# 1AC v Acton-Boxborough IA

## 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.

#### Private space fails---weak legal framework makes accountability impossible---increases space debris---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.

#### 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)).

### 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 [0:38]

--- 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.

#### Misperceptions fuel a US-China space arms race---causes nuclear war---cooperation now is key.

UCS 14, [UCS, 2014, national nonprofit organization founded by scientists at MIT who sought to use the power of science to address global problems and improve people’s lives. "Nuclear Weapons and US-China Relations" Union of Concerned Scientists. <https://www.ucsusa.org/nuclear-weapons/us-china-relations>] Sachin

Tensions between the United States and China, made worse by mistrust and misunderstandings, work to undermine cooperation on everything from nuclear weapons to space policies. The United States sees China’s growing economic and military power as a potential threat, both regionally and globally. China sees new US military technologies (such as missile defense), and US steps to strengthen ties with Asian allies, as both a military threat and an attempt at containment. Left unchecked, growing tensions could spur the buildup of weapons and make conflict more likely, especially in times of crisis. Combating misunderstandings with accurate information on China's nuclear capabilities and intentions is essential for US security. This includes careful, rigorous scholarship; better translations of Chinese military texts; increased understanding of policy motives and contexts; and a clear technical understanding of China’s military capabilities. Averting an arms race in space U.S. and China flags flying beside one another. The Cold War and the "space race" went hand in hand. China’s development of space technology has led to US reactions—some based on misperceptions and misunderstanding—that could lead to a space arms race. Such a response would threaten legitimate uses of space and could spark conflicts on the ground, raising the risk of armed nuclear conflict. The United States should instead promote cooperation on space science and exploration. This would build trust between the United States and China, and sustain norms against the development, testing, and deployment of space weapons.

#### Warming leads to extinction---it’s a conflict-multiplier.

**Kareiva 18**, [Ph.D. in ecology and applied mathematics from Cornell University, director of the Institute of the Environment and Sustainability at UCLA, Pritzker Distinguished Professor in Environment & Sustainability at UCLA, et al. (Peter, “Existential risk due to ecosystem collapse: Nature strikes back,” *Futures*, 102)] Sachin

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.

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

Nayef 18 [(Professor Nayef R. F. Al-Rodhan is an Honorary Fellow of St. Antony’s College at Oxford University, and Senior Fellow and Head of the Geopolitics and Global Futures Programme at the Geneva Centre for Security Policy. “U.S. Space Policy and Strategic Culture,” 4/16/18. <https://jia.sipa.columbia.edu/online-articles/us-space-policy-and-strategic-culture>)] Sachin

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] 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.] 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] Only pleasure and pain are intrinsically valuable – all other frameworks collapse.

Moen 16, [Ole Martin Moen, Research Fellow in Philosophy at University of Oslo “An Argument for Hedonism” Journal of Value Inquiry (Springer), 50 (2) 2016: 267–281] Sachin

Let us start by observing, empirically, that a widely shared judgment about intrinsic value and disvalue is that pleasure is intrinsically valuable and pain is intrinsically disvaluable. On virtually any proposed list of intrinsic values and disvalues (we will look at some of them below), pleasure is included among the intrinsic values and pain among the intrinsic disvalues. This inclusion makes intuitive sense, moreover, for there is something undeniably good about the way pleasure feels and something undeniably bad about the way pain feels, and neither the goodness of pleasure nor the badness of pain seems to be exhausted by the further effects that these experiences might have. “Pleasure” and “pain” are here understood inclusively, as encompassing anything hedonically positive and anything hedonically negative.2 The special value statuses of pleasure and pain are manifested in how we treat these experiences in our everyday reasoning about values. If you tell me that you are heading for the convenience store, I might ask: “What for?” This is a reasonable question, for when you go to the convenience store you usually do so, not merely for the sake of going to the convenience store, but for the sake of achieving something further that you deem to be valuable. You might answer, for example: “To buy soda.” This answer makes sense, for soda is a nice thing and you can get it at the convenience store. I might further inquire, however: “What is buying the soda good for?” This further question can also be a reasonable one, for it need not be obvious why you want the soda. You might answer: “Well, I want it for the pleasure of drinking it.” If I then proceed by asking “But what is the pleasure of drinking the soda good for?” the discussion is likely to reach an awkward end. The reason is that the pleasure is not good for anything further; it is simply that for which going to the convenience store and buying the soda is good.3 As Aristotle observes: “We never ask [a man] what his end is in being pleased, because we assume that pleasure is choice worthy in itself.”4 Presumably, a similar story can be told in the case of pains, for if someone says “This is painful!” we never respond by asking: “And why is that a problem?” We take for granted that if something is painful, we have a sufficient explanation of why it is bad. If we are onto something in our everyday reasoning about values, it seems that pleasure and pain are both places where we reach the end of the line in matters of value.

#### 2] Reducing existential risks is the top priority in any coherent moral theory

Pummer 15, [Theron, Philosophy @St. Andrews <http://blog.practicalethics.ox.ac.uk/2015/05/moral-agreement-on-saving-the-world/>] Sachin

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

#### 3] Theory---prefer for ground---most frameworks divisively lean one way or another, util is the best in allowing arguments on both sides i.e. we get the debris aff, they get the mining da.

### 1AC---Underview

#### 1] Reasonability on T – Use a brightline of 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.

#### 2] 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.

#### 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.

### 1AC---Extra

#### Satellites are key to preventing nuclear miscalculation.

Johnson 14, [Les Johnson . Baen science fiction author, popular science writer, and NASA technologist. “Living without satellites”. <https://www.baen.com/living_without_satellites>.] Sachin

Satellite imagery is used by the military and our political leaders to maintain the peace. When your potential adversaries can’t hide what they’re doing, where their armies are moving and what they are doing with their civilian and military infrastructure, then the danger of surprise attack is diminished. In our nuclear age with instant death only minutes away by missile attack, the doctrine of Mutual Assured Destruction (MAD) only works if both sides know whether or not they are being attacked. The launch of missiles or a bomber fleet can easily be seen from space far in advance of either reaching their potential targets halfway around the globe. The danger of surprise attack is therefore small, making an accidental war far less likely. So what does all this mean? And what do we do about it? First of all, it means that the advocates of space development, exploration and commercialization have succeeded far beyond their initial expectations and dreams. The economies and security of countries in the developed world are now dependent on space satellites. We space advocates should celebrate our success and be terrified of it at the same time. Should we lose these fragile assets in space, our economy would experience a disruption like no other: ship, air and train travel would stop and only restart/operate in a much-reduced capacity for years (GPS loss). Many banking and retail transactions would cease (VSAT loss). Distribution of news and vital national information would be crippled (communications satellite loss). Lives would be put at risk and the productivity of our farming would dramatically decrease (weather satellite loss). The risk of war, including nuclear war, would increase (loss of spy satellites) and our military’s ability to react to crises would be significantly reduced (loss of military logistics and intelligence gathering satellites).

#### Natural disasters cause widespread instability without response capabilities---risks extinction.

Tipson ’13, [“Natural Disasters as Threats to Peace”, Frederick Tipson – Frederick S. Tipson is an adviser to the USIP Center of Innovation on Science, Technology, and Peacebuilding, BA in history from Stanford, an MA in international relations from Yale, and JD and PhD degrees from the University of Virginia, United States Institute of Peace, Special Report 324, Pub: February 2013, <http://www.usip.org/sites/default/files/resources/Natural%20Disasters%20as%20Threats%20to%20Peace%20SR324.pdf>] Sachin

The incidence of military conflicts between states is at a historic low; even the number of conflicts within states has declined steeply since the twentieth century.51 However, both trends could be slowed or reversed by increased vulnerabilities to natural disasters and the limits of political and economic capacity to deal with them. How should the challenges ahead be framed in terms of U.S. national security and the larger “threats to the peace”? The likelihood is that over time large groups of people will become ecologically displaced persons or “environmental refugees,” forced from their historic homelands and needing relocation to more hospitable places. Citizen Safety Most governments place their highest priority on national security, which begins with ensuring the physical safety of their citizens, or as John Jay famously put it in The Federalist: “Among the many objects to which a wise and free people find it necessary to direct their attention, that of providing for their safety seems to be the first.”52 While they are used to thinking of such safety in terms of protection from attacks by military or terrorist adversaries, Americans also regard their fundamental security as dependent on access to reliable supplies of air, water, food, medicine, and shelter.53 All would likely place these subsistence needs above any threat currently on the horizon, foreign or domestic. However, it is leaders—thought leaders as well as political leaders—who define the priorities for government policy and expenditures in dealing with what they perceive as the greatest threats to the country and its citizens. Such definitions of national security generally arise as narratives developed in the course or aftermath of major international attacks or threats of attack. Historical turning points in these narratives over the last hundred years include, for example, the German attacks on U.S. shipping that provoked the country into World War I; the Japanese attack on Pearl Harbor that plunged the United States into World War II; the Berlin crisis, Korean War, and Soviet nuclear tests that intensified the Cold War; and the September 11, 2001, attacks that provoked the U.S. War on Terror. Whether or not all Americans agreed with the security rationales their leaders offered at those times, they provided bold assessments of the threats confronting the country, which gained wide acceptance. Each narrative was a necessary, and apparently sufficient, political basis to enlist political support for executive orders, policies, legislation, appropriations, treaties, and other international commitments that were consistent with the leaders’ justifications. At present there is no reasonable prospect that U.S. leaders would create a national security narrative focused on the cumulative threats from an overstressed planet.54 To mobilize popular support for the major initiatives necessary to reduce foreseeable risks, U.S. leaders would eventually have to shift their characterizations of such threats from environmental to existential and from futuristic (after 2050) to imminent (before 2020). That shift is unlikely until Americans experience a pattern of severe crises that would shift popular perceptions and political attitudes in decisively different directions. No one wants to contemplate the horrific disasters that might drive such a shift in attitudes, especially when the destruction from Katrina and Sandy seem not to have had such an effect on most political leaders. Political resistance to the recognition of these likely threats is reinforced by a suspicion that those who highlight them are also seeking to justify major government interventions and expenditures, involving severe changes in lifestyles. References to global warming, or even to obvious climate changes, sound to some audiences as code words to justify carbon caps and oil taxes. Therefore this report assumes that such mitigation programs are not foreseeable in time to avoid the climatic, economic, and demographic consequences of current trends. Indeed, it is because these trends will not be changed in time that steps must be taken to adapt to their likely effects. U.S. political and thought leaders need to fulfill their highest responsibility—for the safety of citizens—by beginning to consider a range of risk reduction policies, infrastructure investments, and preparedness strategies, including the necessary legislative and budgetary changes, that might constitute an approach to national security aimed at reducing the direct and secondary consequences of natural disasters. Whether or not the necessary stoic and heroic steps are all politically palatable, the larger arguments for them should at least be actively under current debate. As Stephen Flynn has emphasized, most of these steps would not only reduce U.S. vulnerability to extreme natural events but would also reduce the opportunities for terrorists to exploit the same vulnerabilities.55 U.S. political and thought leaders need to fulfill their highest responsibility—for the safety of citizens—by beginning to consider a range of risk reduction policies, infrastructure investments, and preparedness strategies. How these competing political pressures will play out depends not only on the timing and locations of disasters but also on how soon the growing public perception of our vulnerabilities becomes a political reality. The combination in 2012 of major tornados, midwestern drought, Texas floods, Hurricane Isaac, western wildfires, Arctic ice depletion, and Tropical Storm Sandy could mark the beginning of a sea change in the electorate’s expectations of present and future exposure to natural disasters. In that event, the hardest challenge for U.S. leaders may well be to prevent the country from turning inward to focus on domestic priorities and resisting involvement in the crises of other countries or regions. Such isolationism could be expressed through intensified calls for energy independence, food selfsufficiency, foreign assistance cutoffs, and even military retrenchment. Reversing decades of generosity and pragmatism, donor fatigue and domestic needs could generate a new version of an “America First” constituency that opposes all such international engagement and punishes at the polls any politician who supports it.

Collective Containment U.S. leaders also cannot ignore the national security implications of the most serious risks of disaster beyond our borders. The safety of U.S. citizens is inextricably bound through the global economy with the course of environmental events in other parts of the world. Disasters or extreme conditions that degrade major agricultural areas (Russian, Australian, or Argentinean wheat fields, Japanese, Burmese, Philippine rice), disrupt for prolonged periods key manufacturing, transportation, or communications infrastructure (greater Bangkok, Bosporus, European airspace), or create immense casualties among large stressed populations (pandemics in Pakistan, Brazil, Nigeria) could affect the stability of entire regions. The severe degradation of a megacity could snowball into wider instability and conflict if not managed collaboratively. The sooner and more deliberately U.S. leaders can articulate geographic, cultural, or economic justifications for targeting scarce assistance, the sooner they are to be persuasive to U.S. citizens. Political preparation is equally required of other governments and populations. If disasters multiply, U.S. influence with these countries will likely depend on the level of U.S. engagement, generosity, and leadership in promoting a sense of global solidarity through an agenda for collaboration on resilience, relief, and relocation options. For this purpose, the U.S. government will need to complement its domestic security rationale with a compelling diplomatic narrative that advocates the needs and priorities for dealing with events that might otherwise spark major confrontations. The alternative could well be aggressive measures by governments, desperate for necessities, to bypass market allocations or seize supplies by intercepting transports, deploying covert operations, or even initiating outright invasions. A series of functionally focused collaborations to identify and manage key risks could be indispensable to contain the political consequences of future extreme events. Whether the Security Council, the G-20, the World Health Organization, or some new or combined political coalition would be the locus for such negotiated understandings is unclear. But the likelihood is that all international institutions will have to elevate their focus and resources to address disaster scenarios and environmental vulnerabilities. The security agendas of politicians, policymakers, and intelligence personnel will likely be distracted, for the time being, by perceived dangers from rogue states armed with nuclear weapons, failed states and ungoverned areas as safe havens for terrorists, and economic criminals, such as cyberburglars, unfair traders, and intellectual property thieves. Meanwhile, the safety and prosperity of the United States, as well as peace throughout the world, increasingly will be endangered by unaddressed vulnerabilities to natural disasters and extreme environmental crises. Contention and conflict could also result from the sudden realization—or opportunistic exaggeration—among large groups of alarmed citizens that **such vulnerabilities are both existential and irreversible.** Given demographic and environmental trends, and the increasing vulnerabilities and probable shortages to be expected within this decade—and certainly before 2030—the threats to the peace from Mother Nature may soon come to dwarf any of the threats posed by mere mortals.