## 1

#### Counterplan:

#### Property rights for asteroids should be governed by the doctrine of appropriation. Private appropriation of non-asteroid celestial bodies should be prohibited.

* Resources mined should be distributed democratically as per 1ac levine

#### No link turns -- rules of appropriation solve waste and abstract claims and alternative approaches don’t

Myers 16 -- Ross Myers (J.D. candidate at the University of Oregon Law School.), The Doctrine of Appropriation and Asteroid Mining: Incentivizing the Private Exploration and Development of Outer Space, 2016, Oregon Review of International Law, https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/19850/Meyers.pdf?sequence=1 WJ

Like water during the expansion of the American West, the exploration of space can be financed and incentivized by granting rights in resources to those who secure new resources and put them to beneficial use. Some legal scholars have suggested the traditional rule of capture be applied to asteroids,69 or that rights to asteroids be purchased directly from an international agency and owned as chattel.70 However, like water during America’s westward expansion, asteroids are not easily classified under traditional property regimes. Thus, a doctrine of appropriation would be more appropriate for asteroids than a traditional rule of capture or a chattel system, because a system based on the traditional rule of capture or chattel would result in waste, abstract claims, and complicated legal issues.

First, asteroid claims cannot be adjudicated under the traditional rule of capture, or as chattel, because such systems would be incredibly wasteful. As of now, scientists have observed approximately 450,000 asteroids in our solar system.71

But only a fraction of the observable bodies will be cost effective to mine. While it might one day be possible for a single entity to finance several mining missions at once, current costs associated with such a venture would limit almost any space-mining program to one or two asteroids, at least initially.72 The traditional rule of capture could allow an entity to quickly claim multiple asteroids merely by landing on them and planting a flag, without requiring the entity to show it can reasonably use the resources they have claimed.

Even worse would be a system where the same corporation could claim asteroids simply by discovering their existence and registering the claim. Allowing this type of unregulated claim would incentivize larger corporations capable of space travel to quickly claim reachable asteroids, but the claims could easily outpace those entities’ realistic expectations on what they could use. Under a traditional rule of capture system, the solar system could be divvied up long before the resources could conceivably be mined. A rule similar to the doctrine of appropriation used for water claims in the United States would alleviate this concern by limiting claims to those where a claimant can show a reasonable beneficial use for the resource.

Another concern posed by the traditional rule of capture or chattel system would be the creation of abstract claims. Some legal scholars have advocated for a system where asteroids would be categorized as chattel, and rights in asteroids would be granted to an entity that could identify an asteroid and register ownership of it with an international agency.73 The advantage of such a system would be that it would allow an international agency to keep track of asteroids, and it would allow for the mapping of the reachable solar system. The problem with this approach, however, is that it would result in abstract claims. If an entity could claim the rights to an asteroid without actual possession, there is nothing to prevent that company from claiming ownership long in advance of any real possibility of landing on it. One of the reasons for creating the doctrine of appropriation was to limit abstract claims over resources that were not being used in any reasonable way. Just as the plaintiffs in Hague had no recourse against the third party who wasted the natural gas reserve, there would be no cause of action against an entity that has the rights to an asteroid, but chooses not to exercise them.74 This may be particularly harmful to society because asteroids contain volatiles that may be essential to creating rocket fuel in space, which, in turn, may be crucial to deep space exploration.

Using asteroid-bound volatiles to make rocket fuel would reduce the cost and increase the range of space exploratory missions, possibly improving the human race’s ability to explore and develop space. Under a system were entities could claim asteroids without actual possession, those entities could exclude others from landing on the asteroids and using such resources, even when such resources are languishing unused in space. To prevent the creation of such abstract claims over asteroids, the doctrine of appropriation could be modified as to only grant rights only to entities who are able to demonstrate both actual possession and beneficial use. This would ensure that asteroids claims are limited to those where the resources are actually being used, thus, maximizing the utility of such celestial bodies to society.

Finally, asteroids cannot be adjudicated under the traditional rule of capture or a chattel system because their unique propensity to collide with other celestial bodies would result in vexing legal issues. Pop culture has popularized the notion of an asteroid crashing into the surface of Earth in movies and books, but interspace collisions may be a real concern. Asteroids are constantly moving through space, and they often crash into other asteroids or space debris, and sometimes onto the surface of planets. So real is the concern that space agencies regularly keep track of NEOs, or Near Earth Objects, which include around 10,000 asteroids large enough to be tracked in space.75 Imagine the scenario in the popular movie Armageddon, where society wrestles with the mechanics of destroying a huge asteroid that is headed straight for Earth.76 It would be strange, indeed, if the situation were further complicated by an entity owning the asteroid. Would the Earth have to compensate the company for the loss of resources, or would the company be forced to assume liability for the damage caused by the collision? What if the asteroid, rather than crashing into Earth, crashed instead into another asteroid owned by different entity? It makes sense that a company with actual possession of an asteroid should have a claim for actual mining equipment destroyed, but it seems unreasonable to treat the entire rock as the entity’s chattel. By limiting asteroid claims under a doctrine of appropriation-like system, society will be saved the headache of attempting to adjudicate such absurd situations.

Because the traditional rule of capture or a chattel system for the ownership of asteroids would result in waste, abstract claims, and absurd legal dilemmas, a modified doctrine of appropriation should replace existing outdated international space law relating to asteroids.’

#### Squo private companies are willing to invest, but the plan crosses a perception barrier which destroys investment

Shaw 13 - Lauren E, J.D. from Chapman University School of Law, ”Asteroids, the New Western Frontier: Applying Principles of the General Mining Law of 1872 to Incentive Asteroid Mining”, JOURNAL OF AIR LAW AND COMMERCE, Volume 78, Issue 1, Article 2, <https://scholar.smu.edu/cgi/viewcontent.cgi?article=1307&context=jalc> // recut MNHS NL

To some, the mining of asteroids might sound like the premise of a science fiction novel' or the solution to the heartwrenching, fictional scenario depicted in the film Armageddon.2 To others, it evokes a fantastical idea that may come to fruition in a distant reality. However, impressively funded companies have plans to send spacecraft to begin prospecting on asteroids within the next two years.' The issues associated with the mining of asteroids should be addressed before these plans are set in motion. Much has been written about the issues that might arise from allowing nations to own these space bodies and the minerals they contain; one such issue is the impact on international treaties.4 However, little has been written about the applicability of preexisting mining laws-which provide a basic property right scheme for the private sector-such as the General Mining Law of 1872 (Mining Law) to the management of asteroid mining.' The literature to date on how to legally address asteroid mining is minimal.' The articles that do address it propose the creation of different systems, such as a "property rights-based system that relies on the doctrine of first possession"7 or an international authority that would regulate mining operations.' Implementing a scheme that offers ownership of extracted resources without bestowing complete sovereignty is necessary to avoid an impending legal limbo-that is, an outer space "Wild West" equivalent where there is neither certainty nor security in who owns what.9 If private sector miners of asteroids know this right already exists, they will have more incentive to extract resources.' 0 This, in turn, would increase the chances of successful missions, resulting in numerous scientific and explorative benefits, along with the potential replenishment of key elements that are becoming increasingly depleted on Earth yet are still needed for modern industry. Scientists speculate that key elements needed for modern industry, including platinum, zinc, copper, phosphorus, lead, gold, and indium, could become depleted on Earth within the next fifty to sixty years." Many of these metals, such as platinum, are chemical elements that, unlike oil or diamonds, have no synthetic alternative.12 Once the reserves on Earth are mined to complete depletion, industries will be forced to recycle the existing supply of minerals, which will result in increased costs due to increased scarcity.' 3 However, evidence is accumulating that asteroids only a few hundred thousand miles away from Earth may be composed of an abundance of natural resources-including many of the minerals being mined to depletion on Earth-that could lead to vast profits." Most of the minerals

#### The plan is a direct impingement on the private sector’s ability to further space innovation, exploration, and colonization – bureaucracy and superfluous regulation prevent space from being worth invested in.

**Cooper 09** [Nikhil D. Cooper, Circumventing Non-Appropriation: Law and Development of United States Space Commerce, 36 Hastings Const. L.Q. 457 (2009)] //DDPT

However, it may be the case that such government regulations worked too well when regulating the growing space commerce industry. In the years that followed the CSA's passage, the development of domestic commercial launch capabilities resulted in industry-wide pressure to revise the complex regulatory scheme governing commercial launch.65 The general flaw with many governmental regulatory schemes was that as space commerce developed, the regulations that were intended to manage and oversee the space-launch system overburdened prospective launchers by mandating compliance with a multitude of onerous filing and licensing requirements. Consequently, the legal requirements of launching an object into space imposed a nearly impassable regulatory bureaucracy onto the existent costs of developing, testing, and securing an object for launch. 66

The following example illustrates the problematic combined effect of the government's launch service monopoly and its regulatory bureaucracy: When Space Services Incorporated of America ("SSI") sought to launch the first private commercial Expendable Launch Vehicle ("ELV"), known as the Conestoga I, through the United States Space Transport System ("STS"), it had to contact every governmental agency that could conceivably have jurisdiction over the launch.67 To satisfy its licensing requirements, SSI had to petition the Department of State, Federal Aviation Administration, Coast Guard, Bureaus for Materials and Motor Carriage Safety, Federal Communications Commission, NASA, Department of Defense, Department of Commerce, Bureau of Alcohol, Tobacco, and Firearms, Navy, and Internal Revenue Service. 68 Each agency maintained some conceivable control over a facet of the Conestoga I's launch thereby requiring not only notification, but time to study the launch plans, deliberate, and negotiate permits and licenses with SSI.6 9 Most tellingly, after SSI had secured approval from the necessary agencies, the single most expensive cost of its satellite launch was the cost SSI incurred to jump through governmental regulatory hoops. 70 The effects of such a complex regulatory bureaucracy were heightened by the lack of alternatives in domestic launch services. Until 1982, the United States held a domestic monopoly on launch services to space. 7' In that year, President Reagan announced that the STS would continue to operate as the nation's primary space-launch system for both national security and civil government \* 72 missions. One effect of the announcement was to limit development of alternate space-launch vehicle industries such as the ELV.73 Another effect of the announcement was that it relegated private companies hoping for a cheaper and streamlined launch process through ELVs back to the nightmarishly bureaucratic STS launch system.

#### Public sector space innovation falls continues to fall short – . The private sector is key to space research/innovation. (Redistribution)

Follett 21 [Andrew Follett- previously space and science reporter for Daily Caller News Foundation, researcher for the Congressional Committee on Science, Space and Technology, the National Aeronautics and Space Administration, the Cato Institute, and the Competitive Enterprise Institute. currently conducts research analysis for nonprofit in Washington, D.C., area.. “Private Firms Are the Key to Space Exploration.” 8/21/21. National Review. https://www.nationalreview.com/2021/08/private-firms-are-the-key-to-space-exploration/]

America’s public-sector space program recently had a rough couple of weeks that perfectly exemplify why it desperately needs a free-market overhaul. On July 29, the International Space Station (ISS) suffered a serious loss of control after a Russian spacecraft docked with it, accidentally causing the station to make a full 540-degree rotation and a half before coming to a stop upside down, when the astronauts got it under control. Like most NASA programs, the ISS is massively over budget. Costs were initially projected at $12.2 billion, but the bill ultimately reached a stunning $150 billion. American taxpayers paid around 84 percent of that. What happened to the American dream of human space exploration? Put simply, the government happened. NASA devolved into a jobs program to bring home the space bacon. Then, on August 10, NASA’s inspector general released a report deeming plans to send astronauts back to the moon in 2024 unfeasible because of significant delays in developing the mission’s spacesuits. Right now the suits are being built by 27 different companies that successfully lobbied the government for a piece of the action. SpaceX’s Elon Musk has rightly noted that NASA has “too many cooks in the kitchen.” The difference between NASA’s cumbersome designed-by-committee suits and SpaceX’s suits — created by a single contractor — is remarkable, even to the naked eye. The report unconvincingly blames NASA’s failure to develop a new spacesuit over the last 14 years solely on shifting technical requirements. It recommends “ensuring technical requirements for the next-generation suits are solidified before selecting the acquisition strategy to procure suits for the ISS and Artemis programs.” Instead of dealing with the problem, the Biden administration is trying to distract attention from the space agency’s mismanagement by announcing plans to land the first person of color on the moon . . . even though NASA has been incapable of sending astronauts of any color into space under its own power since July 2011. NASA has been reduced to begging the Russians for a ride. The agency’s troubled Constellation program, meant to replace the Space Shuttle fleet, was canceled after tens of billions of dollars had already been spent. But NASA’s troubles are, depressingly, likely to get even worse. In November the James Webb Space Telescope (JWST) will finally launch, after taxpayers have forked over $9.7 billion. It was originally supposed to launch in 2007 on a budget of $500 million. That means the project is over a decade behind schedule and costing almost 20 times its initial budget. Perhaps the telescope, meant to locate potentially habitable planets around other stars and perhaps even extraterrestrial life, could instead search for a calendar . . . or fiscal sanity . . . in the stars? JWST isn’t the first NASA space telescope to suffer cost overruns and setbacks. The Hubble Space Telescope (HST) was originally intended to launch in 1983, but technical issues delayed the launch until 1990 because the main mirror was incorrectly manufactured. JWST is very likely to fail because it is supposed to unfold itself “origami style” in space in an extremely technically complicated process. If difficulties arise, JWST lacks HST’s generous margin for error because of its location far beyond earth’s orbit at the Sun-Earth L2 LaGrange point. NASA currently lacks the capability to send a team of astronauts out that far to fix any problems. Even if NASA could get out to JWST, the telescope doesn’t have a grappling ring for an astronaut to grab onto and thus could potentially kill astronauts attempting to fix it. It is hard to imagine a better example of the private sector’s amazing ability to outcompete government bureaucracy and mismanagement than NASA’s planned Shuttle replacement, the Space Launch System. It is estimated to cost more than $2 billion per flight. That’s on top of the $20 billion and nine years the agency has already spent developing the vehicle. Contrast that with the comparatively inexpensive $300 million spent by SpaceX to develop the Falcon 9 in a little over four years, and the fact that each Falcon 9 costs around $62 million. One SLS launch could pay for over 32 SpaceX launches. Private ventures such as SpaceX are more efficient because they have a lot more incentive to avoid excessive costs and focus on solutions: Their own money is at stake, and people spend their own money more carefully than they spend taxpayer dollars collected from others. Multiple private American space firms are currently pursuing accomplishments beyond those of NASA, and they are more advanced and ambitious than the entire government space programs of China and the European Union combined. So one possible solution to NASA’s woes would be to greatly increase its reliance on commercial launch providers. And one way to do that would be to return to the system that made civil aviation great: prizes to reward private-sector innovation

#### Asteroid mining key to space colonization – allows for a plethora of dual-use tech

Heise 18 -- Jack Heise (Judicial Law Clerk at U.S. Courts of Appeals), Space, the Final Frontier of Enterprise: Incentivizing Asteroid Mining Under a Revised International Framework, 40 Mich. J. Int'l L. 189 (2018). https://repository.law.umich.edu/mjil/vol40/iss1/5 WJ

Asteroid mining has the potential to facilitate space travel, an outcome the OST holds to be in the interest of humanity as a whole.39 The potential of asteroid mining to reduce the cost of spaceflight, moreover, could facilitate the growth of the space economy. Asteroid mining thus aligns with another stated purposes of the OST in the sense that an expanded space econ- omy could provide substantial benefits to all mankind.40 First, in seeking to face the challenges posed by space travel, the public sector space race gave rise to numerous technological innovations, ranging from LEDs to emergency blankets to memory foam.41 It seems likely that the private space race would result in a similar degree of innovation, the products of which could benefit people across the globe.

Second, a successful mission to Mars could provide benefits beyond a mere sense of interplanetary accomplishment. NASA suggests that, given the parallels between the formation and evolution of Mars and Earth, a voyage there could help “us learn more about our own planet’s history and future.”42 The scientific advancements from such a mission cannot currently be anticipated and are difficult to predict, but “expand[ing] the frontiers of knowledge” in this manner could well bring benefits to all mankind.43

Third, the development of asteroid mining technology could also help advance asteroid diversion tactics. The development of the technology required to conduct successful asteroid mining operations could “help us to divert any incoming asteroids.”44 This is of great importance since NASA recently eliminated its Asteroid Redirect Mission due to funding cuts;45 NASA’s project was hailed by some scientists as a “critical step in demonstrating we can protect our planet from a future asteroid impact . . . .”46 Asteroid mining could step in and fill an important void. While the probability of an Armageddon-causing impact is low, the effects of an impact would be extremely severe.47 Even some mitigation of this risk as a byproduct of as- teroid mining would be a benefit to humanity as a whole.

Finally, reduced launch costs could facilitate measures to combat global climate change. One proposed solution for canceling out predicted increases in average worldwide temperature is to “prevent[] . . . about 1% of incoming solar radiation—insolation—from reaching the Earth. This could be done by scattering into space from the vicinity of Earth an appropriately small frac- tion of total insolation.”48 Asteroid mining could facilitate such measures in that “[t]echnologies that could greatly decrease the cost of space-launch could make a telling difference in the practicality of all types of space- deployed scattering systems of scales appropriate to insolation modulation.”49 There are certainly intermediate measures to combat climate change that ought to be taken first, but asteroid mining would facilitate this expedited solution. While some of the benefits of asteroid mining would doubtless accrue primarily to those nations with asteroid mining companies within their borders, the benefits noted in this section—space exploration as a gen- eral proposition, technological and scientific development, improvement of asteroid diversion technology, and facilitated means of swiftly countering climate change—would inure substantially to the benefit of all mankind.

#### Property rights on aseteorid k2 deep space travel

Myers 16 -- Ross Myers (J.D. candidate at the University of Oregon Law School.), The Doctrine of Appropriation and Asteroid Mining: Incentivizing the Private Exploration and Development of Outer Space, 2016, Oregon Review of International Law, https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/19850/Meyers.pdf?sequence=1 WJ

Asteroids are “metallic, rocky bodies without atmospheres that orbit the sun and are too small to be classified as planets.”33 Like water, asteroids are limited resources that are unconnected to any form of real property. Asteroids vary greatly in size, and are believed to consist primarily of metals and water, sometimes in staggering quantities.34 As such, asteroids may contain significant resources that would help serve to incentivize and facilitate the exploration of space.

Asteroids can be divided into classes, the three most commercially relevant being C-type, M-type, and S-type.35 C-type asteroids (carbonaceous) are the most common variety, and approximately half of the near Earth asteroids that are at least 1km large are C-type asteroids.36 These asteroids have a high content of water, hydrogen, and methane, all of which could potentially be mined to create rocket fuel on-site.37 Rocket fuel storage provides a limit on how far space vessels can be sent into deep space, so the creation of rocket fuel on asteroids would allow missions to probe deeper into space without having to bring enough fuel for a return trip. This could reduce the cost and difficulty of such endeavors significantly, allowing for more efficient exploration and development of deep space.

M-type asteroids (metallic) have the high radar reflectivity characteristic of metals,38 and are probably the most economically attractive targets for mining missions because of the commercial value of the metals in an Earth market. S-type asteroids (stony) are rocky mixtures of silicates, sulphides, and metals,39 but the metals they contain may not be as valuable as those found in M-type asteroids, so they will probably not be the target of initial space mining missions.

Recent scientific reports have suggested a single asteroid may contain staggering quantities of rare metals.40 One report estimated that a moderately sized (1 km) M-type asteroid with a fair enrichment in platinum group metals may contain twice the tonnage of platinum group metals already harvested on Earth combined with economically viable platinum group metal resources still in the ground.41 Put simply, it is believed a single asteroid could contain more platinum than has ever been mined or ever will be mined on Earth. While the economic gain from a mining mission on such an asteroid would be offset by the huge initial cost of reaching the asteroid and capturing the metals, this figure suggests mining missions to asteroids could be extremely profitable. Planetary Resources, a fledgling asteroid mining company, has already targeted a metallic asteroid for a possible future mining mission.42 According to Planetary Resources, this single asteroid may contain more platinum than has ever been mined on Earth.43

Scientific reports have also suggested asteroids may contain large quantities of volatiles, such as hydrogen and methane, which could potentially be broken down and used to synthesize rocket fuel and transport spacecraft between space environments.44 Several companies are already researching how to successfully mine the metals contained in asteroids by using frozen water contained in the asteroid to produce rocket fuel for a return journey.45

Asteroids are similar to water in many respects: both have economic and practical importance and limited availability; both exist as floating objects unconnected to land; and both are practically and commercially important to society and many different industries both in the context of space travel, and in the context of natural resource acquisition. However, unlike water, under the current international treaties regarding space, claims by either private or government entities on celestial objects are prohibited.46

#### Space mining is the only way to solve climate change

Duran 21, (Paloma Duran is a journalist and industry analyst at Mexico Business News, “Is Space Mining the Best Option to Face Climate Change?”), 11-03-21, Mexico Business News, https://mexicobusiness.news/mining/news/space-mining-best-option-face-climate-change // MNHS NL

Going to net zero means that more mining is needed. Experts have said that the current supply cannot support the necessary metals demand for the green transition. As a result, new mining alternatives have gained greater relevance, among them is space mining. Several countries, including Mexico, have shown their interest in this alternative, creating a new space race. “The solar system can support a billion times greater industry than we have on Earth. When you go to vastly larger scales of civilization, beyond the scale that a planet can support, then the types of things that civilization can do are incomprehensible to us … We would be able to promote healthy societies all over the world at the same time that we would be reducing the environmental burden on the Earth,” said Dr. Phil Metzger, Planetary Scientist at the University of Central Florida. Currently, there are several attempts to address global warming and transition to a net zero carbon economy. There has been an increasing interest in renewable energy and infrastructure, which has increased demand for various minerals, especially lithium, cobalt, nickel, copper and rare earth elements. However, according to experts, the world is close to entering a metals supercycle, where demand will exceed available supply, causing prices to skyrocket. Consequently, the mining industry has sought alternatives to achieve the required supply. Options include recycling and improved mine waste management, sea mining and space mining. The latter is considered one of the alternatives with the greatest potential. However, a regulatory framework is still lacking and there is almost no experience in this regard. Despite the lack of knowledge regarding space mining, it has become a very attractive option since the planet is running out of resources. While some people believe that land-based mining is cheaper than space mining, experts believe this may change in the long term. Furthermore, within the solar system there are countless bodies rich in minerals, ores and elements that will accelerate the fight against climate change. “There will come a point when there is nothing left to mine on the surface, prompting mines to reach even further below. But even those resources are destined to run out and so we will aim toward ocean mining, which already has specific technologies that are being developed. Nevertheless, even those mines are limited as well. The mine of the future, which today may seem unlikely, will no longer be on our planet. There will be a time when space mining will be as common as an open leach mine,” Eder Lugo, Minerals Head at Siemens, told MBN. More than 150 million asteroids measuring approximately 100m are believed to be in the inner solar system alone. In addition, astronomers have also identified abundant minerals near the Earth’s space and the Main Asteroid Belt. There are three main groups into which asteroids are divided: C- type, S- type, and M- type. The last two groups are the most abundant in minerals such as gold, platinum, cobalt, zinc, tin, lead, indium, silver, copper and rare earth metals. "Energy is limited here. Within just a few hundred years, you will have to cover all of the landmass of Earth in solar cells. So, what are you going to do? Well, what I think you are going to do is you are going to move out in space … all of our heavy industry will be moved off-planet and Earth will be zoned residential and light-industrial,” said Jeff Bezos, Founder of Amazon and the Space Launch Provider Blue Origin.

#### Warming causes extinction

Yangyang Xu 17, Assistant Professor of Atmospheric Sciences at Texas A&M University; and Veerabhadran Ramanathan, Distinguished Professor of Atmospheric and Climate Sciences at the Scripps Institution of Oceanography, University of California, San Diego, 9/26/17, “Well below 2 °C: Mitigation strategies for avoiding dangerous to catastrophic climate changes,” Proceedings of the National Academy of Sciences of the United States of America, Vol. 114, No. 39, p. 10315-10323

We are proposing the following extension to the DAI risk categorization: warming greater than 1.5 °C as “dangerous”; warming greater than 3 °C as “catastrophic?”; and warming in excess of 5 °C as “unknown??,” with the understanding that changes of this magnitude, not experienced in the last 20+ million years, pose existential threats to a majority of the population. The question mark denotes the subjective nature of our deduction and the fact that catastrophe can strike at even lower warming levels. The justifications for the proposed extension to risk categorization are given below.

From the IPCC burning embers diagram and from the language of the Paris Agreement, we infer that the DAI begins at warming greater than 1.5 °C. Our criteria for extending the risk category beyond DAI include the potential risks of climate change to the physical climate system, the ecosystem, human health, and species extinction. Let us first consider the category of catastrophic (3 to 5 °C warming). The first major concern is the issue of tipping points. Several studies (48, 49) have concluded that 3 to 5 °C global warming is likely to be the threshold for tipping points such as the collapse of the western Antarctic ice sheet, shutdown of deep water circulation in the North Atlantic, dieback of Amazon rainforests as well as boreal forests, and collapse of the West African monsoon, among others. While natural scientists refer to these as abrupt and irreversible climate changes, economists refer to them as catastrophic events (49).

Warming of such magnitudes also has catastrophic human health effects. Many recent studies (50, 51) have focused on the direct influence of extreme events such as heat waves on public health by evaluating exposure to heat stress and hyperthermia. It has been estimated that the likelihood of extreme events (defined as 3-sigma events), including heat waves, has increased 10-fold in the recent decades (52). Human beings are extremely sensitive to heat stress. For example, the 2013 European heat wave led to about 70,000 premature mortalities (53). The major finding of a recent study (51) is that, currently, about 13.6% of land area with a population of 30.6% is exposed to deadly heat. The authors of that study defined deadly heat as exceeding a threshold of temperature as well as humidity. The thresholds were determined from numerous heat wave events and data for mortalities attributed to heat waves. According to this study, a 2 °C warming would double the land area subject to deadly heat and expose 48% of the population. A 4 °C warming by 2100 would subject 47% of the land area and almost 74% of the world population to deadly heat, which could pose existential risks to humans and mammals alike unless massive adaptation measures are implemented, such as providing air conditioning to the entire population or a massive relocation of most of the population to safer climates.

Climate risks can vary markedly depending on the socioeconomic status and culture of the population, and so we must take up the question of “dangerous to whom?” (54). Our discussion in this study is focused more on people and not on the ecosystem, and even with this limited scope, there are multitudes of categories of people. We will focus on the poorest 3 billion people living mostly in tropical rural areas, who are still relying on 18th-century technologies for meeting basic needs such as cooking and heating. Their contribution to CO2 pollution is roughly 5% compared with the 50% contribution by the wealthiest 1 billion (55). This bottom 3 billion population comprises mostly subsistent farmers, whose livelihood will be severely impacted, if not destroyed, with a one- to five-year megadrought, heat waves, or heavy floods; for those among the bottom 3 billion of the world’s population who are living in coastal areas, a 1- to 2-m rise in sea level (likely with a warming in excess of 3 °C) poses existential threat if they do not relocate or migrate. It has been estimated that several hundred million people would be subject to famine with warming in excess of 4 °C (54). However, there has essentially been no discussion on warming beyond 5 °C.

Climate change-induced species extinction is one major concern with warming of such large magnitudes (>5 °C). The current rate of loss of species is ∼1,000-fold the historical rate, due largely to habitat destruction. At this rate, about 25% of species are in danger of extinction in the coming decades (56). Global warming of 6 °C or more (accompanied by increase in ocean acidity due to increased CO2) can act as a major force multiplier and expose as much as 90% of species to the dangers of extinction (57).The bodily harms combined with climate change-forced species destruction, biodiversity loss, and threats to water and food security, as summarized recently (58), motivated us to categorize warming beyond 5 °C as unknown??, implying the possibility of existential threats. Fig. 2 displays these three risk

#### Delaying space colonization by even a second is worth 100 trillion lives -- most conservative estimate

Bostrom 3 -- Nick Bostrom (Needs no further introduction), Astronomical Waste: The Opportunity Cost of Delayed Technological Development, Utilitas Vol. 15, No. 3 (2003): pp. 308-314, https://www.nickbostrom.com/astronomical/waste.html WJ

As I write these words, suns are illuminating and heating empty rooms, unused energy is being flushed down black holes, and our great common endowment of negentropy is being irreversibly degraded into entropy on a cosmic scale. These are resources that an advanced civilization could have used to create value-structures, such as sentient beings living worthwhile lives.

The rate of this loss boggles the mind. One recent paper speculates, using loose theoretical considerations based on the rate of increase of entropy, that the loss of potential human lives in our own galactic supercluster is at least ~10^46 per century of delayed colonization.[1] This estimate assumes that all the lost entropy could have been used for productive purposes, although no currently known technological mechanisms are even remotely capable of doing that. Since the estimate is meant to be a lower bound, this radically unconservative assumption is undesirable.

We can, however, get a lower bound more straightforwardly by simply counting the number or stars in our galactic supercluster and multiplying this number with the amount of computing power that the resources of each star could be used to generate using technologies for whose feasibility a strong case has already been made. We can then divide this total with the estimated amount of computing power needed to simulate one human life.

As a rough approximation, let us say the Virgo Supercluster contains 10^13 stars. One estimate of the computing power extractable from a star and with an associated planet-sized computational structure, using advanced molecular nanotechnology[2], is 10^42 operations per second.[3] A typical estimate of the human brain’s processing power is roughly 10^17 operations per second or less.[4] Not much more seems to be needed to simulate the relevant parts of the environment in sufficient detail to enable the simulated minds to have experiences indistinguishable from typical current human experiences.[5] Given these estimates, it follows that the potential for approximately 10^38 human lives is lost every century that colonization of our local supercluster is delayed; or equivalently, about 10^29 potential human lives per second.

While this estimate is conservative in that it assumes only computational mechanisms whose implementation has been at least outlined in the literature, it is useful to have an even more conservative estimate that does not assume a non-biological instantiation of the potential persons. Suppose that about 10^10 biological humans could be sustained around an average star. Then the Virgo Supercluster could contain 10^23 biological humans. This corresponds to a loss of potential equal to about 10^14 potential human lives per second of delayed colonization.

What matters for present purposes is not the exact numbers but the fact that they are huge. Even with the most conservative estimate, assuming a biological implementation of all persons, the potential for one hundred trillion potential human beings is lost for every second of postponement of colonization of our supercluster.[6]

## 2

#### The affirmative offers a solution: implement [insert aff plan] to secure [insert aff impact]. This is the wrong approach—we exist within a “control society,” where power is exercised not through repression, but continuous control-- frame this round as an interrogation of productivity and desire.

Deleuze 92[Gilles Deleuze was a French philosopher who, from the early 1950s until his death in 1995, wrote on philosophy, literature, film, and fine art. His most popular works were the two volumes of Capitalism and Schizophrenia: Anti-Oedipus and A Thousand Plateaus, both co-written with psychoanalyst Félix Guattari, Postscript on the Societies of Control on JSTOR, Winter 1992,The MIT press,https://www.jstor.org/stable/778828?seq=1, 12-11-2021 amrita]

The different internments or spaces of enclosure through which the individual passes are independent variables: each time one is supposed to start from zero, and although a common language for all these places exists, it is analogical. On the other hand, **the different control mechanisms are inseparable variations, forming a system of variable geometry the language of which is numerical** (which doesn’t necessarily mean binary). Enclosures are molds, distinct castings, but controls are a modulation, like a self-deforming cast that will continuously change from one moment to the other, or like a sieve whose mesh will transmute from point to point. This is obvious in the matter of salaries: the factory was a body that contained its internal forces at a level of equilibrium, the highest possible in terms of production, the lowest possible in terms of wages; but **in a society of control, the corporation has replaced the factory, and** the corporation is a spirit, a gas. Of course the factory was already familiar with the system of bonuses, but **the corporation works more deeply to impose a modulation of each salary, in states of perpetual metastability** that operate through challenges, contests, and highly comic group sessions. If the most idiotic television game shows are so successful, it’s because they express the corporate situation with great precision. The factory constituted individuals as a single body to the double advantage of the boss who surveyed each element within the mass and the unions who mobilized a mass resistance; but **the corporation constantly presents the brashest rivalry as a healthy form of emulation, an excellent motivational force that opposes individuals** against one another and runs through each, dividing each within. The modulating principle of “salary according to merit**” has not failed to tempt national education itself**. Indeed, just as the corporation replaces the factory, **perpetual training tends to replace the school, and continuous control to replace the examination, which is the surest way of delivering the school over to the corporation**. In the disciplinary societies one was always starting again (from school to the barracks, from the barracks to the factory), while in the societies of control one is never finished with anything—the corporation, the educational system, the armed services being metastable states coexisting in one and the same modulation, like a universal system of deformation. In The Trial, Kafka, who had already placed himself at the pivotal point between two types of social formation, described the most fearsome of juridical forms. The apparent acquittal of the disciplinary societies (between two incarcerations); and the limitless postponements of the societies of control (in continuous variation) are two very different modes of juridical life, and if our law is hesitant, itself in crisis, it’s because we are leaving one in order to enter into the other. **The disciplinary societies have two poles: the signature that designates the individual, and the number or administrative numeration that indicates his or her position within a mass**. This is because the disciplines never saw any incompatibility between these two, and because at the same time power individualizes and masses together, that is, constitutes those over whom it exercises power into a body and molds the individuality of each member of that body. (Foucault saw the origin of this double charge in the pastoral power of the priest—the flock and each of its animals—but civil power moves in turn and by other means to make itself lay “priest.”) **In the societies of control, on the other hand, what is important** is no **longer either a signature or a number, but a code:** the code is a password, while on the other hand the disciplinary societies are regulated by watchwords (as much from the point of view of integration as from that of resistance). The numerical language of control is made of codes that mark access to information, or reject it. **We no longer find ourselves dealing with the mass/individual pair.** Individuals have become “dividuals,” and masses, samples, data, markets, or “banks.” Perhaps it is money that expresses the distinction between the two societies best, since discipline always referred back to minted money that locks gold in as numerical standard, while control relates to floating rates of exchange, modulated according to a rate established by a set of standard currencies. The old monetary mole is the animal of the spaces of enclosure, but the serpent is that of the societies of control. We have passed from one animal to the other, from the mole to the serpent, in the system under which we live, but also in our manner of living and in our relations with others. The disciplinary man was a discontinuous producer of energy, but the man of control is undulatory, in orbit, in a continuous network. Everywhere surfing has already replaced the older sports. Types of machines are easily matched with each type of society—not that machines are determining, but because they express those social forms capable of generating them and using them. The old societies of sovereignty made use of simple machines—levers, pulleys, clocks; but the recent disciplinary societies equipped themselves with machines involving energy, with the passive danger of entropy and the active danger of sabotage; the societies of control operate with machines of a third type, computers, whose passive danger is jamming and whose active one is piracy and the introduction of viruses. This technological evolution must be, even more profoundly, a mutation of capitalism, an already well-known or familiar mutation that can be summed up as follows: nineteenth-century capitalism is a capitalism of concentration, for production and for property. **It therefore erects the factory as a space of enclosure, the capitalist being the owner of the means of production but also, progressively, the owner of other spaces conceived through analogy** (the worker’s familial house, the school). As for markets, they are conquered sometimes by specialization, sometimes by colonization, sometimes by lowering the costs of production. But**, in the present situation, capitalism is no longer involved in production, which it often relegates to the Third World, even for the complex forms of textiles, metallurgy, or oil production. It’s a capitalism of higher-order production.** It no longer buys raw materials and no longer sells the finished products: it buys the finished products or assembles parts. What it wants to sell is services and what it wants to buy is stocks. **This is no longer a capitalism for production but for the product, which is to say, for being sold or marketed. Thus it is essentially dispersive, and the factory has given way to the corporation.** The family, the school, the army, the factory are **no longer the distinct analogical spaces that converge towards an owner—state or private power—but coded figures—deformable and transformable—of a single corporation that now has only stockholders**. Even art has left the spaces of enclosure in order to enter into the open circuits of the bank. The conquests of the market are made by grabbing control and no longer by disciplinary training, by fixing the exchange rate much more than by lowering costs, by transformation of the product more than by specialization of production. Corruption thereby gains a new power. Marketing has become the center or the “soul” of the corporation. We are taught that corporations have a soul, which is the most terrifying news in the world. The operation of markets is now the instrument of social control and forms the impudent breed of our masters. Control is short-term and of rapid rates of turnover, but also continuous and without limit, while discipline was of long duration, infinite and discontinuous. Man is no longer man enclosed, but man in debt. It is true that capitalism has retained as a constant the extreme poverty of three-quarters of humanity, too poor for debt, too numerous for confinement: control will not only have to deal with erosions of frontiers but with the explosions within shanty towns or ghettos.

#### Distinctions between the private and public sphere do not exist-- the affirmative’s theorization of such is the latest tactic of control society to modulate the enunciation of behavior and subjectivity through fascist mechanisms.

Hardt 98 [Michael Hardt is an American political philosopher and literary theorist. Hardt is best known for his book Empire, which was co-written with Antonio Negri. It has been praised by Slavoj Žižek as the "Communist Manifesto of the 21st Century". He is currently a professor of literature at Duke University, The Global Society of Control on JSTOR, Fall 1998, Discourse Vol. 20, No. 3, Gilles Deleuze: A Reason to Believe in this World, https://www.jstor.org/stable/41389503, 12-14-2021 amrita]

There Is No More Outside The passage from disciplinary society to **the society of control is characterized** first of all **by the collapse of** the walls **that defined** the **institutions. There is progressively less distinction,** in other words, between inside and outside. This is really part of a general change in the way that power marks space in the passage from modernity to postmodernity. Modern sovereignty has always been conceived in terms of a (real or imagined) territory and the relation of that territory to its outside. Early modern social theorists, for example,from Hobbes to Rousseau, understood the civil order as a limited and interior space that is opposed or contrasted to the external order of nature. The bounded space of civil order, its place, is defined by its separation from the external spaces of nature. In an analogous fashion, the theorists of modern psychology understood drives, passions, instincts, and the unconscious metaphorically in spatial terms as an outside within the human mind, a continuation of nature deep within us. Here the sovereignty of the Self rests on a dialectical relation between the natural order of drives and the civil order of reason or consciousness. Finally, modern anthropology's various discourses on primitive societies often function as the outside that defines the bounds of the civil world. **The process of modernization**, then, in all these varied contexts, **is the internalization of the outside,** that is, the civilization of nature. In the postmodern world, **however, this dialectic** between inside and outside, between the civil order and the natural order, **has come to an end**. This is one precise sense in which the contemporary world is postmodern. "Postmodernism," Fredric Jameson tells us, "is what **you have when the modernization process is complete and nature is gone for good**."3 Certainly we continue to have forests and crickets and thunderstorms in our world, and we continue to understand our psyches as driven by natural instincts and passions, but we have no nature in the sense that these forces and phenomena are no longer understood as outside, that is, they are not seen as original and independent of the artifice of the civil order. In a postmodern world all phenomena and forces are artificial, or as some might say, part of history. The modern dialectic of inside and outside **has been replaced by a play of degrees** and intensities, of hybridity **and** artificiality. Secondly, the outside **has also declined in terms of** a rather different modern **dialectic that defined the relation between public and private in liberal political theory**. The **public spaces** of modern society, **which constitute the place of liberal politics, tend to disappear** in the postmodern world. According to the liberal tradition, the modern individual, at home in its private spaces, regards the public as its outside. The outside is the place proper to politics, where the action of the individual is exposed in the presence of others and there seeks recognition. In the process of postmodernization, however, **such public spaces are increasingly becoming privatized**. The urban landscape is shifting from the modern focus on the common square and the public encounter to the closed spaces of malls, freeways, and gated communities. The architecture and urban planning of megalopolises such as Los Angeles and Sao Paulo have tended to limit public access and interaction as well as limited chance encounters of different social subjects, creating rather a series of protected interior and isolated spaces. Alternatively, consider how the banlieu of Paris has become a series of amorphous and indefinite spaces that promote isolation rather than any interaction or communication. **Public space has been privatized to such an extent** that **it no longer makes sense to understand social organization in terms of a dialectic between private and public spaces**, between inside and outside. The **place of modern liberal politics has disappeared** **and thus from this optic our postmodern and imperial society** **is characterized by a deficit of the political**. In effect, the place of politics has been deactualized. In this regard, Guy Debord's analysis of the society of the spectacle, thirty years after its composition, seems ever more apt and urgent.4 In postmodern society the spectacle is a virtual place, or more accurately, a non-place of politics. The **spectacle is at once unified** and diffuse in such a way that **it is impossible to distinguish** any inside from outside - the natural from the social, **the private from the public**. The **liberal notion of the public**, the place outside where we act in the presence of others, **has been** both **universalized** (because we are always now under the gaze of others, monitored by safety cameras) **and sublimated** or de-actualized in the virtual spaces of the spectacle. The end of the outside is the end of liberal politics. Finally, from the perspective of Empire, or rather from that of the contemporary world order, there is no longer an outside **also in a** third sense, a properly **military sense**. When Francis Fukuyama claims that the contemporary historical passage is defined by the end of history, he means that the era of major conflicts has come to an end: in other words, sovereign power will no longer confront its Other, it will no longer face its outside, but rather progressively expand its boundaries to envelop the entire globe as its proper domain.5 The history of imperialist, inter-imperialist, and anti-imperialist wars is over. The end of that history has ushered in the reign of peace. Or really, we have entered the era of minor and internal conflicts. Every imperial war is a civil war, a police action- from Los Angeles and Granada to Mogadishu and Sarajevo. **In fact, the separation of tasks between the external and internal arms of power (between the army and the police, the CIA and the FBI) is increasingly vague and indeterminate.** In our terms the end of history that Fukuyama refers to is the end of the crisis at the center of modernity, the coherent and defining conflict that was the foundation and raison d'etre for modern sovereignty. History has ended precisely and only to the extent that it is conceived in Hegelian terms- as the movement of a dialectic of contradictions, a play of absolute negations and subsumption. The binaries that defined modern conflict have become blurred. The Other that might delimit a sovereign Self has become fractured and indistinct, and there is no longer an outside that can bound the place of sovereignty. At one point in the Cold War, in an exaggerated version of the crisis of modernity, every enemy imaginable (from women's garden clubs and Hollywood films to national liberation movements) could be identified as communist, that is, part of the unified enemy. The outside is what gave the crisis of the modern and imperialist world its coherence. **Today it is increasingly difficult for the ideologues of the United States to name the enemy, or rather there seem to be minor and elusive enemies everywhere.6 The end of the crisis of modernity has given rise to a proliferation of minor and indefinite crises in the imperial society of control, or as we prefer, to an omni-crisis.** It is useful to remember here that the capitalist market is one machine that has always run counter to any division between inside and outside. The capitalist market is thwarted by exclusions and it **thrives by including always increasing numbers within its sphere**. Profit can only be generated through contact, engagement, interchange, and commerce. The realization of the world market would constitute the point of arrival of this tendency. In its ideal form there is no outside to the world market: the entire globe is its domain.7 We might use the form of the world market as a model for understanding the form of imperial sovereignty in its entirety. Perhaps, just as Foucault recognized the panopticon as the diagram of modern power and disciplinary society, the world market might serve adequately (even though it is not an architecture; it is really an anti-architecture) as the diagram of imperial power and the society of control.8 The striated space of modernity constructs places that are continually engaged in and founded on a dialectical play with their outsides**. The space of imperial sovereignty, in contrast, is smooth. It might appear that it is free of the binary divisions of modern boundaries, or striation, but really it is criss-crossed by so many fault lines that it only appears as a continuous, uniform space. In** this sense, the clearly defined crisis of modernity gives way to an omnicrisis in the imperial framework. In this smooth space of empire, there is no place of power- it is both everywhere and nowhere. The empire is an u-topos , or rather a non-place.

#### This may seem innocuous, but it creates a war on difference, a new totalitarian model that is premised upon reactive orientations to desire, leaving only a simulation of political participation creating fascism-- that turns case.

Karatzogianni and Robinson 13. [Athina Karatzogianni is a Senior Lecturer in Media and Communication at the University of Leicester (UK), Andrew Robinson is an independent researcher and writer, “Schizorevolutions vs. Microfascisms: A Deleuzo-Nietzschean Perspective on State, Security, and Active/Reactive Networks,” Selected Works, July 2013, http://works.bepress.com/athina\_ karatzogianni, 8-17-2019, amrita]

Thesis 2: The threatened state transmutes into the terror state. The return of state violence from the kernel of state exceptionalism is a growing problem. It is grounded on a reaction of the terrified state by conceiving the entire situation as it is formerly conceived specific sites of exception and emergency (c.f. Agamben, 1998, 2005). New forms of social control directed against minor deviance or uncontrolled flows are expanding into a war against difference and a systematic denial of the ‘right to have rights’ (Robinson, 2007). The project is not simply an extension of liberal-democratic models of social control, but breaks with such models in directly criminalizing nonconformity from a prescribed way of life and attempting to extensively regulate everyday life through repression. This new repressive model, expressing a kind of neo-totalitarianism, should be taken to include such measures and structures as the rise of gated communities, CCTV, RFID, ID cards, ASBOs, dispersal zones, paramilitary policing methods, the ‘social cleansing’ of groups such as homeless people and street drinkers from public spaces, increasing restrictions on protests and attacks on ‘extremist’ groups, the use of extreme sentencing against minor deviance, and of course the swathe of “anti-terrorism” laws which provide a pretext for expanded repression. This increasingly vicious state response leads to extremely intrusive state measures. The magazine Datacide analyses the wave of repression as ‘the real subsumption of every singularity in the domain of the State. From now on if your attributes don't quite extend to crime, a judge's word suffices to ensure that crime will reach out and embrace your attributes’ (Hyland n.d.). To decompose networks, the state seeks to shadow them ever more closely. The closure of space is an inherent aspect of this project of control. While open space is a necessary enabling good from the standpoint of active desire, it is perceived as a threat by the terrified state, because it is space in which demonised Others can gather and recompose networks outside state control. Hence, for the threatened state, open space is space for the enemy, space of risk. Given that open space is in contrast necessary for difference to function (since otherwise it is excluded as unrepresentable or excessive), the attempts to render all space closed and governable involve a constant war on difference which expands ever more deeply into everyday life. As Guattari aptly argues, neoliberal capitalism tends to construe difference as unwanted ‘noise’ (1996: 137). Society thus becomes a hothouse of constant crackdowns and surveillance, which at best simulates, and at worst creates, a situation where horizontal connections either cannot emerge or are constantly persecuted. Theories such as those of Agamben and Kropotkin show the predisposition of the state to pursue total control. But why is the state pursuing this project now? To understand this, one must recognise the multiple ways in which capitalism can handle difference. Hence, there are two poles the state can pursue, social-democratic (adding axioms) or totalitarian (subtracting axioms), which have the same function in relation to capitalism, but are quite different in other regards. State terror involves the replacement of addition of axioms (inclusion through representation) with subtraction of axioms (repression of difference). This parallels the distinction between ‘hard’ and ‘soft’ power in international relations. Crucially, ‘hard’ power is deflationary (Mann 2005: 83-4). While ideological integration can be increased by intensified command, ‘soft’ power over anyone who remains outside the dominant frame is dissipated. Everyday deviance becomes resistance because of the project of control which attacks it. It also becomes necessarily more insurrectionary, in direct response to the cumulative attempts to stamp it out through micro-regulation. What the state gains in coercive power, it loses in its ability to influence or engage with its other. But the state, operating under intense uncertainty and fear, is giving up trying to seem legitimate across a field of difference. A recent example of this concerns the treatment of whistleblowers: Bradley [Chelsea] Manning and by extent the publisher Julian Assange in the WikiLeaks case (for a discussion of affect see Karatzogianni, 2012) and Edward Snowden in relation to the recent revelations about NSA surveillance program PRISM (Poitras and Greenwald’s video Interview with Edward Snowden, 9 June 2013). This is not to say that it dispenses with articulation. It simply restricts it tautologically to its own ideological space (Negri 2003: 27). Legitimation is replaced by information, technocracy and a simulation of participation (Negri 2003: 90, 111.). There is a peculiarly close relationship between the state logic of command and the field of what is variously termed ‘ideology’ (in Althusser), ‘mythology’ (in Barthes) and ‘fantasy’ (in Lacan): second- order significations embedded in everyday representations, through which a simulated lifeworld is created, in which people live in passivity, creating their real performative connection to their conditions of existence and bringing them into psychological complicity in their own repression. Such phenomena are crucial to the construction of demonised Others which provides the discursive basis for projects of state control. ‘[Conflict is] deflected... through the automatic micro-functioning of ideology through information systems. This is the normal, ‘everyday’ fascism, whose most noticeable feature is how unnoticeable it is’ (Negri 1998a: 190). In denial of generalisable rights, the in-group defines social space for itself and itself alone. The result is a denial of basic dignity and rights to those who fall outside "society", who, in line with their metaphysical status, are to be cast out, locked away, or put beyond a society defined as being for "us and us only" (the mythical division between social and anti-social). The neo-totalitarian state resurrects the tendency to build a state ideology, but this ideology is now disguised as a shared referent of polyarchic parties and nominally free media. Failing to think in statist terms is no longer any different from criminal intent. Romantically crossing an airport barrier for a goodbye kiss is taken as a major crime, for the state, being terrified, responds disproportionately; the romantic is blamed for producing this response (Baker and Robins, 2010). He should have thought like the state to begin with, and not corrupted its functioning with trivialities such as love. Such is the core of the terror-state: constant exertion of energy to ward off constant anxiety, at the cost of a war on difference. Networks under Threat - Network Terror Thesis 3: Networked movements escape the state-form. Thesis 4: State terror targets and terrifies movements. Thesis 5: Movement terror is an outcome of state terror against movements. At the intersection of the threatened state and the sources of its anxiety lies the collapse of marginal integration and ‘addition of axioms’ in neoliberalism. Capitalism has been clenching its fists on the world for some time, and many spaces and people are falling through its fingers. The formal sector of the economy is shrinking, leaving behind it swathes of social life marginalized from capitalist inclusion. Much of the global periphery is in effect being forcibly ‘delinked’ from the world economy as inclusion through patronage is scaled down due to neoliberalism. For instance, ‘Sub-Saharan Africa has almost dropped out of the formal international economy’ (Mann, 2005: 55-6). Religious, militia and informal economic organisations have replaced the state on the ground across swathes of Africa, and ‘whole regions have now become virtually independent, probably for the foreseeable future, of all central control’ (Bayart, Ellis and Hibou, 1999: 19-20). These spaces are the locus of the state’s fear of ‘black holes’ where state power breaks down and insurgents can flourish (Korteweg, 2008; Innes, 2008). On a human scale, exclusion, or ‘forced escape’, is even more noticeable. Arif Dirlik argues that capitalism controls enough resources that it no longer needs to control the majority of people; it can simply ignore and exclude four-fifths of the world (1994: 54-5). William Robinson refers to a new stratum of ‘supernumeraries’ in countries like Haiti, who are completely marginalised from production, useless to capitalism and prone to revolt (1996: 342, 378). This became even more evident with the extreme recent seismic event in January 2010 a paradigmatic failure to save lives. This stratum is another locus of the state’s fears. Such people are in Žižek’s terms the ‘social symptom’ of the current world order, ‘the part which, although inherent to the existing universal order, has no ‘proper place’ within it’ (Žižek, 1999, p. 224). Hence, as Caffentzis puts it, ‘Once again, as at the dawn of capitalism, the physiognomy of the world proletariat is that of the pauper, the vagabond, the criminal, the panhandler, the refugee sweatshop worker, the mercenary, the rioter’ (1992: 321). Viewed in affirmative terms, these excluded sites and peoples are associated with the network form. The last few decades have seen a proliferation of network-based movements -- some emancipatory, others less so -- drawing their membership from marginalised groups and creating autonomous zones in marginal spaces. In the South, such movements often grow out of the everyday networks of survival which ‘provide an infrastructure for the community and a measure of functional autonomy’ (Hecht and Simone, 1994: 14-15; c.f. Lomnitz, 1977; Chatterjee 1993). The discontented excluded lie at the heart of today’s asymmetrical wars. For instance, Giustozzi has investigated the origins of the Pakistani Taleban, revealing that it flourishes mainly among young people who do not receive ‘peace, income, a sense of purpose, a social network’ from the established structure of tribal power (Giustozzi 2007: 39), while Watts (2007) has referred to what is known locally as the ‘restive youth problem’ as central to the conflict in the Niger Delta. One can also refer here to mass protest revolts such as those in Greece and the French banlieues, and spectacular revolts against state power in which police stations and state symbols are attacked, such as the Boko Haram revolt in Nigeria and the uprising of Primero Comando da Capital (PCC) in Sao Paolo. Ignoring for the moment the distinctions among such movements, their vitality can clearly be traced to their networked and marginal loci. Resisting or eluding the terror-state’s grab for space, horizontal networks flow around the state’s restrictions, moving into residual unregulated spaces, gaps in the state’s capacity to repress, across national borders, or into the virtual. Repression drives dissent from open to clandestine forms, creating a field of diffuse resistance and deviance, which ‘returns’ as intractable social problems and inert effects**.**

#### Endorse community-based radical organizing built around collective solidarity—the plan is doomed to failure if it is tied to discussions of how space is bad. Space has the radical potential to be different and you should affirm a subversion of their politic—no perms.

Battaglia 12 [Debbora Battaglia is a professor at Mount Holyoke College. “Arresting hospitality: the case of the 'handshake in space,” The Journal of the Royal Anthropological Institute, Vol. 18, <https://www.jstor.org/stable/41506671>., 12-14-2021 amrita]

Towards an extra-territorial ethics of hospitality While acknowledging that anthropologists of play and ludic limits could have a field day with some of this paper's ethnographic material,26 I have tried to do something more far-reaching here – seeking in the complex exchanges of various natural, techno- cultural, and social force-fields the features of an extra-territorial ethics of hospitality, for shaping possible nature-culture futures on the ground. Circling by degrees around 'handshake' scenarios that are basically all about social relations crafted in small actions of non-sovereignty, I seek to posit the diplomatic strategy of suspending welcome as an emblematic action of denying power claimed in the name of territory (Boden)27: Apollo and Soyuz may have sourced to state structures and geopolitical security concerns, but the project could go beyond these. Denying rights to hosting, authoring, or authorizing hospitality other than mutually (as we saw in the hard fact of androgynous technology and manoeuvres for mutual rescue), astronauts and cosmonauts replaced sovereign claims to space with their own relational code — one in which 'the welcomed guest is treated as a friend or ally, as opposed to the stranger treated as an enemy (friend/enemy, hospitality/hostility)' (Derrida 2000: 4). But the ethnography exceeds Derrida's anthropocentrism. Because both spacecraft and humans are as much of space as in it, we are moved to appreciate the value of cutting 'guest' and 'host' free to engage nature-culture relations. To take up sidelong the point that Agamben (2005) carries forward from Carl Schmitt for defining sovereignty, space-as-itself is here the only possible sovereign power: that to which exceptions to human laws source. It is in this sense that the cosmonauts and astronauts of Apollo-Soyuz were acting both humbly and boldly as 'little gods' who would deny a politics of territory a place of privilege in space or on Earth, even as the nations to which they owed their allegiance committed to this value officially in rhetorics of colonization and/or conquest. It is thus that space creates space for a God concept in the company of which both religious orthodoxies and orthodox science can only be uncomfortable (cf. Derrida 2002). It follows that forms of civility become visible in this instance as protentive actions for laws not only in suspension but in submission to space-as-itself — the extreme testing-ground of laws beyond arbitrage, by which the values of the nominal are not only appreciated but strongly felt, as fieldworking astronauts' and cosmonauts' first-person narratives show. Long-duration space station missions enabled by the techno-logical advances of ASTP will in future lend their micro-spaces more readily to narratives and images of sovereignty, including the sovereignty of property. But not in the spacetime of the welcome withheld. It is because purposeful ruptures of nominal conduct interfere with nature-culture business-as-usual that hospitality can abide there, as it were in the aporia. Beyond being merely tolerated, gifts of disruption within insider space communities seized the moment for ‘worlding’ differently than by fixed rules of engagement. Bruno Latour writes in War of the worlds: what about peace?, ‘Modernism distinguishes itself from its successor—what should it be called? "Second modernity"? ... — in this one small respect: from now on the battle is about the making of the common world and the outcome is uncertain. That's all. And that's enough to change everything’ (2002: 33, emphasis added). Derrida takes this anthropological turn when he speaks of hospitality arising not from 'the love of man as a sentimental motive' — it is not about philanthropy — but (quoting Kant) from 'the right of a stranger not to be treated with hostility when he arrives on someone else's territory'. Hospitality is to be thought of as a universal ‘obligation, a right, and a duty all regulated by law’ (2000: 4).28 And this is more or less precisely stated by the USSR Command Centre spokesperson in a post-flight statement to the world press: The flight was conducted in accordance with an agreement between the Union of Soviet Socialist Republics and the United States of America. This document foresaw the execution of projects for the creation of joint means of motion and docking of the Soviet and American manned spacecraft and stations, with the purpose of increasing the safety of spaceflights and securing the possibility of realizing in the future joint scientific experiments.29

## 3

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#### ] Existential risks are categorically different – and o/w

Baum 15

Seth D. Baum, PhD in geography from Pennsylvania State University, is Executive Director of the Global Catastrophic Risk Institute, “Winter-Safe Deterrence: The Risk of Nuclear Winter and Its Challenge to Deterrence, Contemporary Security Policy, 36(1): 123-14, http://www.tandfonline.com/10.1080/13523260.2015.1012346

Here it is important to bring in the ethics of global catastrophic risk. A global catastrophe is an event that causes great harm to the entirety of global human civilization. Catastrophes of this magnitude take on a special ethical significance. Carl Sagan was perhaps the first to recognize this in his own discussion of nuclear winter. The astronomer saw the big picture: Human extinction means the loss of all people who could ever exist into the distant future. Contemporary scholars further understand that even without total human extinction, a permanent collapse of human civilization is of comparable significance. Ultimately what is at stake is the long-term trajectory of human civilization, its success or its failure. Ethical obligations to future generations are fundamentally different from those to people alive today, for two reasons. First, future generations vastly outnumber the current population.

#### No ev –

#### Independently, satellite constellations are not appropiation – they are usage but not appropiation

Johnson 20’Johnson, Christopher D. "The legal status of megaleo constellations and concerns about appropriation of large swaths of earth orbit." *Handbook of small satellites: Technology, design, manufacture, applications, economics and regulation* (2020): 1-22

C. D. Johnson (\*) Secure World Foundation, Washington, DC, USA e-mail: cjohnson@swfound.org © Springer Nature Switzerland AG 2020 J. Pelton (ed.), Handbook of Small Satellites, https://doi.org/10.1007/978-3-030-20707-6\_95-1

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He has also served as an intern in the [Office of International and Interagency Relations](http://oiir.hq.nasa.gov/) (OIIR) at [NASA](http://www.nasa.gov/index.html#.UtmGAtIo5ok) Headquarters in Washington, DC, and as a legal stagiaire in the International Law and EU Legal Affairs division at the [European Space Agency](http://www.esa.int/ESA)’s Legal Department at ESA Headquarters in Paris, France. As a member of the [Space Generation Advisory Council](http://spacegeneration.org/) (SGAC), Mr. Johnson co-founded the [Space Law and Policy Project Group](http://spacegeneration.org/index.php/projects/space-law) in 2012. Mr. Johnson serves as a Professor of Law (Adjunct) at the Georgetown University Law Center in Washington D.C., where he co-teaches the spring Space Law Seminar. He is also Adjunct Faculty at the International Space University (ISU) in Strasbourg, France, the Legal Advisor for the Moon Village Association (MVA); and a Core Expert and Rule Drafter in the Manual on International Law Applicable to Military Activities in Outer Space (MILAMOS) project. These constellations are merely the exercise and enjoyment of the freedom of exploration and use of outer space and do not constitute any impermissible appropriation of the orbits that they transit. 18 C. D. Johnson Freedom of Access and Use Permits Constellations Rather than being a violation of other’s rights to access and explore outer space, the deployment of these constellations is more correctly viewed as the exercise and enjoyment of the right to access and use outer space. Article I of the Outer Space Treaty establishes a right to access and use space without discrimination. Not allowing an actor to deploy spacecraft, regardless of their number or destination, would be infringing with the exercise of their freedom. It would be discriminatory. Additionally, actors do not need permission from any other State, or group of States, to access and explore outer space. Aligned with the Intentions of the Outer Space Treaty This use of outer space by constellations in LEO, while not explicitly mentioned by the drafters of the Outer Space Treaty or other space law, actually is the fulfillment of their visions for the use of outer space. The preamble to the Outer Space Treaty (which contains the subject matter and purpose of the treaty and can be used for interpreting the operative articles of the treaty) speaks of the aspirations of humanity in exploring and using outer space. It is easy to see constellations that will provide Internet access to the world as fulfilling the visions of the drafters: The States Parties to this Treaty, Inspired by the great prospects opening up before mankind as a result of man’s entry into outer space, Recognizing the common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes, Believing that the exploration and use of outer space should be carried on for the benefit of all peoples irrespective of the degree of their economic or scientific development, **Desiring to contribute to broad international cooperation in the scientific as well as the legal aspects of the exploration and use of outer space for peaceful purposes, Believing that such cooperation will contribute to the development of mutual understanding and to the strengthening of friendly relations between States and peoples, As such, subsequent article of the Outer Space Treaty should be read in a permissive light, as permitting constellations, rather than a restrictive light which only sees potential negative aspects of constellations. Due Regard and Harmful Contamination Will be Addressed Operators in LEO are well aware of the challenges to space sustainability that their constellations will pose and will be taking efforts to mitigate the creation of debris. OneWeb is keenly focused on space sustainability and has even argued that the current norm, whereby spacecraft are not in space for longer than 25 years and are deorbited from lower orbits at the end of their lifetime (aka post mission disposal), is not sufficient** The Legal Status of MegaLEO Constellations and Concerns About Appropriation... 19 to keep outer space clean and that shorter lifespan limits should be imposed on operators, especially operators in LEO, and operators of small satellites. Additionally, these systems will be able to cooperate with emerging space safety and space traffic management plans and can operate in ways that do not restrict or impinge on other users of the space domain. Because due regard is therefore displayed for the space domain, and to the interests of others, these constellations do not prejudice or infringe upon the freedoms of use and exploration of the space domain and are therefore not occupation, or possession, much less appropriation. This Does Not Constitute Possession, or Ownership, or Occupation The use of LEO by satellite constellations is substantially similar to the use of GSO, and therefore permissible. In each region, individual actors are given permission - either from a national administrator or from an international governing body (the ITU) via a national administer–to use precoordinated subsections of space. In a way that is overwhelmingly similar to the use of orbital slots in GSO, the placement of spacecraft into orbits in LEO or higher orbits does not constitute possession, ownership, or occupation of those orbits. This is because States (and their companies) have been occupying orbital slots in GSO for decades, and these uses of GSO have never been accused of “appropriating” GSO. The users have never claimed to be appropriating GSO, and their exercising of rights to use GSO is respected by other actors in the space domain. This is the same situation for other orbits, including LEO and other non-Geostationary orbits. And while GSO locations are relatively stable (subject to space weather and other perturbations, and require stationkeeping), spacecraft in LEO are actually moving through space and are not stationary, so it is even more difficult to see this use by constellations as occupation, much less appropriation. Moreover, Space Situational Awareness (SSA) and Space Traffic Management (STM) will allow other uses to use these orbits, and nothing about the use of any one user necessarily precludes others. Lastly, there is no intention by operators of constellations to exclusively occupy, must less possess or appropriate, these orbits. Would not the appropriation of outer space be an intentional, volutional act? No such intention can be found in the operators of global constella

#### Squo tracking, shielding, and removal plans solve

Dr. Brian Koberlein 16, Professor of Physics at the Rochester Institute of Technology and PhD in Astrophysics from the University of Connecticut, “Cascade Effect”, 5-4, https://archive.briankoberlein.com/2016/05/04/cascade-effect/index.html

In the movie Gravity the driving force of the plot is a catastrophic cascade of space debris. An exploding satellite sends high speed debris into the path of other satellites, and the resulting collisions create more space debris until everything from a space shuttle to the International Space Station faces an eminent threat of destruction. Not unexpectedly, the movie portrayal of such a situation is not particularly accurate, but the risk of a debris cascade is very real.

It’s known as the Kessler syndrome, after Donald Kessler, who first imagined the scenario in the 1970s. The problem comes down to the fact that small objects in Earth orbit can stay in orbit for a very long time. If an astronaut drops a bolt, it can stay in orbit for decades or centuries. Because the relative speed of two objects in orbit can be quite large, it doesn’t take a big object to pose a real threat to your spacecraft. On the highway a small pebble can chip your car windshield. In space it can be done by a chip of paint traveling at thousands of kilometers per hour. In the history of the space shuttle missions, there were more than 1,600 debris strikes. Because of such strikes, more than 90 space shuttle windows had to be replaced over the lifetime of shuttle missions.

While that might sound alarming, it’s actually quite manageable. Upgrades and maintenance were quite common on the shuttle missions, and we tend to err on the side of caution when it comes to replacing parts. Modern spacecraft also have ways to mitigate the risk of small impacts, such as Whipple shields made of thin layers of material spaced apart so that objects disintegrate when hitting the shield rather than the spacecraft itself. We also have a tracking system that currently tracks more than 300,000 objects bigger than 1 cm, so we can make sure that most spacecraft avoid these objects.

But the risk of big collisions isn’t negligible. In 2009 the Iridium 33 and Kosmos-2251 satellites collided at high speed, destroying both spacecraft and creating more dangerous debris. It wouldn’t take many collisions like this for the debris numbers to rise dramatically, and more debris means a greater risk of collisions. In Gravity the cascade happens very quickly, triggered by a single event. The reality is not quite so grave. Instead of happening overnight, Kessler syndrome would occur gradually, raising collision risks to the point where certain orbits become logistically impractical. It could occur so gradually that we might not notice it early on, and there are some that argue it’s already underway.

The good news is that we’re aware of the threat. And, as the old saying goes, knowing is half the battle. Already we take steps to limit the amount of debris created. New spacecraft include end of life plans to remove them from orbit, either by sending them into Earths atmosphere to burn up, or sending them to a “graveyard orbit” that poses little risk to other spacecraft. There are also plans on the drawing board to clear orbits of debris, particularly in low-Earth orbit where the risk is greatest. The cascade effect is a real risk, but it’s also one we can likely manage with a bit of ingenuity.

#### Kessler’s Syndrome wrong and super long timeframe---he’s adjusted it recently

Kurt 15 – JD-William & Mary

Joseph Kurt, JD- William & Mary School of Law, BA-Marquette University, NOTE: TRIUMPH OF THE SPACE COMMONS: ADDRESSING THE IMPENDING SPACE DEBRIS CRISIS WITHOUT AN INTERNATIONAL TREATY, 40 Wm. & Mary Envtl. L. & Pol'y Rev. 305 (2015)

A. Practical Considerations: Feasible Solutions to the Space Debris Problem Are on Their Way

One key question in assessing whether an international treaty is a requisite for solving the space debris problem is just how difficult it will be to fashion a remedy. The more complex and costly are feasible solutions, the more likely it is that a comprehensive regime is necessary to bind the various actors together. 93Link to the text of the note

A good place to begin is to determine just how imminent is the onset of the cascade of exponentially more frequent debris-creating collisions, known as the Kessler Syndrome. 94Link to the text of the note To be certain, no one can be sure--this phenomenon being subject to highly complex probabilities. 95Link to the text of the note Indeed, experts' estimates of when such a cascade will become irreversible vary [\*316] widely. 96Link to the text of the note The National Research Council produced a report in 2011 that suggested that "space might be just 10 or 20 years away from severe problems." 97Link to the text of the note In fact, the cascading effect has already begun, albeit at a modest pace. 98Link to the text of the note However, Donald Kessler, who first described the eponymous effect in 1978, has significantly recalibrated his own outlook over the years. 99Link to the text of the note Originally, Kessler predicted that catastrophe would result by the year 2000. 100Link to the text of the note That date long passed, Kessler now speaks of a century-long process that "we have time to deal with." 101Link to the text of the note

#### **[Skip} Military space satellites have already been broken up by space debris – their escalation scenario is absurd**

Wall 21’ Home News Spaceflight Space collision: Chinese satellite got whacked by hunk of Russian rocket in March By Mike Wall published August 17, 2021 We may see more and more of these orbital smashups in the coming years. //RD Debatedrills

Yunhai 1-02's wounds are not self-inflicted. In March, the U.S. Space Force's 18th Space Control Squadron (18SPCS) reported the breakup of Yunhai 1-02, a Chinese military satellite that launched in September 2019. It was unclear at the time whether the spacecraft had suffered some sort of failure — an explosion in its propulsion system, perhaps — or if it had collided with something in orbit. We now know that the latter explanation is correct, thanks to some sleuthing by astrophysicist and satellite tracker Jonathan McDowell, who's based at the Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts. Sponsored Links Cupertino: Startup Is Changing the Way People Retire SmartAsset Related: The worst space debris events of all time Click here for more Space.com videos... CLOSE On Saturday (Aug. 14), McDowell spotted an update in the Space-Track.org catalog, which the 18SPCS makes available to registered users. The update included "a note for object 48078, 1996-051Q: 'Collided with satellite.' This is a new kind of comment entry — haven't seen such a comment for any other satellites before," McDowell tweeted on Saturday. He dove into the tracking data to learn more. McDowell found that Object 48078 is a small piece of space junk — likely a piece of debris between 4 inches and 20 inches wide (10 to 50 centimeters) — from the Zenit-2 rocket that launched Russia's Tselina-2 spy satellite in September 1996. Eight pieces of debris originating from that rocket have been tracked over the years, he said, but Object 48078 has just a single set of orbital data, which was collected in March of this year. "I conclude that they probably only spotted it in the data after it collided with something, and that's why there's only one set of orbital data. So the collision probably happened shortly after the epoch of the orbit. What did it hit?" McDowell wrote in another Saturday tweet. Yunhai 1-02, which broke up on March 18, was "the obvious candidate," he added — and the data showed that it was indeed the victim. Yunhai 1-02 and Object 48078 passed within 0.6 miles (1 kilometer) of each other — within the margin of error of the tracking system — at 3:41 a.m. EDT (0741 GMT) on March 18, "exactly when 18SPCS reports Yunhai broke up," McDowell wrote in another tweet. Thirty-seven debris objects spawned by the smashup have been detected to date, and there are likely others that remain untracked, he added. Despite the damage, Yunhai 1-02 apparently survived the violent encounter, which occurred at an altitude of 485 miles (780 kilometers). Amateur radio trackers have continued to detect signals from the satellite, McDowell said, though it's unclear if Yunhai 1-02 can still do the job it was built to perform (whatever that may be). Space Junk Clean Up: 7 Wild Ways to Destroy Orbital Debris Click here for more Space.com videos... McDowell described the incident as the first major confirmed orbital collision since February 2009, when the defunct Russian military spacecraft Kosmos-2251 slammed into Iridium 33, an operational communications satellite. That smashup generated a whopping 1,800 pieces of trackable debris by the following October. However, we may be entering an era of increasingly frequent space collisions — especially smashups like the Yunhai incident, in which a relatively small piece of debris wounds but doesn't kill a satellite. Humanity keeps launching more and more spacecraft, after all, at an ever-increasing pace. "Collisions are proportional to the square of the number of things in orbit," McDowell told Space.com. "That is to say, if you have 10 times as many satellites, you're going to get 100 times as many collisions. So, as the traffic density goes up, collisions are going to go from being a minor constituent of the space junk problem to being the major constituent. That's just math." We may reach that point in just a few years, he added. The nightmare scenario that satellite operators and exploration advocates want to avoid is the Kessler syndrome — a cascading series of collisions that could clutter Earth orbit with so much debris that our use of, and travel through, the final frontier is significantly hampered. RELATED STORIES — Who's going to fix the space junk problem? — Space junk removal is not going smoothly — The world needs space junk standards, G7 nations agree Our current space junk problem is not that severe, but the Yunhai event could be a warning sign of sorts. It's possible, McDowell said, that Object 48078 was knocked off the Zenit-2 rocket by a collision, so the March smashup may be part of a cascade. "That's all very worrying and is an additional reason why you want to remove these big objects from orbit,"

#### Corporation can still space mine under non-apropiation principles – means the case has 0 solvency

Wrench 19’ John G. Wrench, Non-Appropriation, No Problem: The Outer Space Treaty Is Ready for Asteroid Mining, 51

Case W. Res. J. Int'l L. 437 (2019)

Available at: <https://scholarlycommons.law.case.edu/jil/vol51/iss1/119>’ John G. Wrench, Non-Appropriation, No Problem: The Outer Space Treaty Is Ready for Asteroid Mining, 51 Case W. Res. J. Int'l L. 437 (2019) Available at: https://scholarlycommons.law.case.edu/jil/vol51/iss1/11

The prior appropriation’s system of senior and junior claimants is enforced and regulated by a centralized authority. Acting in a “trusteeship role,” the government is responsible for enforcing validly established water rights.144 Although enforcement is sometimes avoided, as noted above, the value of a senior claim is necessarily dependent on the enforcement of those rights, especially when water is in short supply.145 In addition to adjudicating claims, the government is responsible for the “conservation of the public’s water resources.”146 Here, the implications of the “public ownership” concept is significant: …[T]he state assumed a trusteeship role to administer the waters of the state for the benefit of the public. As such, it became responsible not only for minimal administrative functions but also for administration of the kind a trustee owes to the beneficiary of the trust. Its responsibilities include, first and foremost, the conservation of the estate and avoidance of waste; second, the promotion of beneficial use by assisting the 139. Id. at 882. 140. For the retelling of an incident in Aspen, Colorado, arising from a senior claimant’s erection of a damn to prove their senior rights, see id. at 899 (Junior claimants may have a legally unjustified expectation that senior claimants will share in time of scarcity even though there is no “reasonableness” requirement in priority enforcement). 141. Dan Lueck, The Rule of First Possession and the Design of the Law, appropriator in achieving use objectives to the maximum extent feasible; third, the representation of beneficiaries in a parens patriae capacity and maintaining the use regimen on the river system; and fourth, the promotion of efficiency and prudence of the kind expected of a trustee.147 The prior appropriation doctrine serves as a unique example for space law because of how it conceptualizes land ownership. Underlying land is available for use not because it is “unowned,” but because it is owned by a community who has the right to make productive use of it.148 Because the community owns the land, claimants have an obligation to use the land properly and the government is responsible for stewardship.149 This framing fits neatly with proponents of the idea that outer space is collectively “owned” by the international community. Regardless, stewardship and government ownership do not necessarily displace the potential for productive use. Parties do not violate the non-appropriation principle simply by extracting—or as here, diverting—resources from the land. At no point does extraction equate to a sovereign claim over the land. In instances where non-productive use or the like violates those principles, property rights disappear. Furthermore, the OST encourages the idea that outer space is to be used to benefit the broader international community.150 The prior appropriation doctrine illustrates that parties can establish and transfer robust property rights in resources independent from land-ownership, while promoting beneficial use. C

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