# 1AC v Millburn

## 1AC

#### I Affirm.

### 1AC---Debris

#### Advantage 1 is Debris –

#### Satellites are key to preventing existential nuclear retaliation.

Rogoway 15, [Tyler; November 12; Defense Journalist and Editor of Time Inc’s The War Zone; Jalopnik, “These Are The Doomsday Satellites That Detected The Explosion Of Metrojet 9268,” <https://foxtrotalpha.jalopnik.com/these-are-the-doomsday-satellites-that-detected-the-exp-1737434876>] Sachin

For over 50 years the Pentagon has had early warning satellites in orbit aimed at spotting launches of ballistic missiles, especially the big intercontinental kind that can fly around the globe in less than 30 minutes and bring about nuclear Armageddon. Recently, these satellites have made news for their “secondary capabilities,” spotting the downing of Metrojet Flight 9268 and Malaysian Airlines Flight 17. These are the shadowy satellites that are capable of such amazing feats, and an idea of how they work. In 1960, at the height of the Cold War and at the dawn of the space age, the first Missile Defense Alarm System (MiDAS) satellite was launched into low earth orbit. Six years later there was a constellation of nine of these satellites roaming the heavens, each scanning the Soviet Union for large infrared plumes, the tell-tale sign of a ballistic missile or rocket launch. These fairly crude, low-earth orbit satellites, along with the radar-based Ballistic Missile Early Warning System, would be the basis for a Cold War ballistic missile surveillance system that would become ever more complex and capable as the years went by. If ballistic missile launches were detected and deemed a threat, the decision to retaliate would mean the National Command Authority making the call to do so within half an hour, an act that could bring an the end of humanity’s reign on Earth, permanently. The first really reliable and full coverage space-based ballistic missile early warning capability came with the launch of the first Defense Support Program (DSP) satellite in 1970. These new satellites were much more capable than their MiDAS predecessors. Early DSP satellite design was relatively straight forward, with the satellites’ spinning around their center axis while in geosynchronous orbit. This allows their telescopic infrared sensor to continuously sweep an area of the planet in a relatively brief amount of time, around six times in one minute. If something were detected, the information would immediately be data-linked to controllers on the ground at the 460th Space Wing located at Buckley AFB in in Colorado. A total of 23 of these satellites have been launched over the program’s life, with constant upgrades made along the way. A DSP satellite was launched by the Space Shuttle on STS-44 in 1991, and the last one was launched by a Delta IV Heavy in 2007. Most famously, the Defense Support Program constellation of satellites were used to detect launches of SCUD missiles during Operation Desert Storm.

#### Space privatization fails---shoddy legal framework means it’s impossible to hold actors accountable in time of disagreement or accidents---increases space debris because of the lack of regulation.

Oduntan 16 — Gbenga Oduntan, 9-12-2016, "SpaceX explosion shows why we must slow down private space exploration until we rewrite law," Conversation, <https://theconversation.com/spacex-explosion-shows-why-we-must-slow-down-private-space-exploration-until-we-rewrite-law-65019>, [accessed: 4/4/19]

The recent explosion of a SpaceX Falcon 9 rocket during a test on a launchpad at Cape Canaveral may have opened a Pandora’s box of legal problems previously only discussed with hushed voices in space law circles. While there is an international space law that sets out a general framework for the conduct of all space activities – including those by private firms – most of it was developed decades ago, before the rise of commercial space exploration. It is in fact not entirely clear how much regulation of space activities by private companies currently exists – particularly in relation to the liability for accidents. The ultimate blame for the Falcon 9 crash will only emerge after full investigations are complete. But if the fault does lie with SpaceX, there are reputational consequences and insurance costs for future launches for the company will likely shoot up. Government space programmes like NASA and the European Space Agency are certainly not immune from catastrophic accidents. If NASA was a car driver, its licence likely would have been revoked on account of the number of tragic explosions. In five of the worst NASA accidents since 1967, 17 brave astronauts have lost their lives and several experimental rockets, space vehicles, satellites and space shuttles have been lost. But the sharp increase in private space exploration makes it important to reconsider how the legal landscape has changed. When space accidents do happen, the rules that govern them are contained in a confusing patchwork of agreements and treaties. If an accident occurs on Earth, the liability will depend on national rules, such as the general principle of international law that holds corporate companies responsible for damages. But the Outer Space Treaty (1962) says that a state launching a probe or satellite shall be absolutely liable to pay compensation for damage – even when an accident happens on the surface of the Earth. It can, however, be unclear whether the accident happened in airspace, meaning national aviation laws can apply, or in fact in outer space. Thus, it is becoming increasingly important to determine the exact boundary between airspace and outer space territory. This is important to work out as lawyers will always try to exploit unclear frontiers. Even in cases where it is clear that space law applies to an accident involving a private company, liability is still a tricky issue. According to space law, the state where the launch takes place and which registered the space object is ultimately responsible. But a private company can be registered in a different state to the launch country, creating a lot of confusion. A solution could be to say that the state registering a certain space probe should be liable. This state would then be free to compel the company to pay damages.

A rise in serious accidents?

It is only a matter of time time before we see more than just launch explosions. The risk of serious space accidents will increase as the number of space objects in orbit extends into thousands. The advent of private activities will also exacerbate the problem of space debris, perhaps as private commercial use of the seas has polluted international maritime spaces. The collision of the satellites Iridium 33 and Kosmos 2251 over Siberia in 2009 is a clear example of what may become a common occurrence. Then there are the 100 to 150 tonnes of man-made space objects that re-enter Earth’s atmosphere annually. Lots of these simply burn up, but some do manage to cause damage to private property. Again, it’s only a matter of time before the first human life or limb is lost to this kind of incident. Launches of rockets and payloads are fraught with danger and quite frequently go wrong. But launch accidents appear to affect different countries in different ways. The costs involved in engaging in space station activities are mind boggling and crippling to struggling economies. Increasingly, developing states rely on commercial launchers. But if a private company launches an object that subsequently causes damage in space, the poor state will be liable. And even in those cases where the launch fails due to misfortune or the mistakes of the private launcher, such companies could still escape paying for the launch accident, as such firms often have water-tight exclusion clauses that protect them from liabilities. The bill again goes to the poor state. This is especially likely when it is a Western company working for a developing country. China on the other hand agreed to pay for a lost satellite it had launched for Nigeria. It is therefore essential that any developing state protects itself to the fullest against unsuccessful operations caused by negligent and/or accidental failures. There are also serious issues around the safety of astronauts, who have the legal right to a safe existence when in outer space. But it is unclear whether this law does – or should – extend to private astronauts. Also, a launching state currently must be notified regarding incidents involving astronauts on international missions – and it is required to assist and contribute substantially to search and rescue operations. Can a private company really supply the enormous sums or other resources that may be needed? Will the home state of the private company be willing to pay? Again, the law isn’t clear. With the increase in private participation in space experimentation and perhaps even mineral mining, the provisions governing civil liability over mishaps arising from the operations of a space station are likely to become one of the most contested areas of space law. What if a module or component part fails to function on a space station? In the absence of multilateral rules on this point, a patchwork of legal rules is gradually maintained through MOUs (Memorandum of Understanding) and other national laws such as the US Commercial Space Launchings Act (CSLA) of 1978. How will private companies fit into these as they possibly become partners? Liberalism and the private entrepreneurial spirit do have their place in outer space. But there must be carefully designed limits. The treaties and legal regime of space law has not been adequately amended to account for the rise of private space exploration. For humanity’s sake, private space exploration may have to proceed more slowly until these important issues are sorted.

#### Each new launch increases debris and the risk of collision

Haynes 18, [Korey Haynes (staff) 12/17/2018 (“Despite concerns, space junk continues to clutter Earth orbit” online @ <http://www.astronomy.com/news/2018/12/despite-concerns-space-junk-continues-to-clutter-earth-orbit>)] Durham SA

Even when Sputnik launched in 1957, it wasn’t alone. The shiny ball was accompanied by its core stage and payload fairing, both of which tumbled around Earth in nearby orbits. Much of the hardware we launch is similarly partnered, meaning each launch can be responsible for multiple pieces of orbital debris. Much of this “debris” is, of course, composed of hard-working satellites performing valuable jobs. But the majority is derelict, either drifting past its useful lifetime or genuine trash like the spent rocket stages. And “drifting” is a relative term here: Some objects in orbit are moving at up to 17,000 miles per hour. As human technology needs have become greater, we’ve also become more reliant on growing numbers of satellites. Newly proposed “constellations” of dozens or even thousands of satellites could greatly expand the number of artificial companions in orbit around us —communications networks more or less require them in order to deliver global coverage. The well-established Iridium satellite phone network uses 66 satellites (plus a few spares if something goes wrong — more on that below). SpaceX recently received FCC approval to launch roughly 12,000 satellites for their planned space-based internet. Many of the new generation of satellites could by tiny, but numerous. CubeSats are tiny satellites much touted as gateways for even small research groups or companies to gain access to space science, thanks to the low cost of launch and development. But that very ease of access means they’re flooding the skies in greater numbers every year. The more cluttered space becomes, the greater risk there is for a collision. And this is no hypothetical. In fact, a large fraction of the debris we know about in space is the result of just two past collisions. The first, in 2007, was China’s intentional “destruction” of a weather satellite as a test of their ability to destroy objects in space. The problem is that while they very successfully demolished the satellite (one China also owned, by the way), what they also did was turn it from one orbiting object into a few thousand, many of which are still circling us today. These drifting bits of debris are a lot harder to track than one derelict weather satellite. This alone angered other space agencies, not to even mention the thorny issue of militarizing space.

### 1AC---Multilat

#### Advantage 2 is Multilateralism –

#### Cooperation is declining now---clarifying national policy solves---key to stop space arms racing, solve climate change and natural disasters.

--- We emphasized all the important internal links and things.

Wemer 18 [(David A. Wemer is the Director & Managing Editor of the Fellowship Program at Young Professionals in Foreign Policy (YPFP). He formerly served as an Assistant Managing Editor, and the 2016 Europe Fellow, of the Fellowship Program. “Can International Cooperation in Space Survive Geopolitical Competition on Earth?” 11/20/18. <https://www.atlanticcouncil.org/blogs/new-atlanticist/can-international-cooperation-in-space-survive-geopolitical-competition-on-earth>)] Sachin

One hundred and eighteen seconds after launching from southern Kazakhstan, Nick Hague found himself plunging toward Earth instead of heading for the stars. On October 11, the NASA astronaut was jettisoned from his shuttle, along with his Russian crewmate Aleksey Ovchinin, after one of the side boosters on their Soyuz rocket crashed into their second-stage boosters, rather than detaching from the system. Both astronauts safely returned to Earth, a welcome relief given the tragically long list of launch accidents. Hague and Ovchinin’s mission was already something of an anomaly in 2018. At a time when Russia and the United States spend most of their time preparing for conflict, space remains one of the few areas where both countries cooperate extensively. The two astronauts were headed to the International Space Station (ISS), an experiment in international cooperation launched twenty years ago on November 20, 1998, which has housed astronauts from more than ten countries. Ever since the end of the NASA Space Shuttle program in 2011, US astronauts have relied on Russian Soyuz rockets to get them to the ISS, a startling dependence given the tension between both countries. NASA never envisioned this arrangement to be anything more than temporary as it hopes to send future US astronauts on US private launch systems as soon as sometime next year. The problem with the October 11 launch came just a month after astronauts on the ISS had to plug a small hole in a Soyuz return vehicle docked at the station with “rags and other trash.” Signaling growing discord in the relationship, Dmitry Rogozin, the head of Roscosmos, the state corporation responsible for Russia’s space flight and cosmonautics program, shifted blame for the incident from potential assembly flaws on the Russian-made Soyuz craft to outrageous claims of sabotage by an ISS crewmember (Roscosmos and NASA now stress that no ISS crewmembers are being charged with any wrongdoing). NASA Administrator Jim Bridenstine has been quick to dismiss suggestions that NASA has doubts about Roscosmos’ capabilities, but US-Russian space relations, once the bedrock of international space cooperation, have clearly hit bumps in the road. The problems with the Russian Soyuz launcher come at a time when international cooperation on the final frontier appears to be in retreat. Space has been a cornerstone of US-Russian cooperation since the last days of the Cold War, but it may not be able to weather continued tension between Moscow and Washington, especially as NASA grows wary of Russian technical competence. The United States has also shown the cold shoulder to the new kid in town: China. Since the mid-1990s, NASA has been required to seek congressional approval before undertaking any cooperation or contact with Chinese government officials. This rule has effectively limited NASA’s contact with the fastest-growing space power to discussions on civilian aerospace and earth science. While NASA continues to push for greater contact, the Trump administration’s growing displeasure with Beijing—along with very real concerns about intellectual property theft—makes it unlikely that Washington will warm to the idea of extensive cooperation with Beijing in space anytime soon. At the same time, space has dramatically shifted from a domain for science and exploration to a vitally important theater for economic and military expansion. Satellite orbits are now vital economic resources for countries around the world and US President Donald J. Trump’s stated desire for a new “Space Force” reflects a very real understanding amongst militaries that the final frontier is as much of a potential conflict zone as air, sea, or land. With an endorsement from the National Space Council, a new space-focused military branch looks imminent for the United States, which could further push Washington away from cooperating with other space partners, especially potential adversaries China and Russia. International cooperation has been the cornerstone of US forays into space since the early days of the Cold War. President Dwight D. Eisenhower specifically created NASA as a civilian agency in order to prevent the domination of space activities by the US military. NASA has nearly eight hundred active international agreements, which are vital for powering research in physics, chemistry, medicine, biology, and environmental science. This cooperation will be vital in addressing both space specific problems, such as increasing satellite traffic and dangerous orbital debris, but also in addressing close-to-home threats like climate change and natural disasters. Despite incredible leaps in technology, humanity’s desire to explore and utilize space still requires vast amounts of wealth and expertise, making the pooling of resources with international partners vital to achieving missions. Certainly, NASA will continue its vast cooperation with its natural partners such as Europe, Canada, and Japan. Indeed on November 16, NASA celebrated the arrival of a European-built service module, which will power NASA’s Orion spacecraft in development for possible human exploration of Mars. But the promise of the International Space Station, and indeed much of the cooperation in space, was the ideal that geopolitical competition could be forgotten beyond Earth’s atmosphere. For now, this international cooperation remains in place, as at this moment a German, an American, and a Russian are living 250 miles above the Earth, entirely dependent on each other and cooperation between their governments for their survival. As space becomes more and more intertwined with the global economy and geopolitical competition, humanity risks abandoning the spirit of cooperation and extending the conflicts of the Earth to the stars.

#### Space arms races are bad---harms economy, satellites and infrastructure---risks war.

Graff 18, [Garrett, Garrett M. Graff is an American journalist and author. He is a former editor of Politico Magazine, editor-in-chief of Washingtonian magazine in Washington, D.C., and instructor at Georgetown University in the Masters in Professional Studies Journalism and Public Relations program. “THE NEW ARMS RACE THREATENING TO EXPLODE IN SPACE,” <https://www.wired.com/story/new-arms-race-threatening-to-explode-in-space/>] Recut DurSac from BJR

In the decade since China’s first successful anti-satellite missile test, Shelton’s premonition has largely come true: Everything has changed in space. A secretive, pitched arms race has opened up between the US, China, Russia, and, to a lesser extent, North Korea. The object of the race: to devise more and better ways to quickly cripple your adversary’s satellites. After decades of uncontested US supremacy, multinational cooperation, and a diplomatic consensus on reserving space for peaceful uses, military officials have begun referring to Earth’s orbit as a new “warfighting domain.” On the ground, the military is starting to retrain pilots, ship captains, and ground troops in fail-safe forms of navigation that don’t rely on GPS—like celestial navigation. The US military must relearn how to fight “unwired” and defend itself in space. “We knew how to do that, and somehow we forgot,” General John E. Hyten, the head of US Strategic Command, said in 2015. When former director of national intelligence James Clapper left office at the end of the Obama administration, he told me that the increasing sophistication of America’s adversaries in space was one of the top three strategic threats he worried about. Clapper’s successor, Dan Coats, warned last spring that “Russia and China remain committed to developing capabilities to challenge perceived adversaries in space, especially the United States.” Since he took office, President Trump has dropped numerous hints of the warnings he’s evidently getting from military and intelligence leaders. During a spring livestream with astronauts aboard the International Space Station, he alluded, obliquely and without context, to the “tremendous military applications in space.” And he has repeatedly floated the idea of creating a new branch of the armed forces specifically for celestial combat—culminating last week with a speech out-and-out ordering the Joint Chiefs of Staff to begin developing plans for a new “Space Force.” But if space is indeed becoming a war-­fighting domain, it’s important to understand the stakes, not just for America’s strategic standing but for the species. A Russo-Sino-American space war could very well end with a crippled global economy, inoperable infrastructure, and a planet shrouded by the orbiting fragments of pulverized satellites—which, by the way, could hinder us all on Earth until we figured out a way of cleaning them up. In the aftermath of such a conflict, it might be years before we could restore new constellations of satellites to orbit. Preparing for orbital war has fast become a priority of the US military, but the more urgent priority is figuring out how to prevent it.

#### Warming leads to extinction---it’s a conflict-multiplier and defense doesn’t assume non-linearity

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In summary, six of the nine proposed planetary boundaries (phosphorous, nitrogen, biodiversity, land use, atmospheric aerosol loading, and chemical pollution) are unlikely to be associated with existential risks. They all correspond to a degraded environment, but in our assessment do not represent existential risks. However, the three remaining boundaries (climate change, global freshwater cycle, and ocean acidification) do pose existential risks. This is because of intrinsic positive feedback loops, substantial lag times between system change and experiencing the consequences of that change, and the fact these different boundaries interact with one another in ways that yield surprises. In addition, climate, freshwater, and ocean acidification are all directly connected to the provision of food and water, and shortages of food and water can create conflict and social unrest.

Climate change has a long history of disrupting civilizations and sometimes precipitating the collapse of cultures or mass emigrations (McMichael, 2017). For example, the 12th century drought in the North American Southwest is held responsible for the collapse of the Anasazi pueblo culture. More recently, the infamous potato famine of 1846–1849 and the large migration of Irish to the U.S. can be traced to a combination of factors, one of which was climate. Specifically, 1846 was an unusually warm and moist year in Ireland, providing the climatic conditions favorable to the fungus that caused the potato blight. As is so often the case, poor government had a role as well—as the British government forbade the import of grains from outside Britain (imports that could have helped to redress the ravaged potato yields).

Climate change intersects with freshwater resources because it is expected to exacerbate drought and water scarcity, as well as flooding. Climate change can even impair water quality because it is associated with heavy rains that overwhelm sewage treatment facilities, or because it results in higher concentrations of pollutants in groundwater as a result of enhanced evaporation and reduced groundwater recharge. Ample clean water is not a luxury—it is essential for human survival. Consequently, cities, regions and nations that lack clean freshwater are vulnerable to social disruption and disease.

Finally, ocean acidification is linked to climate change b2ecause it is driven by CO2 emissions just as global warming is. With close to 20% of the world’s protein coming from oceans (FAO, 2016), the potential for severe impacts due to acidification is obvious. Less obvious, but perhaps more insidious, is the interaction between climate change and the loss of oyster and coral reefs due to acidification. Acidification is known to interfere with oyster reef building and coral reefs. Climate change also increases storm frequency and severity. Coral reefs and oyster reefs provide protection from storm surge because they reduce wave energy (Spalding et al., 2014). If these reefs are lost due to acidification at the same time as storms become more severe and sea level rises, coastal communities will be exposed to unprecedented storm surge—and may be ravaged by recurrent storms.

A key feature of the risk associated with climate change is that mean annual temperature and mean annual rainfall are not the variables of interest. Rather it is extreme episodic events that place nations and entire regions of the world at risk. These extreme events are by definition “rare” (once every hundred years), and changes in their likelihood are challenging to detect because of their rarity, but are exactly the manifestations of climate change that we must get better at anticipating (Diffenbaugh et al., 2017). Society will have a hard time responding to shorter intervals between rare extreme events because in the lifespan of an individual human, a person might experience as few as two or three extreme events. How likely is it that you would notice a change in the interval between events that are separated by decades, especially given that the interval is not regular but varies stochastically? A concrete example of this dilemma can be found in the past and expected future changes in storm-related flooding of New York City. The highly disruptive flooding of New York City associated with Hurricane Sandy represented a flood height that occurred once every 500 years in the 18th century, and that occurs now once every 25 years, but is expected to occur once every 5 years by 2050 (Garner et al., 2017). This change in frequency of extreme floods has profound implications for the measures New York City should take to protect its infrastructure and its population, yet because of the stochastic nature of such events, this shift in flood frequency is an elevated risk that will go unnoticed by most people.

4. The combination of positive feedback loops and societal inertia is fertile ground for global environmental catastrophes

Humans are remarkably ingenious, and have adapted to crises throughout their history. Our doom has been repeatedly predicted, only to be averted by innovation (Ridley, 2011). However, the many stories of human ingenuity successfully addressing existential risks such as global famine or extreme air pollution represent environmental challenges that are largely linear, have immediate consequences, and operate without positive feedbacks. For example, the fact that food is in short supply does not increase the rate at which humans consume food—thereby increasing the shortage. Similarly, massive air pollution episodes such as the London fog of 1952 that killed 12,000 people did not make future air pollution events more likely. In fact it was just the opposite—the London fog sent such a clear message that Britain quickly enacted pollution control measures (Stradling, 2016). Food shortages, air pollution, water pollution, etc. send immediate signals to society of harm, which then trigger a negative feedback of society seeking to reduce the harm.

In contrast, today’s great environmental crisis of climate change may cause some harm but there are generally long time delays between rising CO2 concentrations and damage to humans. The consequence of these delays are an absence of urgency; thus although 70% of Americans believe global warming is happening, only 40% think it will harm them (http://climatecommunication.yale.edu/visualizations-data/ycom-us-2016/). Secondly, unlike past environmental challenges, the Earth’s climate system is rife with positive feedback loops. In particular, as CO2 increases and the climate warms, that very warming can cause more CO2 release which further increases global warming, and then more CO2, and so on. Table 2 summarizes the best documented positive feedback loops for the Earth’s climate system. These feedbacks can be neatly categorized into carbon cycle, biogeochemical, biogeophysical, cloud, ice-albedo, and water vapor feedbacks. As important as it is to understand these feedbacks individually, it is even more essential to study the interactive nature of these feedbacks. Modeling studies show that when interactions among feedback loops are included, uncertainty increases dramatically and there is a heightened potential for perturbations to be magnified (e.g., Cox, Betts, Jones, Spall, & Totterdell, 2000; Hajima, Tachiiri, Ito, & Kawamiya, 2014; Knutti & Rugenstein, 2015; Rosenfeld, Sherwood, Wood, & Donner, 2014). This produces a wide range of future scenarios.

Positive feedbacks in the carbon cycle involves the enhancement of future carbon contributions to the atmosphere due to some initial increase in atmospheric CO2. This happens because as CO2 accumulates, it reduces the efficiency in which oceans and terrestrial ecosystems sequester carbon, which in return feeds back to exacerbate climate change (Friedlingstein et al., 2001). Warming can also increase the rate at which organic matter decays and carbon is released into the atmosphere, thereby causing more warming (Melillo et al., 2017). Increases in food shortages and lack of water is also of major concern when biogeophysical feedback mechanisms perpetuate drought conditions. The underlying mechanism here is that losses in vegetation increases the surface albedo, which suppresses rainfall, and thus enhances future vegetation loss and more suppression of rainfall—thereby initiating or prolonging a drought (Chamey, Stone, & Quirk, 1975). To top it off, overgrazing depletes the soil, leading to augmented vegetation loss (Anderies, Janssen, & Walker, 2002).

Climate change often also increases the risk of forest fires, as a result of higher temperatures and persistent drought conditions. The expectation is that forest fires will become more frequent and severe with climate warming and drought (Scholze, Knorr, Arnell, & Prentice, 2006), a trend for which we have already seen evidence (Allen et al., 2010). Tragically, the increased severity and risk of Southern California wildfires recently predicted by climate scientists (Jin et al., 2015), was realized in December 2017, with the largest fire in the history of California (the “Thomas fire” that burned 282,000 acres, https://www.vox.com/2017/12/27/16822180/thomas-fire-california-largest-wildfire). This catastrophic fire embodies the sorts of positive feedbacks and interacting factors that could catch humanity off-guard and produce a true apocalyptic event. Record-breaking rains produced an extraordinary flush of new vegetation, that then dried out as record heat waves and dry conditions took hold, coupled with stronger than normal winds, and ignition. Of course the record-fire released CO2 into the atmosphere, thereby contributing to future warming.

Out of all types of feedbacks, water vapor and the ice-albedo feedbacks are the most clearly understood mechanisms. Losses in reflective snow and ice cover drive up surface temperatures, leading to even more melting of snow and ice cover—this is known as the ice-albedo feedback (Curry, Schramm, & Ebert, 1995). As snow and ice continue to melt at a more rapid pace, millions of people may be displaced by flooding risks as a consequence of sea level rise near coastal communities (Biermann & Boas, 2010; Myers, 2002; Nicholls et al., 2011). The water vapor feedback operates when warmer atmospheric conditions strengthen the saturation vapor pressure, which creates a warming effect given water vapor’s strong greenhouse gas properties (Manabe & Wetherald, 1967).

Global warming tends to increase cloud formation because warmer temperatures lead to more evaporation of water into the atmosphere, and warmer temperature also allows the atmosphere to hold more water. The key question is whether this increase in clouds associated with global warming will result in a positive feedback loop (more warming) or a negative feedback loop (less warming). For decades, scientists have sought to answer this question and understand the net role clouds play in future climate projections (Schneider et al., 2017). Clouds are complex because they both have a cooling (reflecting incoming solar radiation) and warming (absorbing incoming solar radiation) effect (Lashof, DeAngelo, Saleska, & Harte, 1997). The type of cloud, altitude, and optical properties combine to determine how these countervailing effects balance out. Although still under debate, it appears that in most circumstances the cloud feedback is likely positive (Boucher et al., 2013). For example, models and observations show that increasing greenhouse gas concentrations reduces the low-level cloud fraction in the Northeast Pacific at decadal time scales. This then has a positive feedback effect and enhances climate warming since less solar radiation is reflected by the atmosphere (Clement, Burgman, & Norris, 2009).

The key lesson from the long list of potentially positive feedbacks and their interactions is that runaway climate change, and runaway perturbations have to be taken as a serious possibility. Table 2 is just a snapshot of the type of feedbacks that have been identified (see Supplementary material for a more thorough explanation of positive feedback loops). However, this list is not exhaustive and the possibility of undiscovered positive feedbacks portends even greater existential risks. The many environmental crises humankind has previously averted (famine, ozone depletion, London fog, water pollution, etc.) were averted because of political will based on solid scientific understanding. We cannot count on complete scientific understanding when it comes to positive feedback loops and climate change.

#### US leadership in international collaboration is key to R&D---clear policy on the private sector is key

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The US was the catalyst for the adoption of a plethora of international treaties and rules after World War II, yet there is a perception that it may ignore its commitment to this legal regime when not convenient. The actions of the US are at times guided by the belief that one can drop the rules when it is better for the greater good, or when the rules do not serve the greater good. For example, even though the US was instrumental in establishing the International Criminal Court, in 2002 it withdrew from the UN agreement that created it and began a diplomatic effort to make the U.S. military immune from its writ. Covertly, the US is active in several countries relying on space navigation and a vast array of reconnaissance satellites, which can see into other countries from outer space, to assist its activities on Earth. Cold War fears led the U.S. Air Force to develop the MOL program between 1963 and 1969. This program included reconnaissance activities, such as the development of a system that would take photographs of USSR territory from space. Though that program was never completed, an unverified press report claims that the US is planning a triple-canopy space shield that will stretch from the stratosphere to the exosphere and will be patrolled by drones (Global Hawk and X-37B drones) with missiles. If true, the dual-use nature of this technology may eventually raise issues for international law; it can also add further impediments to current efforts to develop legal regimes against weaponization in space. INTERNATIONAL COOPERATION AND SPACE POLICY American leadership in space is compatible, of course, with cooperation, although U.S. strategic culture will necessarily limit its extent. One of the most obvious instances of U.S. international cooperation for peaceful space purposes is demonstrated by the ISS. Aboard the ISS, 15 countries cooperate, sharing “international flight crews, multiple launch vehicles, globally distributed launch, operations, training, engineering, and development facilities; communications networks, and the international scientific research community.” Such collaboration is important and may outweigh the strategic cultures of many nations, including the US and its inclination for unilateral action. Ultimately, cooperating in space allows several countries to work together to expand technological and scientific knowledge in a borderless arena and consequently transcend political strains. Nevertheless, the US voted against China becoming a partner on the ISS, citing national security concerns, showing that competition and mistrust cannot be overcome entirely for the sake of scientific progress, and U.S. national interests can overrule cooperation. THE WAY FORWARD Several issues will require more engagement from the US to help maintain peace on Earth, including seriously engaging in discussions of prevention of an arms race in outer space. Currently, the US is among the few countries to vote against the Proposed Prevention of an Arms Race in Outer Space Resolution (PAROS). Additionally, the US occasionally feeds uncertainty with actions that leave other players puzzled, such as the secret missions of X-37B, a military plane that can be tracked from the ground but whose precise orbit is undisclosed, as is its mission’s purpose. Such actions, combined with the reluctance to join PAROS, and the larger context of U.S. space policy, amplify the concerns of other countries. It is important to recall that in 2006, the U.S. National Space Policy under the Bush Administration clearly reaffirmed that: “The United States will oppose the development of new legal regimes or other restrictions that seek to prohibit or limit U.S. access to or use of space. Proposed arms control agreements or restrictions must not impair the rights of the United States to conduct research, development, testing and operations or other activities in space for the US national interests.” In 2010, the U.S. National Space Policy under President Obama stated that the US would: “Pursue bilateral and multilateral transparency and confidence-building measures to encourage responsible actions in, and the peaceful use of, space. The United States will consider proposals and concepts for arms control measures if they are equitable, effectively verifiable, and enhance the national security of the United States and its allies.” The language in the latter document suggests a departure from the earlier approach; however, it should not imply the US is ready to compromise its interests in space for treaties that do not meet its criteria of acceptability. In December 2017, President Trump amended the Obama Administration’s space policy with a Memorandum on U.S. human space exploration. The most important change is expressed in a 63-word text that sets the objective for the US to lead “…the return of humans to the Moon for long-term exploration and utilization, followed by human missions to Mars and other destinations.” On the topic of international law and cooperation, the position of the Trump administration remains to be clarified. That said, other persistent tenants of U.S. strategic culture, such as casualty aversion, the pursuit of freedom and progress, and the use of outer space for “peaceful purposes” remain guiding principles of U.S. space policy, across administrations. The challenge for the coming decades will be to skillfully balance the U.S. claim to leadership in space with openness for collaboration on an arms control treaty. It is crucial for the US to join current initiatives to prohibit the weaponization of space because rule-based regimes can create predictability, cooperation, and sustainability of outer-space activities. Geopolitical doctrines of deterrence alone cannot guarantee peace in outer space indefinitely. The US should equally change its posture with regard to the Russian-China PPWT proposal because it is a step toward a rule-based regime, and not dismiss it as “inherently flawed.” In the past, the United States signed, ratified – and at times, co-initiated – treaties (including the Outer Space Treaty), which were treaties of principle. With the PPWT, its claims for rejection reside with the lack of verification mechanisms but this was not an issue it raised as it signed the Outer Space Treaty. The refusal to start negotiations is a roadblock for future efforts. There are pertinent criticisms related to the PPWT, such as its unclear definitions of “use of force” or “outer space object,” or the lack of meaningful discussion of space debris issues, or the issue of ground-based assets. However, this could be an opportune moment to start discussions of a multilateral treaty. The US has historically pooled resources and mobilized other nations around efforts for international peace and security. A century ago, it played a critical part in creating the League of Nations, and later the United Nations. The cooperative ethos in U.S. strategic culture, however, does not preclude ambitious leadership, nor does it mean placing others’ interests before the interests of the United States. Eventually, this may push the US to negotiate a future weaponization treaty in a way that fits its national security priorities; whichever path it takes, it will be important to recognize that such a treaty would ultimately be in the interest of its national security. Finally, and consistent with U.S. strategic culture, the determination to maintain leadership in outer space is also tied to leadership in innovation and competitiveness. In terms of current U.S. space ambitions, as mentioned above, President Trump and his advisors have demonstrated support for deep space exploration, such as the Mars mission, alongside a “rapid and affordable” return to the moon. This objective is, in the opinion of some commentators, a return to Bush’s policy which had also focused on a return to Moon, although the objective appears for now inconsistent with the amount of funding allotted to NASA, which saw its budget slightly cut. However, early indications suggest that the current U.S. administration is seeking to monetize space, and encourage more partnerships with the private sector. The new administration appears to be advocating the development of privately operated space stations and the “large-scale economic development of space,” similar to policies advanced under the previous U.S. administration of President Obama. In 2010, President Obama announced his support for more reliance on private companies to launch astronauts, a decision then met with significant resistance. Although it remains unclear precisely what role U.S. strategic culture will play in shaping future space policy, it is likely that a sense of U.S. exceptionalism and the use of space to protect U.S. interests in vital circumstances will remain. The current behavior of the United States, insisting on issues such as one-hundred percent verifiable treaties is a manifestation of America’s inherent need to eliminate vulnerability, as well as a strong desire to set the rules of the game. The question for global security is whether this exceptionalism will be perceived benignly by the rising space nations, potentially setting the stage for additional tension.

### 1AC---Advocacy

#### Thus, the Plan – Resolved: The United States ought to rule that private companies violate its non-appropriation obligations under the Outer Space Treaty and its succeeding treaties.

#### Unjust means unlawful.

Waters 98, [H. FRANKLIN WATERS, Senior District Judge. Colonia Ins. Co. v. City Nat. Bank, 13 F. Supp. 2d 891 - Dist. Court, WD Arkansas 1998, https://law.justia.com/cases/federal/district-courts/FSupp2/13/891/2311881/] Sachin

Arkansas law is clear on the issue that in the realm of unjust enrichment, the word "unjust" means "unlawful." "One is not unjustly enriched by receipt of that to which he is legally entitled. \* \* \* No recovery of money received can be based upon unjust enrichment when the recipient can show a legal or equitable ground for keeping it." Halvorson v. Trout, 258 Ark. 397, 403, 527 S.W.2d 573, 577 (1975) (quoting Whitley v. Irwin, 250 Ark. 543, 550-51, 465 S.W.2d 906, 910-11 (1971)). See also, Jackson County Grain Drying Coop. v. Newport Wholesale Electric, Inc., 9 Ark.App. 41, 46, 652 S.W.2d 638, 640 (1983) (no one shall be allowed to unjustly enrich himself at the expense of another; the word "unjustly" means "unlawfully").

#### Prefer---our model allows for educational debates about real world policy---core of the topic---the lit is about various legal policies on appropriation.

### 1AC---Solvency

#### The AC results in increased prohibitions of launches in outer space by private companies.

Cooper 8 [Cooper, Nikhil D. "Circumventing Non-Appropriation: Law and Development of United States Space Commerce." Hastings Const. LQ 36 (2008): 457., https://repository.uchastings.edu/hastings\_constitutional\_law\_quaterly/vol36/iss3/3/] Recut DurSac from TDI

IIl. A Legal System? The CSLA represents the most recent and comprehensive United States space commerce legislation; but, in the years since its passage, no one has seriously questioned its consistency with United States international obligations of "non-appropriation." The issue is especially apt now, however, because the current and future capacities of commercially exploiting space seem primed to challenge non-appropriation as the guiding theme in space commerce. Therefore, the question we must ask now is whether or not the United States is circumventing the intent of non-appropriation by encouraging and protecting private commercial expansion into space. A. Treaties Versus Congressional Acts Whether the regulatory regime outlined in the CSLA conflicts with the national non-appropriation principle, as outlined in the Outer Space Treaty of 1967 and in its succeeding treaties, is an issue that could be reviewed by the federal judiciary under its constitutional grant of subject-matter jurisdiction over cases "arising under" treaties.8 4 The judiciary's power to interpret treaties is a power distinct from the treaty-making authority delegated to the executive and legislative branches. Article II of the United States Constitution authorizes the president to ratify treaties with the consent of two-thirds membership of the Senate. 5 Treaties entered into in this manner are the supreme law of the United States and bind state constitutions, legislatures, and judiciaries.8 6 Generally, courts employ distinct methods of interpretation when called on to perform the separate but related tasks of interpreting treaties and resolving treaty-statutory disputes. As to the former, courts generally will liberally construct a treaty "to give effect to the purpose which animates it" and will prefer that liberal construction "[e]ven where a provision of a treaty fairly admits of two constructions, one restricting, the other enlarging [of] rights which may be claimed under it."87 A preference for broad construction, however, is not a license for courts to impose any interpretation they deem appropriate. For example, although courts have a greater ability to construct treaties more broadly than private contracts, they are still precluded from interpreting a treaty beyond the "apparent intent and purport" of its language.88 in this way, determining a treaty's "intent" delineates the boundaries of how broadly or narrowly the court may interpret a treaty's provision. Courts obviously have a much easier time determining a treaty's intent where the treaty language is unambiguous. In these instances, courts expressly forbid looking beyond the language of the treaty to supply the intent of the parties at the time the treaty was drawn.89 When the language of the treaty is ambiguous, however, the court will attempt to effectuate the drafter's intent through a broader inquiry into "the letter and spirit of the instrument," and may take into account "considerations deducible from the situation of the parties; and the reasonableness, justice, and nature of the thing, for which provision has been made." 90 The United States Supreme Court summarized its interpretive process in the case Eastern Airlines Inc., v. Floyd: When interpreting a treaty, [begin] "with the text of the treaty and the context in which the written words are used." 91 [When confronted with difficult or ambiguous passages, the Court provided that] [o]ther general rules of construction may be brought to bear[.] [And it finally noted that] treaties are construed more liberally than private agreements, and to ascertain their meaning we may look beyond the written words to the history of the treaty, the negotiations, and the practical construction adopted by the parties. 92 Treaty interpretation as described above is important when determining whether the treaty conflicts with an act of Congress. Each being the supreme law of the land, treaties and congressional acts are governed by the last-in-time rule: when they conflict, courts must privilege the last enacted treaty or congressional act over the other. 93 Still, federal courts often avoid finding such conflicts between congressional acts and treaty obligations. As Justice Marshall opined in 1804: [A]n act of Congress ought never to be construed to violate the law of nations if any other possible construction remains, and consequently can never be construed to violate neutral rights, or to affect neutral commerce, further than is warranted by the law of nations as understood in this country. 94 Supreme Court jurisprudence since has largely followed the same presumption and, therefore, courts are inclined to harmonize treaties and congressional legislation that are seemingly antithetical to one another. 95 In the event that a congressional act were to supplant United States treaty obligations, courts would look for unambiguous evidence appearing “clearly and distinctly" in the text of the statute or treaty provision. 96 In other words, repeals of prior statutes or treaty provision must likely be made express. In contrast, "repeals by implication" are generally disfavored "unless the last statute is so broad in its terms and so clear and explicit in its words as to show that it was intended to cover the whole subject, and, therefore, to displace the prior statute. 97 B. CSLA Versus the Outer Space Treaty Both being duly enacted, the CSLA and the Outer Space Treaty are considered the supreme law of the land. If there is a conflict between the United States space commerce provisions as outlined in the CSLA and the Outer Space Treaty, a reviewing court would first be called upon to interpret the intent of the treaty itself. Recall that in the context of treaty interpretation, a court would be at liberty to give the treaty a broad construction to effectuate its intent. The key provision of the Outer Space Treaty at issue would be the language of Article II which forecloses "national appropriation" of space by claims of sovereignty, means of use, occupation, or any other means.98 Black's Law Dictionary defines "appropriation" as "the exercise of control over property, a taking of possession." 99 If defined broadly enough, the joint enterprise nature of the United States space commerce, as implemented in the CSLA, might violate the "spirit" of non-appropriation as outlined in the Outer Space Treaty of 1967. The best argument one could make against the CSLA's provisions is to advocate the court to broadly interpret the "appropriation" principle of the Outer Space Treaty. The proponent of this argument would urge that in so doing, a court should look beyond the words of the treaty and examine the history, negotiations, and practical considerations at the time of the treaty's negotiation to determine its true intent. 100 One would also want to argue that the space commerce industry violates perhaps not the "letter" of the treaty, but circumvents entirely its "spirit" if a court were taking into account "considerations deducible from the situation of the parties; and the reasonableness, justice, and nature of the thing, for which provision has been made."' 01 One who attacked the CSLA's general legitimacy in this way could argue that the United States is effectively "appropriating" space through its protection and encouragement of private industry. Such an appropriation would take place not by realizing a "sovereign" right to space property or the uses of space as expressly proscribed in the Outer Space Treaty, but, instead, through the effective use of government power, services, and contracts to encourage and support the rapid development of the private space commerce industry in the United States. In essence, the result of such government encouragement might not amount to wholesale sovereign appropriation, but, at the very least, a kind of sovereign and private space activity that would cast doubt on whether the non-appropriation principle is actually being respected. Therefore, one arguing that such activities were tantamount to sovereign appropriation would highlight the interrelatedness of government and private industry and argue for a broad interpretation of "appropriation" that encompassed the practical effects of such a relationship. In addition to the regulatory interaction between the CSLA and private space commerce industries, the interrelatedness between government and private industry is clearly illustrated by the interaction between CSLA and the 1972 Liability Convention. Recall that the Outer Space Treaty and its progeny envision a "state-oriented" system of responsibility 10 2 where each member state is responsible for all actions in outer space undertaken by the state and its nationals. 10 3 The Liability Convention further binds member states by holding each strictly liable for its actions or the actions of its nationals within outer space and permits only member states to petition for remuneration under the terms of the treaty. 1 04 In its text, the CSLA cites to such international obligations,'0 5 while also mitigating the United States' liability under the Liability Convention. 0 6 The CSLA licensing program ensures overall safety of private space ventures, 0 7 raises the funds necessary to pay "potential treaty claims through its liability insurance requirement,' 10 8 and limits the United States' joint and several liability exposure through restricting private use of foreign launch and reentry facilities.'09 These provisions effectively allow the United States to pass on the financial cost and recover from their private entities the amount of damages for which they are internationally liable. 110 In this way, the government is limiting its international liability exposure by passing on the cost to the private sector. When highlighting the further interrelatedness between government and private industry, one could also note that the United States government holds something of a monopoly in launch services and currently requires that decisions regarding commercial space-launch must be approved through the CSLA. 1' In addition, one making this argument would want to highlight the highly interdependent nature of investment flowing from government to private space commerce: in a February 4, 2008 press release, NASA Deputy Administrator Shana Dale justified the agency's 2009 budget request of $17.6 billion by claiming that "[t]he development of space simply cannot be 'all government all the time []' . . . . NASA's budget for [fiscal year] 2009 provides $173 million for entrepreneurs-from big companies or small ones-to develop commercial transport capabilities. . . [and] NASA is designating $500 million toward the development of this commercial space capability." 2

### 1AC---Framing

#### The standard is maximizing expected wellbeing---act hedonistic util

**1] Value is only accessible through experience.**

Harris 10, [Sam Harris, (CEO Project Reason; PHD UCLA Neuroscience; BA Stanford Philosophy), “The Moral Landscape: How Science Can Determine Human Values”, 2010, https://philosophynow.org/issues/90/The\_Moral\_Landscape\_How\_Science\_Can\_Determine\_Human\_Values\_by\_Sam\_Harris/] Recut Sachin from OS

Here is my (consequentialist) starting point: all questions of value (right and wrong, good and evil, etc.) depend upon the possibility of experiencing such value. Without potential consequences at the  evel of experience—happiness, suffering, joy, despair, etc.—all talk of value is empty. Therefore, to say that an act is morally necessary, or evil, or blameless, is to make (tacit) claims about its consequences in the lives of conscious creatures (whether actual or potential). I am unaware of any interesting exception to this rule. Needless to say, if one is worried about pleasing God or His angels, this assumes that such invisible entities are conscious (in some sense) and cognizant of human behavior. It also generally assumes and that it is possible to suffer their wrath or enjoy their approval, either in this world or the world to come. Even within religion, therefore, consequences and conscious states remain the foundation of all values.

**2] Only consequences can explain degrees of wrongness, i.e. it’s worse to break a promise to a dying friend than to skip meeting someone for lunch –either ethical theories cannot explain comparative badness, or it collapses**

**3] Death has to come first in any ethical theory---destroys the subject---ontological evil.**

Paterson 03, [Craig Paterson, (Department of Philosophy, Providence College, Rhode Island) “A Life Not Worth Living?”, Studies in Christian Ethics, 2003., https://www.researchgate.net/publication/6442654\_A\_Life\_Not\_Worth\_Living//] Recut Sachin \*\*\*I can send the PDF if you need it\*\*\*

Contrary to those accounts, I would argue that it is death per se that is really the objective evil for us, not because it deprives us of a prospective future of overall good judged better than the alter- native of non-being. It cannot be about harm to a former person who has ceased to exist, for no person actually suffers from the sub-sequent non participation. Rather, death in itself is an evil to us because it ontologically destroys the current existent subject — it is the ultimate in metaphysical lightening strikes.80 The evil of death is truly an ontological evil borne by the person who already exists, independently of calculations about better or worse possible lives. Such an evil need not be consciously experienced in order to be an evil for the kind of being a human person is. Death is an evil because of the change in kind it brings about, a change that is destructive of the type of entity that we essentially are. Anything, whether caused naturally or caused by human intervention (intentional or unintentional) that drastically interferes in the process of maintaining the person in existence is an objective evil for the person.

**4] Extinction is the upmost moral evil and disavowal of the risk makes it more likely.**

**Burns 17,** [(Elizabeth Finneron-Burns is a Teaching Fellow at the University of Warwick and an Affiliated Researcher at the Institute for Futures Studies in Stockholm, What’s wrong with human extinction?**,** <http://www.tandfonline.com/doi/pdf/10.1080/00455091.2016.1278150?needAccess=true>**,** Canadian Journal of Philosophy, 2017)]

Many, though certainly not all, people might believe that it would be wrong to bring about the end of the human species, and the reasons given for this belief are various. I begin by considering four reasons that could be given against the moral permissibility of human extinction. I will argue that only those reasons that impact the people who exist at the time that the extinction or the knowledge of the upcoming extinction occurs, can explain its wrongness. I use this conclusion to then consider in which cases human extinction would be morally permissible or impermissible, arguing that there is only a small class of cases in which it would not be wrong to cause the extinction of the human race or allow it to happen. 2.1. It would prevent the existence of very many happy people One reason of human extinction might be considered to be wrong lies in the value of human life itself. The thought here might be that it is a good thing for people to exist and enjoy happy lives and extinction would deprive more people of enjoying this good. The ‘good’ in this case could be understood in at least two ways. According to the first, one might believe that you benefit a person by bringing them into existence, or at least, that it is good for that person that they come to exist. The second view might hold that if humans were to go extinct, the utility foregone by the billions (or more) of people who could have lived but will now never get that opportunity, renders allowing human extinction to take place an incidence of wrongdoing. An example of this view can be found in two quotes from an Effective Altruism blog post by Peter Singer, Nick Beckstead and Matt Wage: One very bad thing about human extinction would be that **billions of people would likely die painful deaths**. But in our view, this is by far not the worst thing about human extinction. The worst thing about human extinction is that there would be no future generations. Since there could be so many generations in our future, **the value of all those generations together greatly exceeds the value of the current generation**. (Beckstead, Singer, and Wage 2013) The authors are making two claims. The first is that there is value in human life and also something valuable about creating future people which gives us a reason to do so; furthermore, it would be a very bad thing if we did not do so. The second is that, not only would it be a bad thing for there to be no future people, but it would actually be the worst thing about extinction. Since happy human lives have value, and the number of potential people who could ever exist is far greater than the number of people who exist at any one time, even if the extinction were brought about through the painful deaths of currently existing people, the former’s loss would be greater than the latter’s. Both claims are assuming that there is an intrinsic value in the existence of potential human life. The second claim makes the further assumption that the forgone value of the potential lives that could be lived is greater than the disvalue that would be accrued by people existing at the time of the extinction through suffering from painful and/or premature deaths. The best-known author of the post, Peter Singer is a prominent utilitarian, so it is not surprising that he would lament the potential lack of future human lives per se. However, it is not just utilitarians who share this view, even if implicitly. Indeed, other philosophers also seem to imply that they share the intuition that there is just something wrong with causing or failing to prevent the extinction of the human species such that we prevent more ‘people’ from having the ‘opportunity to exist’. Stephen Gardiner (2009) and Martin O’Neill (personal correspondence), both sympathetic to contract theory, for example, also find it intuitive that we should want more generations to have the opportunity to exist, assuming that they have worth-living lives, and I find it plausible to think that many other people (philosophers and non-philosophers alike) probably share this intuition. When we talk about future lives being ‘prevented’, we are saying that a possible person or a set of possible people who could potentially have existed will now never actually come to exist. To say that it is wrong to prevent people from existing could either mean that a possible person could reasonably reject a principle that permitted us not to create them, or that the foregone value of their lives provides a reason for rejecting any principle that permits extinction. To make the first claim we would have to argue that a possible person could reasonably reject any principle that prevented their existence on the grounds that it prevented them in particular from existing. However, this is implausible for two reasons. First, we can only wrong someone who did, does or will actually exist because wronging involves failing to take a person’s interests into account. When considering the permissibility of a principle allowing us not to create Person X, we cannot take X’s interest in being created into account because X will not exist if we follow the principle. By considering the standpoint of a person in our deliberations we consider the burdens they will have to bear as a result of the principle. In this case, there is no one who will bear any burdens since if the principle is followed (that is, if we do not create X), X will not exist to bear any burdens. So, only people who do/will actually exist can bear the brunt of a principle, and therefore occupy a standpoint that is owed justification. Second, existence is not an interest at all and a possible person is not disadvantaged by not being caused to exist. Rather than being an interest, it is a necessary requirement in order to have interests. Rivka Weinberg describes it as ‘neutral’ because causing a person to exist is to create a subject who can have interests; existence is not an interest itself.3 In order to be disadvantaged, there must be some detrimental effect on your interests. However, without existence, a person does not have any interests so they cannot be disadvantaged by being kept out of existence. But, as Weinberg points out, ‘never having interests itself could not be contrary to people’s interests since without interest bearers, there can be no ‘they’ for it to be bad for’ (Weinberg 2008, 13). So, a principle that results in some possible people never becoming actual does not impose any costs on those ‘people’ because nobody is disadvantaged by not coming into existence.4 It therefore seems that it cannot be wrong to fail to bring particular people into existence. This would mean that no one acts wrongly when they fail to create another person. Writ large, it would also not be wrong if everybody decided to exercise their prerogative not to create new people and potentially, by consequence, allow human extinction. One might respond here by saying that although it may be permissible for one person to fail to create a new person, it is not permissible if everyone chooses to do so because human lives have value and allowing human extinction would be to forgo a huge amount of value in the world. This takes us to the second way of understanding the potential wrongness of preventing people from existing — the foregone value of a life provides a reason for rejecting any principle that prevents it. One possible reply to this claim turns on the fact that many philosophers acknowledge that the only, or at least the best, way to think about the value of (individual or groups of) possible people’s lives is in impersonal terms (Parfit 1984; Reiman 2007; McMahan 2009). Jeff McMahan, for example, writes ‘at the time of one’s choice there is no one who exists or will exist independently of that choice for whose sake one could be acting in causing him or her to exist … it seems therefore that any reason to cause or not to cause an individual to exist … is best considered an impersonal rather than individual-affecting reason’ (McMahan 2009, 52). Another reply along similar lines would be to appeal to the value that is lost or at least foregone when we fail to bring into existence a next (or several next) generations of people with worth-living lives. Since ex hypothesi worth-living lives have positive value, it is better to create more such lives and worse to create fewer. Human extinction by definition is the creation of no future lives and would ‘deprive’ billions of ‘people’ of the opportunity to live worth-living lives. This might reduce the amount of value in the world at the time of the extinction (by killing already existing people), but it would also prevent a much vaster amount of value in the future (by failing to create more people). Both replies depend on the impersonal value of human life. However, recall that in contractualism impersonal values are not on their own grounds for reasonably rejecting principles. Scanlon himself says that although we have a strong reason not to destroy existing human lives, this reason ‘does not flow from the thought that it is a good thing for there to be more human life rather than less’ (104). In contractualism, something cannot be wrong unless there is an impact on a person. Thus, neither the impersonal value of creating a particular person nor the impersonal value of human life writ large could on its own provide a reason for rejecting a principle permitting human extinction. It seems therefore that the fact that extinction would deprive future people of the opportunity to live worth-living lives (either by failing to create either particular future people or future people in general) cannot provide us with a reason to consider human extinction to be wrong. Although the lost value of these ‘lives’ itself cannot be the reason explaining the wrongness of extinction, it is possible the knowledge of this loss might create a personal reason for some existing people. I will consider this possibility later on in section (d). But first I move to the second reason human extinction might be wrong per se. 2.2. **It would mean the loss of the only known form of intelligent life and all civilization and intellectual progress would be lost** A second reason we might think it would be wrong to cause human extinction is the loss that would occur of the only (known) form of rational life and the knowledge and civilization that that form of life has created. One thought here could be that just as some might consider it wrong to destroy an individual human heritage monument like the Sphinx, it would also be wrong if the advances made by humans over the past few millennia were lost or prevented from progressing. A related argument is made by those who feel that there is something special about humans’ capacity for rationality which is valuable in itself. Since humans are the only intelligent life that we know of, it would be a loss, in itself, to the world for that to end. I admit that I struggle to fully appreciate this thought. It seems to me that Henry Sidgwick was correct in thinking that these things are only important insofar as they are important to humans (Sidgwick 1874, I.IX.4).5 If there is no form of intelligent life in the future, who would there be to lament its loss since intelligent life is the only form of life capable of appreciating intelligence? Similarly, if there is no one with the rational capacity to appreciate historic monuments and civil progress, who would there be to be negatively affected or even notice the loss?6 However, even if there is nothing special about human rationality, just as some people try to prevent the extinction of nonhuman animal species, we might think that we ought also to prevent human extinction for the sake of biodiversity. The thought in this, as well as the earlier examples, must be that it would somehow be bad for the world if there were no more humans even though there would be no one for whom it is bad. This may be so but the only way to understand this reason is impersonally. Since we are concerned with wrongness rather than badness, we must ask whether something that impacts no one’s well-being, status or claims can be wrong. As we saw earlier, in the contractualist framework reasons must be personal rather than impersonal in order to provide grounds for reasonable rejection (Scanlon 1998, 218–223). Since the loss of civilization, intelligent life or biodiversity are per se impersonal reasons, there is no standpoint from which these reasons could be used to reasonably reject a principle that permitted extinction. Therefore, causing human extinction on the grounds of the loss of civilization, rational life or biodiversity would not be wrong. 2.3. **Existing people would endure physical pain and/or painful and/or premature deaths** Thinking about the ways in which human extinction might come about brings to the fore two more reasons it might be wrong. It could, for example, occur if all humans (or at least the critical number needed to be unable to replenish the population, leading to eventual extinction) underwent a sterilization procedure. Or perhaps it could come about due to anthropogenic climate change or a massive asteroid hitting the Earth and wiping out the species in the same way it did the dinosaurs millions of years ago. Each of these scenarios would involve significant physical and/or non-physical harms to existing people and their interests. Physically, people might suffer premature and possibly also painful deaths, for example. It is not hard to imagine examples in which the process of extinction could cause premature death. A nuclear winter that killed everyone or even just every woman under the age of 50 is a clear example of such a case. Obviously, some types of premature death themselves cannot be reasons to reject a principle. Every person dies eventually, sometimes earlier than the standard expected lifespan due to accidents or causes like spontaneously occurring incurable cancers. A cause such as disease is not a moral agent and therefore it cannot be wrong if it unavoidably kills a person prematurely. Scanlon says that the fact that a principle would reduce a person’s well-being gives that person a reason to reject the principle: ‘components of well-being figure prominently as grounds for reasonable rejection’ (Scanlon 1998, 214). However, it is not settled yet whether premature death is a setback to well-being. Some philosophers hold that death is a harm to the person who dies, whilst others argue that it is not.7 I will argue, however, that regardless of who is correct in that debate, being caused to die prematurely can be reason to reject a principle when it fails to show respect to the person as a rational agent. Scanlon says that recognizing others as rational beings with interests involves seeing reason to preserve life and prevent death: ‘appreciating the value of human life is primarily a matter of seeing human lives as something to be respected, where this involves seeing reasons not to destroy them, reasons to protect them, and reasons to want them to go well’ (Scanlon 1998, 104). The ‘respect for life’ in this case is a respect for the person living, not respect for human life in the abstract. This means that we can sometimes fail to protect human life without acting wrongfully if we still respect the person living. Scanlon gives the example of a person who faces a life of unending and extreme pain such that she wishes to end it by committing suicide. Scanlon does not think that the suicidal person shows a lack of respect for her own life by seeking to end it because the person whose life it is has no reason to want it to go on. This is important to note because it emphasizes the fact that the respect for human life is person-affecting. It is not wrong to murder because of the impersonal disvalue of death in general, but because taking someone’s life without their permission shows disrespect to that person. This supports its inclusion as a reason in the contractualist formula, regardless of what side ends up winning the ‘is death a harm?’ debate because even if death turns out not to harm the person who died, ending their life without their consent shows disrespect to that person. A person who could reject a principle permitting another to cause his or her premature death presumably does not wish to die at that time, or in that manner. Thus, **if they are killed without their consent, their interests have not been taken into account**, and they have a reason to reject the principle that allowed their premature death.8 This is as true in the case of death due to extinction as it is for death due to murder. However, physical pain may also be caused to existing people without killing them, but still resulting in human extinction. Imagine, for example, surgically removing everyone’s reproductive organs in order to prevent the creation of any future people. Another example could be a nuclear bomb that did not kill anyone, but did painfully render them infertile through illness or injury. These would be cases in which physical pain (through surgery or bombs) was inflicted on existing people and the extinction came about as a result of the painful incident rather than through death. Furthermore, one could imagine a situation in which a bomb (for example) killed enough people to cause extinction, but some people remained alive, but in terrible pain from injuries. It seems uncontroversial that the infliction of physical pain could be a reason to reject a principle. Although Scanlon says that an impact on well-being is not the only reason to reject principles, it plays a significant role, and indeed, most principles are likely to be rejected due to a negative impact on a person’s well-being, physical or otherwise. It may be queried here whether it is actually the involuntariness of the pain that is grounds for reasonable rejection rather than the physical pain itself because not all pain that a person suffers is involuntary. One can imagine acts that can cause physical pain that are not rejectable — base jumping or life-saving or improving surgery, for example. On the other hand, pushing someone off a cliff or cutting him with a scalpel against his will are clearly rejectable acts. The difference between the two cases is that in the former, the person having the pain inflicted has consented to that pain or risk of pain. My view is that they cannot be separated in these cases and it is involuntary physical pain that is the grounds for reasonable rejection. Thus, the fact that a principle would allow unwanted physical harm gives a person who would be subjected to that harm a reason to reject the principle. Of course the mere fact that a principle causes involuntary physical harm or premature death is not sufficient to declare that the principle is rejectable — there might be countervailing reasons. In the case of extinction, what countervailing reasons might be offered in favour of the involuntary physical pain/ death-inducing harm? One such reason that might be offered is that humans are a harm to the natural environment and that the world might be a better place if there were no humans in it. It could be that humans might rightfully be considered an all-things-considered hindrance to the world rather than a benefit to it given the fact that we have been largely responsible for the extinction of many species, pollution and, most recently, climate change which have all negatively affected the natural environment in ways we are only just beginning to understand. Thus, the fact that human extinction would improve the natural environment (or at least prevent it from degrading further), is a countervailing reason in favour of extinction to be weighed against the reasons held by humans who would experience physical pain or premature death. However, the good of the environment as described above is by definition not a personal reason. Just like the loss of rational life and civilization, therefore, it cannot be a reason on its own when determining what is wrong and countervail the strong personal reasons to avoid pain/death that is held by the people who would suffer from it.9 Every person existing at the time of the extinction would have a reason to reject that principle on the grounds of the physical pain they are being forced to endure against their will that could not be countervailed by impersonal considerations such as the negative impact humans may have on the earth. Therefore, a principle that permitted extinction to be accomplished in a way that caused involuntary physical pain or premature death could quite clearly be rejectable by existing people with no relevant countervailing reasons. This means that human extinction that came about in this way would be wrong. There are of course also additional reasons they could reject a similar principle which I now turn to address in the next section. 2.4. **Existing people could endure non-physical harms** I said earlier than the fact in itself that there would not be any future people is an impersonal reason and can therefore not be a reason to reject a principle permitting extinction. However, this impersonal reason could give rise to a personal reason that is admissible. So, the final important reason people might think that human extinction would be wrong is that there could be various deleterious psychological effects that would be endured by existing people having the knowledge that there would be no future generations. There are two main sources of this trauma, both arising from the knowledge that there will be no more people. The first relates to individual people and the undesired negative effect on well-being that would be experienced by those who would have wanted to have children. Whilst **this is by no means universa**l, **it is fair to say that a good proportion of people feel a strong pull towards reproduction** and having their lineage continue in some way. Samuel Scheffler describes the pull towards reproduction as a ‘desire for a personalized relationship with the future’ (Scheffler 2012, 31). Reproducing is a widely held desire and the joys of parenthood are ones that many people wish to experience. For these people knowing that they would not have descendants (or that their descendants will endure painful and/or premature deaths) could create a sense of despair and pointlessness of life. Furthermore, the inability to reproduce and have your own children because of a principle/policy that prevents you (either through bans or physical interventions) would be a significant infringement of what we consider to be a basic right to control what happens to your body. For these reasons, knowing that you will have no descendants could cause significant psychological traumas or harms even if there were no associated physical harm. The second is a more general, higher level sense of hopelessness or despair that there will be no more humans and that your projects will end with you. Even those who did not feel a strong desire to procreate themselves might feel a sense of hopelessness that any projects or goals they have for the future would not be fulfilled. Many of the projects and goals we work towards during our lifetime are also at least partly future-oriented. Why bother continuing the search for a cure for cancer if either it will not be found within humans’ lifetime, and/or there will be no future people to benefit from it once it is found? Similar projects and goals that might lose their meaning when confronted with extinction include politics, artistic pursuits and even the type of philosophical work with which this paper is concerned. Even more extreme, through the words of the character Theo Faron, P.D. James says in his novel The Children of Men that ‘without the hope of posterity for our race if not for ourselves, without the assurance that we being dead yet live, all pleasures of the mind and senses sometimes seem to me no more than pathetic and crumbling defences shored up against our ruins’ (James 2006, 9). Even if James’ claim is a bit hyperbolic and all pleasures would not actually be lost, I agree with Scheffler in finding it not implausible that the knowledge that extinction was coming and that there would be no more people would have at least a general depressive effect on people’s motivation and confidence in the value of and joy in their activities (Scheffler 2012, 43). Both sources of psychological harm are personal reasons to **reject a principle that permitted human extinction**. Existing people could therefore reasonably reject the principle for either of these reasons. Psychological pain and the inability to pursue your personal projects, goals, and aims, are all acceptable reasons for rejecting principles in the contractualist framework. So too are infringements of rights and entitlements that we accept as important for people’s lives. These psychological reasons, then, are also valid reasons to reject principles that permitted or required human extinction.

### 1AC---Underview

#### 1] 1AR Theory –

#### ---A] the aff gets it because otherwise the 1NC could be infinitely abusive which o/w,

#### ---B] it’s drop the debater because the 2AR is too short to win a shell AND substance so theory can only check abuse for the aff

#### ---C] no neg RVI because otherwise they could dump on the shell for 6 minutes and get away with anything by sheer brute force,

#### ---D] fairness is a voter and outweighs---constitutive of competitive activities like debate---every argument either debater makes relies on the judge evaluating them fairly---comes before substance, it determines whether it’s an accurate measure of who debate better.

#### 2] Reasonability on T – Use a brightline of disclosure and link and impact turn ground. Brightline resolves arbitrariness –

#### ---A] Reciprocity – the neg gets exclusive access to topicality so its irreciprocal to hold it to the same standard as other theory,

#### ---B] Bidirectionality – means they get topicality either way – choosing the best interpretation is a bad standard,

#### ---C] Engagement – reasonability encourages a refocus on substantive education – the brightline proves they had the ability to engage.

#### 3] Condo is a voting issue – the time crunched 1AR can’t read its best offense against multiple worlds with different uniqueness conditions – they collapse to what’s undercovered which wrecks engagement.

#### 4] PICs are a voting issue – they moot aff offense with minute policy changes, shifting debates from the core of the literature towards its margins, undermining both topic specific education and strategic options.

#### 5] Counterplans must have a solvency advocate – anything else explodes limits because we have to prepare for infinite counter-plans but having a solvency advocate specific to the aff solves because we know what links.

#### 6] Presumption and Permissibility affirm

#### ---A] Logic – Negating an obligation requires proving a prohibition. To negate you have to give proactive reasoning why an action is wrong. If there are none, affirm.

#### ---B] Freeze – requiring justification for all actions makes it impossible say neutral things like ‘I ought to drink water’, so assume we can take an action.

#### ---C] Presuming statements false means society can’t function because we wouldn’t follow laws

#### 7] Permissibility and presumption triggers are voting issues –

#### ---A] moots the entirety of the 1AC---means we don’t talk about the aff.

#### ---B] disincentivizes clash---we j make our own justifications instead of educational arguing.

## Extra stuff

#### Debris from mining colides with satellites.

Scoles 15, [(Sarah Scoles, freelance science writer, contributor at Wired and Popular Science, author of the books Making Contact and They Are Already Here) “Dust from asteroid mining spells danger for satellites,” New Scientist, May 27, 2015, <https://www.newscientist.com/article/mg22630235-100-dust-from-asteroid-mining-spells-danger-for-satellites/>] Recut DurSac

---They cite – Javier Roa, Space Dynamic Group, Applied Physics Department, Technical University of Madrid. Casey J Handmer, Theoretical Astrophysics, California Institute of Technology. Both PhD Candidates. “Quantifying hazards: asteroid disruption in lunar distant retrograde orbits,” arXiv, Cornell University, May 14, 2015, <https://arxiv.org/pdf/1505.03800.pdf>

IF THE gold mine is too far from home, why not move it nearby? It sounds like a fantasy, but would-be miners are already dreaming up ways to drag resource-rich space rocks closer to home. Trouble is, that could threaten the web of satellites around Earth.

Asteroids are not only stepping stones for cosmic colonisation, but may contain metals like gold, platinum, iron and titanium, plus life-sustaining hydrogen and oxygen, and rocket-fuelling ammonia. Space age forty-niners can either try to work an asteroid where it is, or tug it into a more convenient orbit.

NASA chose the second option for its [Asteroid Redirect Mission](http://www.nasa.gov/content/what-is-nasa-s-asteroid-redirect-mission/), which aims to [pluck a boulder from an asteroid’s surface](https://www.newscientist.com/article/dn27243-rock-grab-from-asteroid-will-aid-human-mission-to-mars) and relocate it to a stable orbit around the moon. But an asteroid’s gravity is so weak that it’s not hard for surface particles to escape into space. Now a new model warns that debris shed by such transplanted rocks could intrude where many defence and communication satellites live – in geosynchronous orbit.

According to [Casey Handmer](http://www.caseyhandmer.com/) of the California Institute of Technology in Pasadena and Javier Roa of the Technical University of Madrid in Spain, 5 per cent of the escaped debris will end up in regions traversed by satellites. Over 10 years, it would cross geosynchronous orbit 63 times on average. A satellite in the wrong spot at the wrong time will suffer a damaging high-speed collision with that dust.

The study also looks at the “catastrophic disruption” of an asteroid 5 metres across or bigger. Its total break-up into a pile of rubble would increase the risk to satellites by more than 30 per cent ([arxiv.org/abs/1505.03800](http://arxiv.org/abs/1505.03800)).

#### Kessler syndrome wrecks research and security [

Omar Lamrani (Senior Military Analyst, Stratfor) 4/18/2019 [“Great Power Competition Feeds the Threat Posed by Anti-Satellite Technology” online @ <https://worldview.stratfor.com/article/great-power-competition-feeds-threat-posed-anti-satellite-technology>] Sachin

India's test, despite being carried out at the low orbit of about 300 kilometers (186 miles), created significant space debris; some fragments will take several years to decay. Space debris can collide with and destroy satellites, creating a multiplier effect known as the Kessler syndrome or "ablation cascade": Collision between objects in space (such as through the destruction of a satellite) creates space debris that then collides with other objects and creates even more space debris. The resulting expanding debris field increases the likelihood that satellites could be damaged — either intentionally or accidentally, which would have disastrous effects on humanity's day-to-day functionality. Individuals, companies and entire nations rely on satellites for all manner of navigation, communications, research and security functions. If certain satellites were to be unexpectedly disabled, society and the economy at large would experience dramatic consequences. But despite the fact that errant space debris could disrupt airplane navigation, render weaponry inoperable or cut off many forms of communication, countries are still likely to take deliberate actions that create more debris for a variety of reasons.