### Riders DA

#### The plan requires clarifying international space law---causes strategic bargaining to extract concessions

Alexander William Salter 16, Assistant Professor of Economics, Rawls College of Business, Texas Tech University, "SPACE DEBRIS: A LAW AND ECONOMICS ANALYSIS OF THE ORBITAL COMMONS", 19 STAN. TECH. L. REV. 221 (2016), https://law.stanford.edu/wp-content/uploads/2017/11/19-2-2-salter-final\_0.pdf

V. MITIGATION VS. REMOVAL

Relying on international law to create an environment conducive to space debris removal initially seems promising. The Virginia school of political economy has convincingly shown the importance of political-legal institutions in creating the incentives that determine whether those who act within those institutions behave cooperatively or predatorily.47 In the context of space debris, the role of nation-states, or their space agencies, would be to create an international legal framework that clearly specifies the rules that will govern space debris removal and the interactions in space more generally. The certainty afforded by clear and nondiscriminatory48 rules would enable the parties of the space debris “social contract” to use efficient strategies for coping with space debris. However, this ideal result is, in practice, far from certain. To borrow a concept from Buchanan and Tullock’s framework,49 the costs of amending the rules in the case of international space law are exceptionally high. Although a social contract is beneficial in that it prevents stronger nation-states from imposing their will on weaker nation-states, it also creates incentives for the main spacefaring nations to block reforms that are overall welfare-enhancing but that do not sufficiently or directly benefit the stronger nations.

The 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (more commonly known as the Outer Space Treaty) is the foundation for current international space law.50 All major spacefaring nations are signatories. Article VIII of this treaty is the largest legal barrier to space debris removal efforts. This article stipulates that parties to the treaty retain jurisdiction over objects they launch into space, whether in orbit or on a celestial body such as the Moon. This article means that American organizations, whether private firms or the government, cannot remove pieces of Chinese or Russian debris without the permission of their respective governments. Perhaps contrary to intuition, consent will probably not be easy to secure.

A major difficulty lies in the realization that much debris is valuable scrap material that is already in orbit. A significant fraction of the costs associated with putting spacecraft in orbit comes from escaping Earth’s gravity well. The presence of valuable material already in space can justifiably be claimed as a valuable resource for repairs to current spacecraft and eventual manufacturing in space. As an example, approximately 1,000 tons of aluminum orbit as debris from the upper stages of launch vehicles alone. Launching those materials into orbit could cost between $5 billion and $10 billion and would take several years.51 Another difficulty lies in the fact that no definition of space debris is currently accepted internationally. This could prove problematic for removal efforts, if there is disagreement as to whether a given object is useless space junk, or a potentially useful space asset. Although this ambiguity may appear purely semantic, resolving it does pose some legal difficulties. Doing so would require consensus among the spacefaring nations. The negotiation process for obtaining consent would be costly.

Less obvious, but still important, is the 1972 Convention on International Liability for Damage Caused by Space Objects, normally referred to as the Liability Convention. The Liability Convention expanded on the issue of liability in Article VII of the Outer Space Treaty. Under the Liability Convention, any government “shall be absolutely liable to pay compensation for damage caused by its space objects on the surface of the Earth or to aircraft, and liable for damage due to its faults in space.”52 In other words, if a US party attempts to remove debris and accidentally damages another nation’s space objects, the US government would be liable for damages. More generally, because launching states would bear costs associated with accidents during debris removal, those states may be unwilling to participate in or permit such efforts. In theory, insurance can partly remediate the costs, but that remediation would still make debris removal engagement less appealing.

A global effort to remediate debris would, by necessity, involve the three major spacefaring nations: the United States, Russia, and China.53 However, any effort would also require—at a minimum—a significant clarification and—at most —a complete overhaul of existing space law.54 One cannot assume that parties to the necessary political bargains would limit parleying to space-related issues. Agreements between sovereign nation-states must be self-enforcing.55 To secure consent, various parties to the change in the international legal-institutional framework may bargain strategically and may hold out for unrelated concessions as a way of maximizing private surplus. The costs, especially the decision-making costs, of changing the legal framework to secure a global response to a global commons problem are potentially quite high.

#### Russia uses negotiations to push the PPWT---erodes US space dominance---unilat solves

Michael Listner 18, JD, Regent University School of Law, the founder and principal of the legal and policy think-tank/consultation firm Space Law and Policy Solutions, Sept 17 2018, "The art of lawfare and the real war in outer space", The Space Review, www.thespacereview.com/article/3571/1

A battle for primacy in outer space took place on August 14, 2018, among the Russian Federation, the United States, and, indirectly, the People’s Republic of China. This battle did not involve the exotic technology of science fiction, antisatellite weapons (ASATs), or the incapacitation of satellites; it was not part of a hot war and did not even occur in outer space. Rather, it took place in the halls of the Conference of Disarmament in Geneva, Switzerland, and concerned the interdiction of the hypothetical deployment of instrumentalities of a hot war in outer space. The carefully orchestrated arena for this battle by the proponents of banning so-called space weapons involved methodologies, institutions, and agents of international law but was undermined by a vigorous counterattack by the United States using the same forum and suite of instruments so skillfully levied against it.1 This battle, of course, is not a single instance but the latest skirmish of a much larger conflict involving real war in space.

There’s been significant attention—and overstatem­ent— about the effect of a proposed Space Force by the United States, including an arms race and dominance as articulated by the United States,2 yet little attention has been given to the contest that continues to be fought over outer space using the tools of international law and policy, both of which are instruments of “lawfare.” Maj. General Charles N. Dunlap, Jr. (retired)3 first defined lawfare in the paper “Law and Military Interventions: Preserving Humanitarian Values in 21st Conflicts,” as “a method of warfare where law is used as a means of realizing a military objective.”4 This definition can be expanded to the use of hard law, soft law, and non-governmental organizations and institutions within the international arena to achieve a national objective and geopolitical end that would otherwise require the use of hard power. As observed by General Dunlap, lawfare imputes the teachings of Sun Tzu in particular this teaching: “The supreme art of war is to subdue the enemy without fighting.”5

Lawfare is not a new concept and has been used in many domains, but the tools brought to bear have become more prolific, and the domain of outer space has been and continues to be a theater where it is applied. The earliest example of lawfare (even though the term was not yet coined) in outer space occurred pre-Sputnik with Soviet Union attempting to use customary law to make claims of sovereignty extending beyond the atmosphere to the space above its territory. This claim was preempted by the launch of Sputnik 1 and the act of the satellite flying over the territory of other nations.6 The Eisenhower Administration saw this as an opportunity to meet a national space policy goal and likewise used customary law as an implement of lawfare and successfully created the principle of free access to outer space, which it utilized for photoreconnaissance activities in lieu of overflights of another nation’s sovereign airspace.7 The Soviet Union unsuccessfully attempted to defeat this move using lawfare in the United Nations through a proposal that would have prohibited the use of outer space for the purpose of intelligence gathering.8

Since that setback, the art of lawfare in outer space has settled on the objective ascribed to another teaching of Sun Tzu:

“With regard to precipitous heights, if you proceed your adversary, occupy the raised and sunny spots, and there wait for him to come up. Remember, if the enemy has occupied precipitous heights before you, do not follow him, but retreat and try to entice him away.”9

The second part of this teaching exemplifies the role of lawfare in the present war in outer space: to employ the tools and institutions of international law as a means to legally corner an adversary and gain geopolitical advantage in soft power, with the aim of slowing and eroding the advantage that adversary has attained through preeminence in the domain of outer space, and replace it with their own. This objective is accomplished by two general means: legally-binding measures, most commonly in the form of treaties, and so-called non-binding measures couched as sustainability.

Lawfare in space continued in the intervening years between Sputnik-1 and the signature and ratification of the Outer Space Treaty and afterward. The weapon of choice: disarmament proposals for outer space. Provisions for banning so-called space weapons in the Outer Space Treaty were rejected by the Soviet Union in favor of separate arms control measures.10 These measures included proposals, some of which related to the proscription of ASATs, designed to not only gain an advantage in outer space but to gauge political intent and resolve.11

The lawfare offensive escalated after the proposed Strategic Defense Initiative with an effort curtail space-based missile defense technology through a ban on so-called space weapons and a proverbial arms race in outer space. The Prevention of an Arms Race in Outer Space (PAROS), introduced in 1985, continues to seek a legally binding measure to place any weapon in outer space, including those designed for self-defense. It spawned measures such as the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects (PPWT), co-sponsored by Russia and China. This and other measures have met resistance as unverifiable and certainly are not likely to gain the advice and consent of the US Senate for ratification. The end game of the use of lawfare in the form of efforts like PAROS—the latest attempt at which was defeated in Geneva—is to propose legally binding measures that proponents would ignore to their advantage in any event. The sponsors and advocates of these hard-law measures recognize they will not come to fruition but, in the process of promoting them, will enhance their soft power and moral authority, which can be applied to entice their adversary down.

Non-binding resolutions and measures in the form of political agreements and guidelines are being used concurrently in the lawfare engagement in outer space, where proposals for legally binding measures alone fall short of the goal of creating hard law and challenging dominance in outer space. These resolutions and measures, which emphasize sustainability, are designed to perform an end run around the formalities of a treaty to entice agreement on issues that would otherwise be unacceptable in a hard-law agreement. These measures have the dual effect to create soft-power support on the one hand and hard law on the other. This tool of lawfare, which uses clichés of cooperation and sustainability, is a ploy that applies the ambiguous nature of customary international law to achieve what cannot be done through treaties: to “entice the adversary away” and create legal and political constraints to bind and degrade its use of outer space or prevent it from maintaining its superiority, all the while allowing others to play catchup and replace one form of dominance with another. While lawfare is by nature asymmetric, this indirect approach could be considered a subset an irregular tactic of lawfare, as opposed to the use of formal treaties in lawfare.

The crux is that, like space objects used in outer space, international law and its implements are dual-use in that they can be used for proactive ends or weaponized, with those using the appliances of lawfare to encourage cession of the high ground choosing the latter rather than the former. The decision to weaponize international law and its institutions to prosecute this war in space brings into question the efficacy of new rules or norms. Indeed, the idea of expanding the jurisprudence of outer space through custom, as being suggested by the United States, and more recently gap-filling rules being suggested by academia that could become custom, presents the real chance that, rather than the creation of the ploughshare of sustainability, new and more effective swords for lawfare will be forged.

To paraphrase Sun Tzu, “all war is deception.” In the case of outer space, the pretext in the current war in space is that an arms race and a hot war in outer space is inevitable, and can only be avoided by formal rules or international governance. Conversely, a hot war can be prevented in no small part by using lawfare to engage in the contemporary war in space using the tools of, and the abundant resources found in, the experience of attorneys and litigators in particular to supplement and support diplomats to extend the velvet glove when applicable, and bare knuckles when necessary. If the August 14 statement in Geneva is any indicator, the United States may have just done that and begun the shift from light-touch diplomacy to bringing its legal warriors to bear in full-contact lawfare to engage and win the current war in outer space and help deter a more serious hot war from occurring without sacrificing the superiority it possesses in outer space.

#### The PPWT prohibits space-based missile defense

Jack M. Beard 16, Associate Professor of Law at the University of Nebraska College of Law, Feb 15 2016, "Soft Law ’s Failure on the Horizon: The International Code of Conduct for Outer Space Activities", University of Pennsylvania Journal of International Law, Vol. 38, No. 2, 2016, <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1086&context=spacelaw>

B. Avoid Arms Control Traps in Space

Any successful effort to achieve legally binding restrictions on military activities or weapons in space must focus on specific, definable, and limited objectives or run afoul of issues that have historically ensured deadlock among suspicious and insecure adversaries.306 Some seemingly desirable goals, however, are likely to ensure failure.

The first such problematic goal involves attempting to use arms control agreements or other instruments to comprehensively ensure peace in space. Unfortunately, the integration of modern military systems on earth, sea, air and space guarantees that at some point states seeking to disrupt or deny the ability of an adversary (such as the United States) to project power will find space capabilities to be a particularly appealing target, especially in the early stages of a crisis or conflict.307 The presence of so many things of military value in space thus makes actions by an adversary to neutralize, disrupt or destroy these things likely during a major conflict on earth.308

The second problematic arms control goal in space that seems certain to ensure stalemate involves attempting to define and prohibit military technologies with a view to broadly prevent the weaponization of space. Clearly defining a space weapon for purposes of any legally binding arms control agreement is a daunting task, one which is made particularly challenging by the “essentially military nature of space technology.”309 As noted, space technologies are routinely viewed as dual-use in nature, meaning that they can be readily employed for both civilian and military uses. Determining the ultimate purpose of many space technologies may thus depend on discerning the intentions of states, a process perhaps better suited for psychological than legal evaluation. 310

Further complicating the classification of space military technologies is the inherent difficulty in distinguishing most space weapons on the basis of their offensive and defensive roles or even their specific missions.311 For example, this problem lies at the heart of debates over the status and future of ballistic missile defense (BMD) programs, since the technology underlying BMD systems and offensive ASAT weapons is often indistinguishable.312 Vague and broad soft law instruments do not resolve this problem, but create instead their own confusion and insecurity. Vague and broad provisions in legally binding agreements that do not or cannot distinguish between these missions are similarly problematic.

These issues, particularly difficulties in distinguishing ASAT and BMD systems, have figured prominently in complicating negotiations on space weapons over previous decades.313 Similarly, these concerns were a significant factor in initial U.S. opposition to the arms control measure proposed by China and Russia (the PPWT) since it prohibits states from placing any type of weapon in outer space (regardless of its military mission), thus effectively prohibiting the deployment of ballistic missile defense systems. 314 Furthermore, even if clear legal restrictions could be developed, verifying compliance with respect to technology in orbit around Earth would be very difficult (a point conceded even by China with respect to its own proposed PPWT).315

#### Causes rogue state missile threats---that escalates

Patrick M. Shanahan 19, Acting Secretary of Defense from January to June 2019, previously vice president and general manager of Boeing Missile Defense Systems, Jan 2019, "2019 MISSILE DEFENSE REVIEW", US Department of Defense, https://media.defense.gov/2019/Jan/17/2002080666/-1/-1/1/2019-MISSILE-DEFENSE-REVIEW.PDF

U.S. Homeland Missile Defense will Stay Ahead of Rogue States’ Missile Threats

Technology trends point to the possibility of increasing rogue state missile threats to the U.S. homeland. Vulnerability to rogue state missile threats would endanger the American people and infrastructure, undermine the U.S. diplomatic position of strength, and could lead potential adversaries to mistakenly perceive the United States as susceptible to coercive escalation threats intended to preclude U.S. resolve to resist aggression abroad. Such misperceptions risk undermining our deterrence posture and messaging, and could lead adversaries to dangerous miscalculations regarding our commitment and resolve.

It is therefore imperative that U.S. missile defense capabilities provide effective protection against rogue state missile threats to the homeland now and into the future. The United States is technically capable of doing so and has adopted an active missile defense force-sizing measure for protection of the homeland. DoD will develop, acquire, and maintain the U.S. homeland missile defense capabilities necessary to effectively protect against possible missile attacks on the homeland posed by the long-range missile arsenals of rogue states, defined today as North Korea and Iran, and to support the other missile defense roles identified in this MDR.

This force-sizing measure for active U.S. missile defense is fully consistent with the 2018 NPR, and in order to keep pace with the threat, DoD will utilize existing defense systems and an increasing mix of advanced technologies, such as kinetic or directed-energy boost-phase defenses, and other advanced systems. It is technically challenging but feasible over time, affordable, and a strategic imperative. It will require the examination and possible fielding of advanced technologies to provide greater efficiencies for U.S. active missile defense capabilities, including space-based sensors and boost-phase defense capabilities. Further, because the related requirements will evolve as the long-range threat posed by rogue states evolves, it does not allow a static U.S. homeland defense architecture. Rather, it calls for a missile defense architecture that can adapt to emerging and unanticipated threats, including by adding capacity and the capability to surge missile defense as necessary in times of crisis or conflict.

In coming years, rogue state missile threats to the U.S. homeland will likely expand in numbers and complexity. There are and will remain inherent uncertainties regarding the potential pace and scope of that expansion. Consequently, the United States will not accept any limitation or constraint on the development or deployment of missile defense capabilities needed to protect the homeland against rogue missile threats. Accepting limits now could constrain or preclude missile defense technologies and options necessary in the future to effectively protect the American people.

As U.S. active defenses for the homeland continue to improve to stay ahead of rogue states’ missile threats, they could also provide a measure of protection against accidental or unauthorized missile launches. This defensive capability could be significant in the event of destabilizing domestic developments in any potential adversary armed with strategic weapons, and as long-range missile capabilities proliferate in coming years.

U.S. missile defense capabilities will be sized to provide continuing effective protection of the U.S. homeland against rogue states’ offensive missile threats. The United States relies on nuclear deterrence to address the large and more sophisticated Russian and Chinese intercontinental ballistic missile capabilities, as well as to deter attacks from any source consistent with long-standing U.S. declaratory policy as re-affirmed in the 2018 NPR.

### CP

#### CP Text: States ought to ratify the Kigali Amendment

#### Ozone layer is fixed by 2030 because of the Montreal Protocol

N/A, 9-16-2019, "Ozone on track to heal completely in our lifetime, UN environment agency declares on World Day.," UN News, https://news.un.org/en/story/2019/09/1046452//EL

The phaseout of controlled uses of ozone-depleting substances has not only helped replenish the protective layer for future generations but is also helping guard human health by filtering harmful rays from reaching Earth, said UNEP shared in a statement. The recognition of this success comes on World Ozone Day, marked 16 September. This year celebrates “32 Years and Healing”; a commemoration of the international commitment to protect the ozone later and the climate under the historic Montreal Protocol, which has led to the phase-out of 99 per cent of ozone-depleting chemicals in refrigerators, air-conditioners and other consumer products. Since 2000, parts of the ozone layer have recovered at a rate of 1-3 per cent every ten years, the latest Scientific Assessment of Ozone Depletion estimates. At projected rates the “Northern Hemisphere and mid-latitude ozone will heal completely by the 2030’s”, UNEP said, with the Southern Hemisphere repaired by the 2050’s, and Polar Regions in the following decade. UN Secretary-General, António Guterres said “we must be careful not to neglect the ozone layer,” as we “rightly focus our energies on tackling climate change”, spotlighting the importance of preventing threats posed by emission of ozone-depleting gases. Regenerating the ozone has helped curb the effects of climate change - with approximately 135 billion tonnes of carbon dioxide emissions from 1990 to 2010 averted by a strong protective shield. As of late last year, the World Meteorological Organization (WMO) reported the global concentration of carbon dioxide and other greenhouse gases is still steadily on the rise, with consequential warming effects on the planet and ozone-teardown. Damaging effects of ozone-depleting substances allow increased ultraviolet (or UV) rays to reach the earth, increasing incidents of skin cancers, eye cataracts, compromised immune systems and harm to agricultural lands and forests. The Montreal Protocol is, to date, the only UN treaty to be adopted by all Member States, with all parties sharing responsibilities relating to phasing out ozone-depleting substances, controlled trade of such substances, annual data reporting and other matters. “We can celebrate success,” UNEP said, “but we must all push to keep hold of these gains, in particular by remaining vigilant and tackling any illegal sources of ozone-depleting substances as they arise.” Looking forward, the agency has called for wholehearted support of the Kigali Amendment to the Montreal Protocol, which entered into force on 1 January of this year. The agreement targets the phasing of hydrofluorocarbons (HFCs), climate-warming gases, which could avoid up to 0.4 degrees Celsius of global temperature rise by end of the century.

#### Regulations based on the Montreal Protocol are historically successful and minimize ozone

NASA, 9-18-2012, "Watching the Ozone Hole Before and After the Montreal Protocol," No Publication, https://earthobservatory.nasa.gov/images/79198/watching-the-ozone-hole-before-and-after-the-montreal-protocol//EL

About a quarter-century ago, scientists and policymakers unveiled what the United Nations calls “the most successful treaty in UN history.” On September 16, 1987, the first 24 nations signed on to the Montreal Protocol on Substances that Deplete the Ozone Layer; 173 more have signed on in the years since. The international agreement likely saved the world from an environmental crisis, while setting an example for how to develop and implement environmental policy. Prompted by scientific observations from the laboratory, the ground, aircraft, and satellites, the Montreal Protocol first reduced and then banned the chlorine- and bromine-based chemicals (particularly chlorofluorocarbons, or CFCs) that destroy atmospheric ozone. The destruction of the ozone layer allows more of the Sun’s ultraviolet radiation to reach the surface of the planet, increasing the risk of sunburns, skin cancer, and eye damage. The most prominent and infamous sign of depletion is the annual “ozone hole” that forms around the South Pole. The images above show the Antarctic ozone hole on September 16 (the International Day for the Preservation of the Ozone Layer) in the years 1979, 1987, 2006, and 2011. The first two maps are based on data from the Total Ozone Mapping Spectrometer (TOMS) on the Nimbus-7 satellite. The other two maps are made with data from the Ozone Monitoring Instrument on the Aura satellite. Though taken by different instruments, the data sets have all been cross-calibrated and reanalyzed by scientific models. An animation of the data (high-resolution download below the main image) reveals the formation and dissipation of the ozone hole from July 1 to December 31 in each of the four years. Stratospheric ozone is typically measured in Dobson Units (DU), which is the number of molecules required to create a layer of pure ozone 0.01 millimeters thick at a temperature of 0 degrees Celsius and an air pressure of 1 atmosphere (the pressure at the surface of the Earth). The average amount of ozone in Earth’s atmosphere is 300 Dobson Units, equivalent to a layer 3 millimeters (0.12 inches) thick—the height of 2 pennies stacked together. In 1979—when scientists were just coming to understand that atmospheric ozone could be depleted—the area of ozone depletion over Antarctica grew to 1.1 million square kilometers, with a minimum ozone concentration of 194 Dobson Units. In 1987, as the Montreal Protocol was being signed, the area of the hole reached 22.4 million square kilometers and ozone concentrations dropped to 109 DU. By 2006, the worst year for ozone depletion to date, the numbers were 29.6 million square kilometers and just 84 DU. By 2011, the most recent year with a complete data set, the hole stretched 26 million square kilometers and dropped to 95 DU. According to NASA scientist Pawan Bhartia, “The Antarctic hole is stabilizing and may be slowly recovering. Our focus now is to make sure that it is healing as expected.” The amount of ozone-depleting substances (ODS) in the atmosphere has stopped rising in recent years, and may actually be decreasing. The yearly ozone hole should continue for a while, though, as CFCs and other ODSs can last for decades in the air. Scientists found in a 2009 study that without the Montreal Protocol, global ozone depletion (not just Antarctic) would be at least 10 times worse than current levels by 2050. “Changes in the ozone hole now are not significantly driven by changes in CFCs, but instead driven by year-to-year changes in weather in the stratosphere,” said Bhartia, who in 1985 was the first researcher to present satellite data showing the Antarctic ozone hole. “Like two snowflakes, two ozone holes are never alike. ”

#### The Kigali Amendment to the Montreal Protocol prevents production of CFCs – companies and countries support it

Mohamed Atani, 1-16-2018, "The Kigali Amendment to the Montreal Protocol: Another Global Commitment to stop climate change," UNEP, https://www.unep.org/news-and-stories/story/kigali-amendment-montreal-protocol-another-global-commitment-stop-climate//EL

For many people across the world, the 15th of October, 2016 was just another normal day going about their usual business to accomplish their to-do lists for the day. Perhaps unknown to many outside the world of ‘environment’ and all its jargon, something extremely significant was happening in Africa, in the beautiful Rwanda. Delegates from all over the world had convened in the capital, Kigali from October 10-15, for the 28th Meeting of the Parties to the Montreal Protocol. Back in the 1920’s, coolants and fridges were discovered to be very toxic, causing severe health complications to humans. CFCs were the solution to address this, but decades later, CFCs were also found to be the root cause of a hole in the stratosphere- commonly referred to as the ozone hole. The ozone layer is the natural shield against the sun’s harmful ultraviolet rays, which can cause severe health risks such as skins cancers. This damage to the ozone layer prompted governments to moot an environmental agreement to govern the production and use of harmful substances that damage the ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer was designed to reduce the production and consumption of ozone depleting substances in order to reduce their abundance in the atmosphere, and thereby protect the earth’s fragile ozone Layer. The protocol was agreed on September 16th in 1987 and entered into force on January 1st in 1989. A unique feature of the protocol is an adjustment provision that enables the Parties to the Protocol to respond quickly to new scientific information, in a bid to accelerate the reductions required on chemicals already covered by the Protocol. These adjustments are then automatically applicable to all countries that ratified the Protocol. Developing countries are given more time to comply with the phase out decisions, and also they receive funding from the Multilateral Fund to facilitate compliance with the Protocol’s provisions. In Kigali, delegates worked tirelessly day and night to negotiate and reach a deal on a timetable that would mandate countries to phase down the production and usage of hydroflourocarbons (HFCs). Following seven years of continuous consultations, Parties to the Montreal Protocol struck a landmark legally binding deal to reduce the emissions of powerful greenhouse gases in a move that could prevent up to 0.5 degrees Celsius of global warming by the end of this century, while continuing to protect the ozone layer. HFCs are man-made chemicals that are primarily used in air conditioning, refrigeration and foam insulation, and are powerful greenhouse gases that can be thousands of times more potent than carbon dioxide in contributing to climate change. The 2015 Africa Adaptation Gap Report observes that for a below 20C global warming scenario the agriculture sector will be hit by up to 40% yield declines, and result in a 25 – 90% increase in incidences of undernourishment putting 50% of Africa’s population under risk of undernourishment, not to mention massive economic losses given that the sector employs up to 64 per cent labor and contributes up to 34 per cent to GDP on average. “Africa is a continent that is deeply vulnerable to climate change. We are witnessing disastrous droughts — our people are losing lives. We need to address climate change if we are to address poverty,” said Vincent Biruta, Rwanda’s Minister of Natural Resources. Environmental experts note that the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer could be the single largest real contribution the world has made so far towards keeping the global temperature rise "well below" 2 degrees Celsius, a target agreed at the Paris climate conference last year; this amendment is a huge step forward to achieving that target. The talks in Kigali may not have attracted as much attention as the Paris event last year, but the outcome from the meeting is expected to have even greater impact on Parties’ efforts to slow down climate change. The new deal includes specific targets and timetables to replace HFCs with more planet-friendly alternatives, provisions to prohibit or restrict countries that have ratified the protocol or its amendments from trading in controlled substances with states that are yet to ratify it, and an agreement by rich countries to help finance the transition of poor countries to alternative safer products. Notably, African countries opted to phase down the chemicals faster than required, citing the grave threats the region faces due to climate change. Top officials from the chemical industry, including producers of the chemicals, manufacturers of equipment that use HFCs were also in Kigali; a demonstration that companies throughout the HFCs supply chain support strong global action on these harmful substances. The final deal divided the world economies into three groups, each with a target phasedown date. The richest countries, including the United States and those in the European Union, will reduce the production and consumption of HFCs from 2019. Much of the rest of the world, including China, Brazil and all of Africa, will freeze the use of HFCs by 2024. A small group of the world’s hottest countries such as Bahrain, India, Iran, Iraq, Kuwait, Oman, Pakistan, Qatar, Saudi Arabia, and the United Arab Emirates have the most lenient schedule and will freeze HFCs use by 2028. As pressure mounts on governments worldwide for less talk and more action to address climate change, the Kigali Amendment is indeed, a commendable move that adds momentum to a series of new global climate change agreements, including the Paris agreement which will officially enter into force next month on 4 November, 2016.

#### Biden says yes, causing follow on

Alex Hillbrand, 1-27-2021, "Biden Announces Move to Ratify Kigali Amendment on HFCs," NRDC, https://www.nrdc.org/experts/alex-hillbrand/biden-announces-move-ratify-kigali-amendment-hfcs//EL

Earlier today, by executive order, President Biden directed his administration to prepare to send the Kigali Amendment phasing down super-polluting hydrofluorocarbons (HFCs) to the Senate for its advice and consent to U.S. ratification. The president’s quick action on Kigali sends a powerful signal to the world that the U.S. will join the global effort to cut reliance on these dangerous gases and drive a deep domestic and international climate agenda as well. The order formally directs the State Department to prepare a ‘transmittal package’ to the U.S. Senate for the Kigali Amendment, the first step of the U.S. ratification process, within 60 days. The Kigali Amendment is a 2016 global pact under the Montreal Protocol to phase down climate-warming HFCs over the coming decades. Both Gina McCarthy and John Kerry helped negotiate the agreement, which the U.S. signed in 2016 but has not yet ratified. Amendments to the Montreal Protocol typically require the Senate’s ‘advice and consent’ to ratification, making today’s announcement a key step towards bringing the U.S. properly into the agreement. The Biden administration’s move shows how serious it is about achieving the massive climate benefits the Kigali Amendment can deliver. Kigali implementation worldwide can avoid HFC use equivalent to as much as 70 billion tons of carbon dioxide between now and 2050 and can prevent up to one half a degree Celsius of climate warming over this century. The passage of the bipartisan American Innovation and Manufacturing Act at the end of the last Congress equips the administration with comprehensive authority to carry out the HFC phasedown in the United States. NRDC and our partners plan to be there each step of the way to make sure EPA and other agencies move as quickly and ambitiously as they can to reduce U.S. HFC by 85% over 15 years, as Kigali requires, or more. Once the State Department submits the transmittal package, it will fall to the U.S. Senate to determine whether to move forward with Kigali ratification. The prospects seem bright: in 2018 thirteen Republican Senators sent a letter to President Trump expressing support for ratifying the Kigali amendment and noting its economic benefits for the United States. And more than 17 GOP Senators cosponsored the AIM Act, along with essentially all Democrats. Like the original Montreal Protocol and subsequent amendments, there is every reason to expect bipartisan support for Kigali ratification. Congress has also repeatedly appropriated funds to support the Montreal Protocol’s Multilateral Fund, which assists developing countries in their implementation. The continuation of this support will be essential to achieving Kigali’s potential benefits. More than 120 nations have already ratified the Kigali Amendment. U.S. ratification will pave the way for similar action by China, India, and other major economies already moving forward on domestic action but which have yet to ratify. Several of these countries were understandably waiting for a signal that the U.S. would move forward under the agreement; the U.S. was a top proponent of a global HFC phasedown in the years leading up to the Kigali Amendment and its continued leadership couldn’t be more important. The Biden team deserves applause for moving quickly on HFCs. It’s time now to recommit, in the U.S. and around the globe, to the Kigali Amendment once again and embark as fast as we can on the transition to a world beyond HFCs.

### FW

#### The standard is maximizing expected wellbeing.

#### Prefer it:

#### 1] Actor specificity:

#### A] Aggregation – every policy benefits some and harms others, which also means side constraints freeze action.

#### B] No act-omission distinction – choosing to omit is an act itself – governments decide not to act which means being presented with the aff creates a choice between two actions, neither of which is an omission

#### C] No intent-foresight distinction – If we foresee a consequence, then it becomes part of our deliberation which makes it intrinsic to our action since we intend it to happen

o/w

#### 2] Lexical pre-requisite: threats to bodily security preclude the ability for moral actors to effectively act upon other moral theories since they are in a constant state of crisis that inhibits the ideal moral conditions which other theories presuppose

#### 3] Only consequentialism explains degrees of wrongness—if I break a promise to meet up for lunch, that is not as bad as breaking a promise to take a dying person to the hospital. Only the consequences of breaking the promise explain why the second one is much worse than the first. Intuitions outweigh—they’re the foundational basis for any argument and theories that contradict our intuitions are most likely false even if we can’t deductively determine why.

#### 4] Substitutability—only consequentialism explains necessary enablers.

**Sinnott-Armstrong 92** [Walter, professor of practical ethics. “An Argument for Consequentialism” Dartmouth College Philosophical Perspectives. 1992.]

**A moral reason to do an act is consequential if and only if the reason depends only on the consequences of either doing the act or not doing the act.** For example, a moral reason not to hit someone is that this will hurt her or him. A moral reason to turn your car to the left might be that, if you do not do so, you will run over and kill someone. A moral reason to feed a starving child is that the child will lose important mental or physical abilities if you do not feed it. All such reasons are consequential reasons. All other moral reasons are non-consequential. Thus, **a moral reason** to do an act **is non-consequential if** and only if **the reason depends even partly on some property that the act has independently of its consequences. For example, an act can be a lie regardless of what happens as a result of the lie** (since some lies are not believed), and some moral theories claim that that property of being a lie provides amoral reason not to tell a lie regardless of the consequences of this lie. Similarly, the fact that an act fulfills a promise is often seen as a moral reason to do the act, even though the act has that property of fulfilling a promise independently ofits consequences. All such moral reasons are non-consequential. In order to avoid so many negations, I will also call them 'deontological'. This distinction would not make sense if we did not restrict the notion of consequences. If I promise to mow the lawn, then one consequence of my mowing might seem to be that my promise is fulfilled. One way to avoid this problem is to specify that the consequences of an act must be distinct from the act itself. My act of fulfilling my promise and my act of mowing are not distinct, because they are done by the same bodily movements.10 Thus, my fulfilling my promise is not a consequence of my mowing. A consequence of an act need not be later in time than the act, since causation can be simultaneous, but the consequence must at least be different from the act. Even with this clarification, it is still hard to classify some moral reasons as consequential or deontological,11 but I will stick to examples that are clear. In accordance with this distinction between kinds of moral reasons, I can now distinguish different kinds of moral theories. I will say that **a moral theory is consequentialist if and only if it implies that all basic moral reasons are consequential. A moral theory is then non-consequentialist or deontological if it includes any basic moral reasons which are not consequential**. 5. Against Deontology So defined, the class of deontological moral theories is very large and diverse. This makes it hard to say anything in general about it. Nonetheless, I will argue that no deontological moral theory can explain why moral substitutability holds. My argument applies to all deontological theories because it depends only on what is common to them all, namely, the claim that some basic moral reasons are not consequential. Some deontological theories allow very many weighty moral reasons that are consequential, and these theories might be able to explain why moral substitutability holds for some of their moral reasons: the consequential ones. But even these theories cannot explain why moral substitutability holds for all moral reasons, including the non-consequential reasons that make the theory deontological. The failure of deontological moral theories to explain moral substitutability in the very cases that make them deontological is a reason to reject all deontological moral theories. I cannot discuss every deontological moral theory, so I will discuss only a few paradigm examples and show why they cannot explain moral substitutability. After this, I will argue that similar problems are bound to arise for all other deontological theories by their very nature. The simplest deontological theory is the pluralistic intuitionism of Prichard and Ross. Ross writes that, when someone promises to do something, 'This we consider obligatory in its own nature, just because it is a fulfillment of a promise, and not because of its consequences.'12 Such deontologists claim in effect that, **if I promise to mow the grass, there is a moral reason for me to mow the grass, and this moral reason is constituted by the fact that mowing the grass fulfills my promise.** This reason exists regardless of the consequences of mowing the grass, even though it might be overridden by certain bad consequences. **However**, if this is why I have a moral reason to mow the grass, then, even **if I cannot mow the grass without starting my mower, and starting the mower would enable me to mow the grass, it still would not follow that I have any moral reason to start my mower, since I did not promise to start my mower**, and starting my mower does not fulfill my promise. Thus, **a moral theory cannot explain** moral **substitutability if it claims that properties** like this **provide moral reasons.**

#### 5] Use epistemic modesty for evaluating the framework debate:

#### A] Substantively true since it maximizes the probability of achieving net most moral value—beating a framework acts as mitigation to their impacts but the strength of that mitigation is contingent.

#### B] Clash—disincentives debaters from going all in for framework which means we get the ideal balance between topic ed and phil ed—it’s important to talk about contention-level offense

#### 6)Extinction comes first!

**Pummer 15** [Theron, Junior Research Fellow in Philosophy at St. Anne's College, University of Oxford. “Moral Agreement on Saving the World” Practical Ethics, University of Oxford. May 18, 2015] AT

**There appears to be lot of disagreement in moral philosophy. Whether these many apparent disagreements are deep and irresolvable, I believe there is at least one thing it is reasonable to agree on right now**, whatever general moral view we adopt**: that it is very important to reduce the risk that all intelligent beings on this planet are eliminated by an enormous catastrophe, such as a nuclear war.** How we might in fact try to reduce such existential risks is discussed elsewhere. My claim here is only that **we – whether we’re consequentialists, deontologists, or virtue ethicists – should all agree that we should try to save the world.** According to consequentialism, we should maximize the good, where this is taken to be the goodness, from an impartial perspective, of outcomes. **Clearly one thing that makes an outcome good is that the people in it are doing well. There is little disagreement here.** If the happiness or well-being of possible future people is just as important as that of people who already exist, and if they would have good lives, it is not hard to see how **reducing existential risk is easily the most important thing in the whole world. This is for the familiar reason that there are so many people who could exist in the future – there are trillions upon trillions… upon trillions. There are so many possible future people that reducing existential risk is arguably the most important thing in the world, even if the well-being of these possible people were given only 0.001% as much weight as that of existing people.** Even on a wholly person-affecting view – according to which there’s nothing (apart from effects on existing people) to be said in favor of creating happy people – the case for reducing existential risk is very strong. As noted in this seminal paper, **this case is strengthened by the fact that there’s a good chance that many existing people will, with the aid of life-extension technology, live very long and very high quality lives. You might think what I have just argued applies to consequentialists only. There is a tendency to assume that, if an argument appeals to consequentialist considerations (the goodness of outcomes), it is irrelevant to non-consequentialists. But that is a huge mistake.** **Non-consequentialism is the view that there’s more that determines rightness than the goodness of consequences or outcomes; it is not the view that the latter don’t matter.** Even John Rawls wrote, “**All ethical doctrines worth our attention take consequences into account in judging rightness. One which did not would simply be irrational, crazy.**” **Minimally plausible versions of deontology and virtue ethics must be concerned in part with promoting the good, from an impartial point of view.** **They’d thus imply very strong reasons to reduce existential risk**, at least when this doesn’t significantly involve doing harm to others or damaging one’s character. What’s even more surprising, perhaps, is that even if our own good (or that of those near and dear to us) has much greater weight than goodness from the impartial “point of view of the universe,” indeed even if the latter is entirely morally irrelevant, we may nonetheless have very strong reasons to reduce existential risk. **Even egoism, the view that each agent should maximize her own good, might imply strong reasons to reduce existential risk.** It will depend, among other things, on what one’s own good consists in. If well-being consisted in pleasure only, it is somewhat harder to argue that egoism would imply strong reasons to reduce existential risk – perhaps we could argue that one would maximize her expected hedonic well-being by funding life extension technology or by having herself cryogenically frozen at the time of her bodily death as well as giving money to reduce existential risk (so that there is a world for her to live in!). I am not sure, however, how strong the reasons to do this would be. But views which imply that, if I don’t care about other people, I have no or very little reason to help them are not even minimally plausible views (in addition to hedonistic egoism, I here have in mind views that imply that one has no reason to perform an act unless one actually desires to do that act). **To be minimally plausible, egoism will need to be paired with a more sophisticated account of well-being.** To see this, it is enough to consider, as Plato did, the possibility of a ring of invisibility – **suppose that, while wearing it, Ayn could derive some pleasure by helping the poor, but instead could derive just a bit more by severely harming them. Hedonistic egoism would absurdly imply she should do the latter. To avoid this implication, egoists would need to build something like the meaningfulness of a life into well-being**, in some robust way, where this would to a significant extent be a function of other-regarding concerns (see chapter 12 of this classic intro to ethics). But **once these elements are included, we can (roughly, as above) argue that this sort of egoism will imply strong reasons to reduce existential risk.** Add to all of this Samuel Scheffler’s recent intriguing arguments (quick podcast version available here) that most of what makes our lives go well would be undermined if there were no future generations of intelligent persons. On his view, my life would contain vastly less well-being if (say) a year after my death the world came to an end. So obviously if Scheffler were right I’d have very strong reason to reduce existential risk. **We should also take into account moral uncertainty.** **What is it reasonable for one to do, when one is uncertain not (only) about the empirical facts, but also about the moral facts?** I’ve just argued that **there’s agreement among minimally plausible ethical views that we have strong reason to reduce existential risk – not only consequentialists, but also deontologists, virtue ethicists, and sophisticated egoists should agree.** But **even those (hedonistic egoists) who disagree should have a significant level of confidence that they are mistaken, and that one of the above views is correct. Even if they were 90% sure that their view is the correct one** (and 10% sure that one of these other ones is correct), **they would have pretty strong reason, from the standpoint of moral uncertainty, to reduce existential risk.** Perhaps most disturbingly still, **even if we are only 1% sure that the well-being of possible future people matters, it is at least arguable that, from the standpoint of moral uncertainty, reducing existential risk is the most important thing in the world.** Again, this is largely for the reason that there are so many people who could exist in the future – there are trillions upon trillions… upon trillions. (For more on this and other related issues, see this excellent dissertation). Of course, it is uncertain whether these untold trillions would, in general, have good lives. It’s possible they’ll be miserable. **It is enough for my claim that there is moral agreement in the relevant sense if**, at least given certain empirical claims about what future lives would most likely be like, **all minimally plausible moral views would converge on the conclusion that we should try to save the world.** While there are some non-crazy **views that place significantly greater moral weight on avoiding suffering than on promoting happiness**, for reasons others have offered (and for independent reasons I won’t get into here unless requested to), they nonetheless **seem to be fairly implausible views.** And **even if things did not go well for our ancestors, I am optimistic that they will overall go fantastically well for our descendants, if we allow them to. I suspect that most of us alive today – at least those of us not suffering from extreme illness or poverty – have lives that are well worth living, and that things will continue to improve.** Derek Parfit, whose work has emphasized future generations as well as agreement in ethics, described our situation clearly and accurately: “We live during the hinge of history. **Given the scientific and technological discoveries of the last two centuries, the world has never changed as fast.** We shall soon have even greater powers to transform, not only our surroundings, but ourselves and our successors. **If we act wisely in the next few centuries, humanity will survive its most dangerous and decisive period.** Our descendants could, if necessary, go elsewhere, spreading through this galaxy…. **Our descendants might, I believe, make the further future very good. But that good future may also depend in part on us. If our selfish recklessness ends human history, we would be acting very wrongly.**” (From chapter 36 of On What Matters)

## Case

### Climate

#### Rocket launches are increasing now and are close to matching other major sources of carbon emissions – means their impax are squo

**Gammon 21**[Katharine Gammon, 7-19-2021, "How the billionaire space race could be one giant leap for pollution," Katharine Gammon has served in the Peace Corps in Bulgaria, and attended MIT and Princeton University and won the 2020 Society for Environmental Journalists fellowship, 2017 Columbia University Reporting Fellowship on Early Childhood Development, 2014 National Health Journalism Fellowship, 2013 MIT Knight Science Bootcamp, the 2012 Woods Hole Ocean Science Journalism Fellowship, a 2013 National Press Foundation Fellowship, a 2011 Fellowship from the National Institute on Drug Abuse, and others.<https://www.theguardian.com/science/2021/jul/19/billionaires-space-tourism-environment-emissions>]//DebateDrills ww

When rockets launch into space, they require a huge amount of propellants to make it out of the Earth’s atmosphere. For SpaceX’s Falcon 9 rocket, it is kerosene, and for Nasa it is liquid hydrogen in their new Space Launch System. Those fuels emit a variety of substances into the atmosphere, including carbon dioxide, water, chlorine and other chemicals. The carbon emissions from rockets are small compared with the aircraft industry, she says. But **they are increasing at nearly 5.6% a year**, and Marais has been running a simulation for a decade, to figure out at what point will they compete with traditional sources we are familiar with. The rocket motor on Richard Branson’s Unity 22 burns as it heads toward space. The rocket motor on Richard Branson’s Unity 22 burns as it heads toward space. “For one long-haul plane flight it’s one to three tons of carbon dioxide [per passenger],” says Marais. **For one rocket launch 200-300 tonnes of carbon dioxide are split between 4 or so passengers**, according to Marais. “So **it doesn’t need to grow that much more to compete with other sources**.” Advertisement Right now, the number of rocket flights is very small: in the whole of 2020, for instance, there were 114 attempted orbital launches in the world, according to Nasa. That compares with the airline industry’s more than 100,000 flights each day on average. But emissions from rockets are emitted right into the upper atmosphere, which means they stay there for a long time: two to three years. Even water injected into the upper atmosphere – where it can form clouds – can have warming impacts, says Marais. “Even something as seemingly innocuous as water can have an impact.” Closer to the ground, all fuels emit huge amounts of heat, which can add ozone to the troposphere, where it acts like a greenhouse gas and retains heat. In addition to carbon dioxide, fuels like kerosene and methane also produce soot. And in the upper atmosphere, the ozone layer can be destroyed by the combination of elements from burning fuels. “While there are a number of environmental impacts resulting from the launch of space vehicles, the depletion of stratospheric ozone is the most studied and most immediately concerning,” wrote Jessica Dallas, a senior policy adviser at the New Zealand Space Agency, in an analysis of research on space launch emissions published last year.

### AT Space Junk

#### 1. Space junk in our atmosphere isn’t part of outer space, Merriam webster defines outer space as “space immediately outside the earth’s atmosphere”<https://www.merriam-webster.com/dictionary/outer%20space>

#### 2. The space junk has been put there by PUBLIC entities like governments as well as private entities, even a ban on private entities in space couldn’t solve the problem. As long as anyone is launching anything it is inevitable

**Polyakov 21**, Dr. Max Polyakov, Founder, Noosphere Ventures, Firefly Aerospace, EOS Data Analytics, 5-5-2021, "Where does space junk come from – and how do we clean it up?," World Economic Forum,<https://www.weforum.org/agenda/2021/05/why-we-need-to-clean-up-space-junk-debris-low-earth-orbit-pollution-satellite-rocket-noosphere-firefly/> Livingston RB

Where does space junk come from? **As long as humans launch objects into orbit, space debris is inevitable.** Rocket launches leave boosters, fairings, interstages, and other debris in LEO. So do rocket explosions, which currently account for seven of the top 10 debris-creating events. **Human presence also creates orbital flotsam** – such as cameras, pliers, an astronaut’s glove, a wrench, a spatula, even a tool bag lost during space walks. Some debris is created naturally from the impacts of micrometeoroids – dust-sized fragments of asteroids and comets. With limited lifetimes, **operational satellites can become space debris**. Satellites run out of maneuvering fuel, batteries wear out, solar panels degrade – causing an orbital debris feedback loop, in which the problem is exacerbated when solar panels are sandblasted by micrometeoroids and tiny debris. As with rocket debris, spent satellites eventually re-enter Earth’s atmosphere and burn up, but the process can take years – and the higher they orbit above Earth, the longer those orbits take to decay.

#### Privatization is key to sustainable rocket launches – reliance on public entities is bad because they are too limited, expensive, and undo critical strides being made right now

**Kapoor & Todi 21**[Khushi Kapoor and Keshav Todi On March 20, 2021, 3-20-2021, "The Privatisation of Space Exploration – Finance and Investment Cell, SRCC," Finance and Investment Cell Shri Ram College of Commerce is a student-driven initiative to facilitate knowledge sharing on matters of finance, geopolitics and economy, at Shri Ram College of Commerce and at the university level. The cell aims to provide a stimulus to develop financial instincts among young minds through regular workshops, events and continued collaboration with the industry, to bridge the gap between pedagogy and practice. A small step, that will hopefully yield some great dividends. [https://ficsrcc.com/the-privatisation-of-space-exploration/]//DebateDrills](https://ficsrcc.com/the-privatisation-of-space-exploration/%5D//DebateDrills) ww

**Privatisation** of space exploration has had many benefits for the space industry in the 21st century. Private companies have a greater degree of autonomy in making decisions, which **enables** them to take up **new projects** while taxpayer-funded institutions are accountable to **the Government** and hence, have to often **limit themselves**. Moreover, there is quick decision making in **private companies** while the same process in a public enterprise would have to pass through a number of stages. This advantage has allowed companies like SpaceX, Blue Origin, etc. to cut their costs substantially and perform operations like **launch**ing a rocket to ISS **at** merely **$57 million per seat** as compared to **$80 million per seat** if aboard a Russian shuttle**, and $450 million** each mission before NASA ended its space shuttle program. Moreover, **making reusable landing rocket launchers, improvements in assembly lines and other** such **operations** further ensure lower costs. Due to the well- known success of the top few **p**rivate **s**pace **c**ompanies, many new small companies such as Firefly systems and Vector launch have been able to raise substantial private capital as well. The growth in the space industry also provides employment to millions all over the world, and the rise in the number of private space companies promotes competition amongst them and encourages constant improvements and advancements. Lastly, the publicity of their operations, like live streaming launches, has sparked widespread interest in space exploration among the general public.