc.) (Norris 2010, p. 196)-but the hide-and-seek game is on. This same principle is, however, in place for any other space asset-any nation with basic tracking capabilities may quickly detect whether the military asset or weapon is located above its territory or on the other side of the planet and thus mitigate the possible strategic impact of space weapons not aiming at mass destruction. Another possibility is to attempt to destroy the weapon in orbit. Given the level of development for the ASAT technology, it seems that they will prevail over any possible weapon system for the time to come. Next issue, directly connected to the first one, is the utilization of weak physical protection of space objects that need to be as light as possible to reach the orbit and to be able to withstand harsh conditions of the domain. This means that their protection against ASAT weapons is very limited, and, whereas some avoidance techniques are being discussed, they are of limited use in case of ASAT attack. We can thus add to the issue of predictability also the issue of easy destructibility of space weapons and other military hardware (Dolman 2005, p. 40; Anantatmula 2013, p. 137; Steinberg 2012, p. 255). Even if the high ground was effectively achieved and other nations could not attack the space assets directly, there is still a need for communication with those assets from Earth. There are also ground facilities that support and control such weapons located on the surface. Electromagnetic communication with satellites might be jammed or hacked and the ground facilities infiltrated or destroyed thus rendering the possible space weapons useless (Klein 2006, p. 105; Rendleman 2013, p. 81). This issue might be overcome by the establishment of a base controlling these assets outside the Earth-on Moon or lunar orbit, at lunar L-points, etc.-but this perspective remains, for now, unrealistic. Furthermore, no contemporary actor will risk full space weaponization in the face of possible competition and the possibility of rendering the outer space useless. No actor is dominant enough to prevent others to challenge any possible attempts to dominate the domain by military means. To quote 2016 Stratfor analysis, "(a) war in space would be devastating to all, and preventing it, rather than finding ways to fight it, will likely remain the goal" (Larnrani 20 16). This stands true unless some space actor finds a utility in disrupting the arena for others.

#### MAD checks space escalation – nuclear response and debris

Bowen 18 [Bleddyn Bowen, Lecturer in International Relations at the University of Leicester. The Art of Space Deterrence. February 20, 2018. https://www.europeanleadershipnetwork.org/commentary/the-art-of-space-deterrence/]

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

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#### No one’s going to war over a downed satellite

Bowen 18 [Bleddyn Bowen, Lecturer in International Relations at the University of Leicester. The Art of Space Deterrence. February 20, 2018. https://www.europeanleadershipnetwork.org/commentary/the-art-of-space-deterrence/]

Space is often an afterthought or a miscellaneous ancillary in the grand strategic views of top-level decision-makers. A president may not care that one satellite may be lost or go dark; it may cause panic and Twitter-based hysteria for the space community, of course. But the terrestrial context and consequences, as well as the political stakes and symbolism of any exchange of hostilities in space matters more. The political and media dimension can magnify or minimise the perceived consequences of losing specific satellites out of all proportion to their actual strategic effect.

#### 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.

### 1NC – South Asia

#### India is counterforce-capable – if a war starts India will wipe out Pakistan’s nukes

Clary and Narang 19 – Christopher, assistant professor of political science at the University at Albany, State University of New York, and Vipin, associate professor of political science at the Massachusetts Institute of Technology, “India’s Counterforce Temptations”, International Security, Vol. 43, No. 3

Is India shifting to a nuclear counterforce strategy? The conventional wisdom is that India only reluctantly acquired nuclear weapons and has been a restrained nuclear weapons power that adheres to a no-first-use (NFU) policy and rejects the possibility of nuclear warfighting. Although the empirical record largely bears out its reluctance to acquire nuclear weapons,1 India’s continued nuclear restraint is less certain. Specifically, India is developing a suite of capabilities and increasingly making statements about preemption and counterforce that appear inconsistent with its professed strategy of assured retaliation or minimum deterrence. This article identifies, and attempts to explain, why India has devoted considerable resources since 2003 to develop and acquire capabilities that exceed what is required for a strictly retaliatory nuclear arsenal. Specifically, why has India sought to build a diverse and growing number of accurate and responsive nuclear delivery systems at higher states of readiness, an increasing array of surveillance platforms, and both indigenous and imported air and ballistic missile defenses? Moreover, these capability developments have emerged alongside an increasing number of public statements by serving and retired Indian national security officials arguing that preemptive counterforce options against Pakistan are permissible doctrinally and advantageous strategically.2 We argue that these apparently discrepant capability developments are most likely the result of India’s conscious pursuit of more flexible options beyond countervalue targeting—namely, counterforce options against Pakistan’s longer-range nuclear systems—and are largely not the product of either technological drift or strategic confusion. If our assessment is correct, then these developments are an early indication of India’s exploration and development of options to target Pakistan’s strategic nuclear systems in a conflict. Unlike India’s nuclear strategy toward China, which appears to remain countervalue assured retaliation, available evidence suggests that India may be developing options toward Pakistan that would permit it to engage in hard nuclear counterforce targeting, providing India a limited ability to disarm Pakistan of strategic nuclear weapons.3 Such a development would entail a decoupling of India’s nuclear strategies toward its two neighbors. A shift to incorporating nuclear counterforce options may be an attempt to escape India’s strategic paralysis following Pakistan’s development of tactical nuclear weapons, which Pakistan threatens to use against Indian conventional forces should they cross certain red lines. What can India do if Pakistan uses one or several tactical nuclear weapons against Indian forces? India’s official nuclear doctrine explicitly threatens massive retaliation against any such use, which outside observers have widely interpreted as implying a major countervalue strike against Pakistani cities. Nevertheless, many have questioned the credibility of massive retaliation—whether any Indian leader would in fact order the killing of millions of innocent Pakistani civilians in response to nuclear use on Indian forces operating on Pakistani soil.4 If India chose not to retaliate with massive force, it could attempt a proportional tit-for-tat response. Such a response, however, would cede the nuclear initiative back to Pakistan, which, retaining its long-range strategic nuclear weapons, could respond by destroying one or several Indian cities. Further, pursuing such graduated options would place enormous pressure on India’s command and control system.5 Thus, some Indian policymakers appear to be attracted to a third option: a hard counterforce strike against Pakistan’s relatively small number—perhaps several dozen—strategic nuclear assets on land (and eventually at sea) to eliminate its ability to destroy Indian strategic targets and cities. Such a strategy would be consistent with India’s doctrine of massive retaliation—massive retaliation strategies need not be countervalue—while avoiding the credibility issues associated with a countervalue targeting strategy following Pakistan’s use of nuclear weapons on the battlefield. One problem with a counterforce option, however, is that, seized with the fear of a disarming strike, Pakistan would have an incentive to unleash its entire arsenal first before losing it, which in turn would encourage India to attempt a counterforce strike preemptively—a problem given India’s NFU commitment, which most commentators have assumed would oblige India or its forces to suffer a nuclear detonation before retaliating. We argue that these preemptive pressures associated with counterforce targeting may explain why a number of influential Indian officials have made a persistent and otherwise puzzling argument either that India should revise its NFU policy to permit preemption or that preemptive use upon warning of imminent Pakistani launch is consistent with its existing NFU policy. India’s adoption of potentially preemptive counterforce options—even as a choice on a menu that otherwise consists of countervalue retaliation options— would mark a seismic shift in Indian nuclear strategy and the death knell of so-called credible minimum deterrence. Furthermore, if India construes preemption as consistent with its NFU policy and therefore preemptive counterforce as a form of massive retaliation, it may decide that no overt changes to its declaratory doctrine are necessary. As India’s former National Security Adviser Shivshankar Menon recently stated, “India’s nuclear doctrine has far greater flexibility than it gets credit for.”6 In short, India’s national security officials may have already quietly concluded that preemptive counterforce options—and associated increases in strategic force capabilities—are consistent with India’s existing nuclear doctrine. Therefore, there may be no explicit acknowledgment or indicators of this shift, which may force Pakistan to adjust its nuclear posture and strategy on the fear that it has already occurred. Eliminating Pakistan’s strategic nuclear weapons would be tempting for India. Rather than current military plans that aim to punish Pakistan for future provocations while avoiding Pakistan’s nuclear red lines, plans for a counterforce-capable India would be able to wage whatever conventional war it prefers by eliminating the nuclear threat altogether. India might be able to reestablish deterrence against Pakistani terrorist attacks on Indian territory in ways that aborted adjustments to its conventional doctrine have failed to do.

#### It'll be successful, because India has supersonic missiles. BMD doesn’t work against those.

Christine Leah 18, visiting fellow at the Centre for International Strategic Studies (CISS), working on conventional arms sales and conventional and nuclear arms control in South Asia, “Counterforce to counter what?”, https://nation.com.pk/31-Jan-2018/counterforce-to-counter-what

With India developing its indigenous defence industry, and acquiring technology from the West as well, it seems to be on a track to gain an edge over its South Asian neighbors, especially Pakistan. This includes the acquisition/development with other countries on technology such as cruise missiles

, Airborne Warning and Control Systems (AWACS), and strike aircraft. Of these, inciting concern is India’s growing air combat and ground strike capacity based on Su-30 MKI, Mirage-2000H, Jaguar strike aircraft, Tu-22M backfire bombers, and more recently, C-295 transport aircraft, and the French Rafale which augment its capacity to go after its counterforce targets. Moreover, major arms sales to India in the last decade include U.S. F-16s and guided bombs for Jaguar aircraft. From France, the sales include 36 French-built Rafale planes, six Scorpene submarines, upgrades to 49 Mirage-2000-5, air-to air missiles for these planes and a huge sale of 126 multi-role medium combat aircraft. Similarly, Russia has exported combat aircraft such as 270 Su-30s, 45 naval Mig-29Ks, 150 Mi-17 transport helicopters and ten Ka-31 helicopters. In 2006, the DRDO and a Russian venture jointly developed the BrahMos cruise missile — a supersonic missile that combines Russian propulsion technology and new Indian guidance technology. BrahMos cruise missile can reach supersonic speed and thus bypass surface-to-air missile defense systems. Israel has also transferred electronic warfare technology and precision-guided munitions. The Indian-Israeli arms trade amounts to more than $2 billion annually. In 2004, the British company BAE Systems won a deal to sell advanced jet trainers to the Indian Air Force. In 2007, India paid the United States $50 million for the amphibious USS Trenton, and in 2009, Boeing won a $2 billion order for eight P-8 maritime reconnaissance aircraft and Lockheed Martin won a $1 billion contract for six C-1301J transport aircraft. Together with former U.S. President Barack Obama also offered to sell C-17 and F-414 aircraft. More so, India’s inclusion into the Missile Technology Control Regime gives it access to technology that is normally restricted for non-members. By stark contrast, the Pakistan Air Force has been denied state of the art aircraft acquisitions for two decades, and has been limited to refurbishing older high-performance aircraft. India is also expanding its naval capabilities, including a sea-based strike force as the logical step in its quest for an assured retaliatory capability. In turn, Pakistan’s naval nuclear developments are fueled by nuclear developments on the Indian side, an understandable reaction but one which has drawn considerable criticism. The drone technology which has been easily accessible to India is another controversial issue. Recently, the U.S. made a sales agreement with New Delhi for naval drones. It has been reported that Washington does not deem its sale of naval drones to India to be threatening for Pakistan, as it considers that these are not armed but are only intended for surveillance across the Indian Ocean. However, AWACS, drones, and other sophisticated surveillance and reconnaissance capabilities make India’s conventional strikes more effective, as well as enabling it to achieve air superiority more quickly. The accumulation of all this has increased threat to the survivability of Pakistani nuclear delivery systems. Indeed, it is capabilities like precision-guided munitions/guided bombs, in this particular strategic context, that make Pakistan more vulnerable to an Indian pre-emptive strike.

#### Otherwise, Pakistan’s nukes are vulnerable – causes global nuclear war

William Pitt 9, a New York Times and internationally bestselling author of two books: "War on Iraq: What Team Bush Doesn't Want You to Know" and "The Greatest Sedition Is Silence”, “Unstable Pakistan Threatens the World,” http://www.arabamericannews.com/news/index.php?mod=article&cat=commentary&article=2183

But a suicide bomber in Pakistan rammed a car packed with explosives into a jeep filled with troops today, killing five and wounding as many as 21, including several children who were waiting for a ride to school. Residents of the region where the attack took place are fleeing in terror as gunfire rings out around them, and government forces have been unable to quell the violence. Two regional government officials were beheaded by militants in retaliation for the killing of other militants by government forces. As familiar as this sounds, it did not take place where we have come to expect such terrible events. This, unfortunately, is a whole new ballgame. It is part of another conflict that is brewing, one which puts what is happening in Iraq and Afghanistan in deep shade, and which represents a grave and growing threat to us all. Pakistan is now trembling on the edge of violent chaos, and is doing so with nuclear weapons in its hip pocket, right in the middle of one of the most dangerous neighborhoods in the world.The situation in brief: Pakistan for years has been a nation in turmoil, run by a shaky government supported by a corrupted system, dominated by a blatantly criminal security service, and threatened by a large fundamentalist Islamic population with deep ties to the Taliban in Afghanistan. All this is piled atop an ongoing standoff with neighboring India that has been the center of political gravity in the region for more than half a century. The fact that Pakistan, and India, and Russia, and China all possess nuclear weapons and share the same space means any ongoing or escalating violence over there has the real potential to crack open the very gates of Hell itself. Recently, the Taliban made a military push into the northwest Pakistani region around the Swat Valley. According to a recent Reuters report: The (Pakistani) army deployed troops in Swat in October 2007 and used artillery and gunship helicopters to reassert control. But insecurity mounted after a civilian government came to power last year and tried to reach a negotiated settlement. A peace accord fell apart in May 2008. After that, hundreds — including soldiers, militants and civilians — died in battles. Militants unleashed a reign of terror, killing and beheading politicians, singers, soldiers and opponents. They banned female education and destroyed nearly 200 girls' schools. About 1,200 people were killed since late 2007 and 250,000 to 500,000 fled, leaving the militants in virtual control. Pakistan offered on February 16 to introduce Islamic law in the Swat valley and neighboring areas in a bid to take the steam out of the insurgency. The militants announced an indefinite cease-fire after the army said it was halting operations in the region. President Asif Ali Zardari signed a regulation imposing sharia in the area last month. But the Taliban refused to give up their guns and pushed into Buner and another district adjacent to Swat, intent on spreading their rule. The United States, already embroiled in a war against Taliban forces in Afghanistan, must now face the possibility that Pakistan could collapse under the mounting threat of Taliban forces there. Military and diplomatic advisers to President Obama, uncertain how best to proceed, now face one of the great nightmare scenarios of our time. "Recent militant gains in Pakistan," reported The New York Times on Monday, "have so alarmed the White House that the national security adviser, Gen. James L. Jones, described the situation as 'one of the very most serious problems we face.'" "Security was deteriorating rapidly," reported The Washington Post on Monday, "particularly in the mountains along the Afghan border that harbor al-Qaeda and the Taliban, intelligence chiefs reported, and there were signs that those groups were working with indigenous extremists in Pakistan's populous Punjabi heartland. The Pakistani government was mired in political bickering. The army, still fixated on its historical adversary India, remained ill-equipped and unwilling to throw its full weight into the counterinsurgency fight. But despite the threat the intelligence conveyed, Obama has only limited options for dealing with it. Anti-American feeling in Pakistan is high, and a U.S. combat presence is prohibited. The United States is fighting Pakistan-based extremists by proxy, through an army over which it has little control, in alliance with a government in which it has little confidence." It is believed Pakistan is currently in possession of between 60 and 100 nuclear weapons. Because Pakistan's stability is threatened by the wide swath of its population that shares ethnic, cultural and religious connections to the fundamentalist Islamic populace of Afghanistan, fears over what could happen to those nuclear weapons if the Pakistani government collapses are very real. "As the insurgency of the Taliban and Al Qaeda spreads in Pakistan," reported the Times last week, "senior American officials say they are increasingly concerned about new vulnerabilities for Pakistan's nuclear arsenal, including the potential for militants to snatch a weapon in transport or to insert sympathizers into laboratories or fuel-production facilities. In public, the administration has only hinted at those concerns, repeating the formulation that the Bush administration used: that it has faith in the Pakistani Army. But that cooperation, according to officials who would not speak for attribution because of the sensitivity surrounding the exchanges between Washington and Islamabad, has been sharply limited when the subject has turned to the vulnerabilities in the Pakistani nuclear infrastructure." "The prospect of turmoil in Pakistan sends shivers up the spinesof those U.S. officials charged with keeping tabs on foreign nuclear weapons," reported Time Magazine last month. "Pakistan is thought to possess about 100 — the U.S. isn't sure of the total, and may not know where all of them are. Still, if Pakistan collapses, the U.S. military is primed to enter the country and secure as many of those weapons as it can, according to U.S. officials. Pakistani officials insist their personnel safeguards are stringent, but a sleeper cell could cause big trouble, U.S. officials say." In other words, a shaky Pakistan spells trouble for everyone, especially if America loses the footrace to secure those weapons in the event of the worst-case scenario. If Pakistani militants ever succeed in toppling the government, several very dangerous events could happen at once. Nuclear-armed India could be galvanized into military action of some kind, as could nuclear-armed China or nuclear-armed Russia. If the Pakistani government does fall, and all those Pakistani nukes are not immediately accounted for and secured, the specter (or reality) of loose nukes falling into the hands of terrorist organizations could place the entire world on a collision course with unimaginable disaster. We have all been paying a great deal of attention to Iraq and Afghanistan, and rightly so. The developing situation in Pakistan, however, needs to be placed immediately on the front burner. The Obama administration appears to be gravely serious about addressing the situation. So should we all.

#### Even if Pakistan retaliates, no extinction now – India has BMD and it works to protect cities from current Pakistani nukes

Zachary Keck 18, very intelligent, Public Affairs Fellow at the Nonproliferation Policy Education Center, "India's Missile Defenses Can Now Take On Decoys. That's a Really Big Deal.", National Interest, https://nationalinterest.org/blog/buzz/indias-missile-defenses-can-now-take-decoys-thats-really-big-deal-28627

India’s efforts to build a homegrown ballistic missile defense system achieved a major success. On August 2nd, India tested its Advanced Area Defence (AAD)/Ashvin Advanced Defense interceptor missile against decoy targets for the first time. “One target among simultaneously incoming multiple targets was selected on [sic] real time, the weapon system radars tracked the target and the missile locked on to it and intercepted the target with a high degree of accuracy,” India’s government announced in [a press release](http://pib.nic.in/newsite/PrintRelease.aspx?relid=181451) . The test was against a medium-range ballistic missile with a range of 1,500 kilometers. Franz-Stefan Gady of The Diplomat [speculates that this](https://thediplomat.com/2018/08/indias-advanced-air-defense-interceptor-shoots-down-ballistic-missile-target-in-test/) was the first test of the new indigenous imaging infrared (IIR) seeker, which was developed to help the interceptors distinguish warheads from decoy/dummies. This capability is increasingly necessary as countries like China and [Pakistan](https://thediplomat.com/2017/01/why-pakistans-newly-flight-tested-multiple-nuclear-warhead-capable-missile-really-matters/) develop multiple independently targetable reentry vehicles (MIRV) and multiple reentry vehicles (MRVs). MIRVs allow a single missile to aim warheads at different targets whereas MRVs contain multiple warheads but at the same target. The use of decoys are a more cost effective way to try to confuse missile defense systems enough so that the warheads get through to their target. Either way, though, India’s missile defense systems will need to be able to engage multiple targets simultaneously. The most recent test was overseen by the Defense Research Development Organization (DRDO), the premier defense technology agency within India’s Ministry of Defense. It took place at Abdul Kalam Island, Odisha in the Bay of Bengal. The AAD is a single-stage solid-fueled hit-to-kill interceptor missile that destroys hostile missiles in the terminal phase of flight. The press release says it is capable of destroying targets at altitudes of 15 and 25 kilometers. The AAD had been tested at least five times before this most recent one. Those include tests in December, March and February 2017 as well as one a piece in 2016 and 2015. The Diplomat’s Gady says the earlier tests were all against Prithvi-II or III short-range ballistic missiles. Given the range cited in the press statement, the test this month was against a different and more powerful missile. The Prithvi missiles are also the basis for the other missile defense system that India is seeking to build. The Prithvi missile defense interceptors are used for exo-atmospheric intercepts (i.e. those outside the atmosphere) whereas the AAD are for endo-atmospheric intercepts. Prithvi Air Defense missile is more developed than the AAD having [been first tested](https://nationalinterest.org/blog/the-buzz/americas-killer-m1-abrams-tank-now-has-its-own-shields-22719) in 2007. Besides trying to build its own missile defense systems, India is also looking to purchase them from abroad. For years there have been reports that India is interested in buying Russia’s S-400 air and missile defense system. At the October 2016 BRICS summit in Goa, Indian Prime Minister Narendra Modi and Russian President Vladimir Putin [announced a $5 billion deal](http://www.news18.com/news/india/brics-summit-2016-india-to-buy-5-billion-air-defence-system-from-russia-1301952.html) for Delhi to acquire the S-400 Triumf air defense system. There was increased chatter that a deal was imminent in December 2017. "We hope that the S-400 deal will be signed with India soon," Russian Vice-Premier Dmitry Rogozin [said late](http://tass.com/defense/983372) last year. Around the same time, Viktor N. Kladov, director for international cooperation and regional policy of Rostec, a massive Russian conglomerate, made similar comments, saying that negotiations over the S-400 had reached a “very profound stage.” It appears that this sale might have been slowed because of fears that the United States would sanction India for purchasing the Russian system. The recently passed 2019 National Defense Authorization Act (NDAA) [provided a waiver](https://timesofindia.indiatimes.com/india/us-congressional-conference-report-paves-way-for-caatsa-waiver-for-india/articleshow/65112640.cms) for India from Russia related sanctions. Thus, the deal might soon go through. India also recently announced it would spend $1 billion to purchase a National Advanced Surface to Air Missile System-II (NASAMS-II) to protect the capital city of Delhi. Built by the U.S. firm Raytheon and the Norwegian company Kongsberg Defense and Aerospace, India intends to use the NASAMS to deal with cruise missile and other aerial threats against the capital. “Once the Phase-I of the BMD [ballistic missile defense] system is operational,” [a source told the Times of India](https://timesofindia.indiatimes.com/india/like-washington-moscow-delhi-too-to-get-missile-shield/articleshow/65181833.cms) , referring to the AAD and Prithvi systems, “it will be deployed to protect cities like Delhi and Mumbai... The NASAMS, in turn, is geared towards intercepting cruise missiles, aircraft, and drones.”