## OFF

### NC – T

#### Interp: Affirmatives may not defend only specific instances of outer space appropriation by private entities as unjust.

#### Violation: They only identify Ukraine’s appropriation of space as unjust

#### Moral statements are generic normative principles – necessitates the generic interpretation

McDonald 09 [Hugh P. McDonald, professor of philosophy at the New York City College of Technology. "Principles: The Principles of Principles." The Pluralist, vol. 4, no. 3, [University of Illinois Press, Society for the Advancement of American Philosophy], 2009, pp. 98–126, https://www.jstor.org/stable/20708996] HWIC

"Principle" has a great many meanings: origin, beginning, cause, rule, axiom, and so on.5 However, we cannot assume any necessary relation of these meanings. They may be distinct meanings without relations. Neverthe less we can trace some common roots and thereby interconnections of the meanings. I will concentrate here on certain meanings relevant to the prin ciple of principles, that principles are actual. One meaning is that principles are the "ultimate source, origin, or cause of something" or the "originating or actuating agency or force." Principles are connected with the origin and cause of any "something." Moreover, principles may cause the actuality of the something. A second meaning of principles is that they regulate change, whether internally, as the "method of operation of a thing," or as an external cause. That is, principles are regulative, especially including rules for opera tions, involving changes. As rules, they are universal for a kind, although there may be exceptions to them in certain modes. A principle, then, is an originating rule that universally regulates the formation, operation, or other changes of any actuality, which as universal applies to that kind of thing. Machines may be built according to a principle and operate on the same or even a different principle. Ships presume the principle of floatation but may be built according to principles of woodworking or those of other materials. The principle can have different modes?whether necessary, as in logical inference; general, as in scientific laws; or actualization of possibilities, as in machines or as in moral principles that we follow, but could do otherwise.6 I will cover modes below.

Principles are also a cause as regulative, combining cause and rule. The principle can be external, as in a chemical catalyst; or internal, as in geneti cally caused changes.7 Both kinds of causes involve relations. Internal prin ciples exhibit "tendencies," to borrow the word used in the dictionary. They continue to operate across time. Actions that come under principles may be of kinds whose causes are separate in time, since we may cease an action for a time and then take it up again; while genetic characteristics are tenden cies whose causes are connected by reproduction. As causal, principles may be originary for a kind. Especially in new technologies, for example, flying machines, the principle that organisms could fly (birds, bats, and insects) preceded the invention of the technology, although the principles of aero dynamics were discovered later. However, flying utilized and actualized the latter principles. In this sense, principles can be constitutive rules as the origin of a kind, whether generic or specific.

External principles are regulative and not attributes. They regulate change, such that change is not chaotic. Principles are not bodies, objects, or entities but are the basis of the judgment or evaluation that the latter will persist, since they follow or are regulated by principles. Moreover, there is another sense in which principles are not attributes, since the relation of bodies, ob jects, or other terms for actualities implies a common principle, an identity that is regulated and constituted by the same actual principle. "Object" is a principle uniting instances normatively, for example, that solids persist unless acted upon by heat, etc.

Scientific, engineering, and practical laws are cases of principles. The "law of gravity" is the principle of gravity. Rules of "right conduct" also exhibit laws. Principles form an identity of different instances that fall under the law, whether generally or invariably. Laws and rules are regulative identities, applicable to different instances, and whether originary, constitutive, or ex ternally regulative. Voluntary adherence to a rule is bringing actions in line with a principle or enacting a principle.

Since principles are general, the statement of a principle includes an abstraction of some identity element of the instance. Principles, then, can constitute the elements in any instance insofar as there are identical ele ments, such as matter, species, and genera. This abstraction both identifies the instance as alike with other instances in some respect and differentiates it from those that do not exhibit the principle. The instance may contain several principles conjointly, matter, the state of the matter, function, aes thetic element, and many others. Thus principles connect like instances in a very complex set of relations. A diamond and a painting may share aesthetic qualities but their material, functional, and cultural principles may be quite different. Since identity and difference are correlative terms, every identity is also a difference and this principle applies to actual principles in the world, one principle of principles. To identify a rock of a certain type as consisting in certain chemical combinations connects it with that kind of mineral in general but also certain chemical elements in general, their physical proper ties (such as consisting of a certain atomic number of protons, electrons, and the like), and other principles. However, it also differentiates the rock from other types with their own specific principles, although some generic prin ciples may overlap, namely, the physical properties of all chemical elements as consisting in protons, electrons, and other principles of atoms. Principles then mark both a difference and an identity. The principles identify a distinc tion, but such identifications differentiate from other identifying principles. The wavelengths for green light are identical at different times of emission from the sun but are not identical with those for red.

#### Vote neg:

#### 1] Precision – if we win definitions the aff is not topical. The resolution is the only predictable stasis point for dividing ground—any deviation justifies the aff arbitrarily jettisoning words in the resolution at their whim which decks negative ground and preparation because the aff is no longer bounded by the resolution.

#### 2] Predictable limits—specifying appropriations offers huge explosion in the topic since they get permutations of hundreds of appropriations by hundreds of states. This is magnified by the fact that most space programs are nascent so they’re incentivized to specify random countries with no literature. Limits explodes neg prep burden and draws un-reciprocal lines of debate, where the aff is always ahead, turns their pragmatics offense

#### Topicality is a voting issue that should be evaluated through competing interpretations – it tells the negative what they do and do not have to prepare for—there’s no way for the negative to know what constitutes a “reasonable interpretation” when we do prep – reasonability is arbitrary and causes a race to the bottom, proliferating abuse

#### No RVIs—it’s your burden to be topical.

## OFF

### NC – K

#### Their use of an ethical frame of “injustice” presumes a metaphysics of discrete individuals for injustice to be acted by and on – that’s both conceptually incorrect and leads us to egoistic violence

Carpenter 17 Carpenter, Amber, works in ancient Greek and classical Indian philosophy, with a topical focus on the metaphysics, epistemology and moral psychology underpinning Plato’s ethics and Indian Buddhist ethics, taught or held visiting research appointments at the University of York, St Andrews, Cornell, Oxford, the University of Melbourne and Yale University. BA (Yale), PhD (Kings College London). "Ethics without Justice." A Mirror Is for Reflection: Understanding Buddhist Ethics (2017).

This study in the Buddhist claim that we ought to eliminate anger, and the distinctively Buddhist mode of doing so, has shown that the link between injustice and anger presumes a metaphysics. The moral perspective that picks out injustice as a special and additional kind of harm requires a metaphysics of discrete individuals, doing and “being done to” in turn, with a clear distinction between the two. But such a metaphysics and its moral categories engender in turn certain typical modes of thought—in particular, obsessing about Who is to Blame. Particularly in our victim-status-claiming age, we should wonder whether this is especially fruitful—or apt.

The Buddhist cannot show that their view will confirm or conform to all our intuitions about injustice because their basic metaphysical presumptions do not support the centrality of autonomous agency as a distinctive sort of cause, nor the violation of that by such free agents as a distinctive sort of harm. This is not, however, just an oversight or a morally horrifying omission. The proposal of an alternative metaphysics is the proposal of an alternative way of conceiving the moral. For every exercise in appreciating what no-self means, and what its implications are, is simultaneously an exercise in detachment, in recognizing the impulse to blame and resent as harmful assertions of oneself over and against others. Removing the conceptual structures for righteous indignation strips our evaluations of situations and persons of its self-assertiveness. Rather than being enervating, or blinding us to what moral responsiveness demands, this outlook is resolutely practical. None of this denies the no-self anger-eliminativist the resources necessary for forensics: we can see that some sets of conditions have intentions among them, and we can recognize that under some circumstances, these are more effectively engaged with in modes that differ from how we would engage with a forest fire.30 To regard someone’s raging violence as a forest fire does not mean that we turn the fire hose on it; it means that we consider the enabling conditions and defeating conditions and seek to eliminate the one and enhance the other.31

At the same time, as no-self introduces fluidity into our practices of individuation, it presents us with the entangled mutual causation of all factors and the simultaneous suffering. To see no-self, Buddhist-wise, just is to see that everything is conditioned and conditioning. Released from the demands of indignation, we are left with the only attitude that is appropriate in the face of suffering—a practically oriented care to relieve that suffering. Karuṇā is not an additional feature of a Buddhist outlook or the next thing on the list of dogmata. Care just is the affective and practical recognition of no-self metaphysics. Without discrete individuals to appeal to in any situation—these the perpetrators, these the victims—we have only efficacy in removing suffering as the standard preventing us from nihilism. Where before there were culprits to blame, and myself to exonerate or assert in retaliation, there is now only suffering, for which care to alleviate it is simply what is left when I am no longer distracted by righteous indignation.

#### Delusional egoism collapses the biosphere and produces rampant nationalism – extinction

Loy 17 David R Loy, former Besl Professor of Ethics/Religion and Society at Xavier University, teacher in Sanbo Kyodan Buddhism. M.A. in Asian philosophy from the University of Hawaii in 1975, and Ph.D. in philosophy in 1984 from the National University of Singapore. “Are Humans Special?” Tikkun, Vol. 32, No. 1, Winter 2017, <http://www.davidloy.org/downloads/Loy%20Are%20Humans%20Special.pdf>.

One uniquely human characteristic, emphasized by Buddhism, is that we can develop the ability to “dis-identify” from anything and everything, letting go not only of the individual sense of separate self but also of collective selves: dissociating from dualisms such as patriarchy, nationalism, racism, even species-ism (“we’re human, not lower animals”). Meditation develops such nonattachment, yet the point of such letting-go is not to dissociate from everything but to realize our nonduality with everything.

That human beings are the only species (so far as we know) that can know it is a manifestation of the entire cosmos opens up a possibility that may need to be embraced if we are to survive the crises that now confront us. Instead of continuing to exploit the earth’s ecosystems for our own supposed benefit, we can choose to work for the well-being of the whole. That we are not separate from the rest of the biosphere makes the whole earth our body, in effect, which implies not only a sp cial understanding but also a special role in response to that realization. As the Metta Sutta declares: “Let one’s thoughts of boundless love pervade the whole world— above, below, and across — without any obstruction, without any hatred, without any enmity.”

To ask whether the universe itself is objectively meaningful or meaningless is to miss the point— as if the universe were outside us, or simply there without us. When we do not erase ourselves from the picture, we can see that we are meaning- makers, the beings by which the universe introduces a new scale of significance and value.

The Responsibility of Being Special

If we are special because of our potential, we must choose. We are free to derive the meaning of our lives from delusions about who we are—from dysfunctional stories about what the world is and how we fit into it—or we can derive that meaning from insight into our nonduality with the rest of the world. In either case, there are consequences.

The problem with basing one’s life on delusions is that the consequences are unlikely to be good. As well as producing poetry and cathedrals, our creativity has recently found expression in world wars, genocides, and weapons of mass destruction, to mention a few disagreeable examples. We are in the early stages of an ecological crisis that threatens the natural and cultural legacy of future generations, including a mass extinction event that may lead to the disappearance of half the earth’s plant and animal species within a century, according to E. O. Wilson—an extinction event that may include ourselves.

What needs to be done so that our extraordinary co-creative powers will promote collective well-being (collective in this case referring to all the ecosystems of the biosphere)? Must we evolve further—not biologically but culturally—in order to survive at all? From a Buddhist perspective our unethical tendencies ultimately derive from a misapprehension: the delusion of a self that is separate from others, a big mistake for a species whose well-being is not separate from the well-being of other species. Insofar as we are ignorant of our true nature, individual and collective self-preoccupation naturally motivates us to be selfish. Without the compassion that arises when we feel empathy—not only with other humans, but with the whole of the biosphere—it is likely that civilization as we know it will not survive many more generations.

In either case, we seem fated to be special. If we continue to devastate the rest of the biosphere, we are arguably the worst species on earth: a cancer of the biosphere. If, however, humanity can wake up to become its collective bodhisattva—undertaking the long-term task of repairing the rupture between us and Mother Earth—perhaps we as a species will fulfill the unique potential of precious human life.

#### Planetary interdependence uniquely extends into space – the alternative is a shift away from individuation towards a politics of care that recognizes our mutual interdependence

Gál 20 Réka Gál, PhD student at the Faculty of Information and a Fellow at the McLuhan Centre for Culture and Technology, work unites feminist media theory and postcolonial studies with the history of science and environmental studies and explores how technological tools and scientific methods are employed to purportedly solve socio-political problems. B.A American and Media Studies, Humboldt Universität zu Berlin, M.A Cultural Studies, Humboldt Universität zu Berlin. "Climate Change, COVID-19, and the Space Cabin: A Politics of Care in the Shadow of Space Colonization." mezosfera.org, Oct, 2020, mezosfera.org/climate-change-covid-19-and-the-space-cabin-a-politics-of-care-in-the-shadow-of-space-colonization.

As much as dominant cultural narratives encourage us to entertain the idea that humans stand separate from and above their environments, the planetary crises of climate change and COVID-19 are painful reminders of the ways in which human and nonhuman ecologies are perpetually entangled. It is well-known that industrialized human-nonhuman relations, based on the capitalist extraction of what are considered natural resources, stand at the root of numerous environmental problems that are contributing to climate change. Animal industries – specifically the livestock industry – are one of the largest contributors to deforestation, greenhouse gas emission, and species extinctions.17 COVID-19’s believed origins in the Huanan wild animal markets and its eventual spread to humans is further testament to the ways in which our ecologies are always inseparable, with their intertwined nature here manifesting violently towards humans. Moreover, the spread of the coronavirus lays bare how local exploitation of nature can have global repercussions: the wildlife industry in China exists to this day because wildlife is considered a natural resource owned by the state, and the breeding, domestication, and trading of wildlife is encouraged by law.18

What must be made clear to those who are entertaining the idea that space habitats could provide a solution to such crises is that leaving Earth does not render these entanglements null and void. As much as spacecraft have been positioned as examples of subordinating the rules of nature to human control, their material reality only further consolidates the reciprocity of human and nonhuman, including human-machine, relations. 19 Our dependence on our surroundings intensifies in outer space. The inhospitality of space makes even the most physically fit astronauts dependent on numerous life support systems: oxygen and food supplies, waste management, and humidity control are all technologically operated but require continuous maintenance by humans. As such, ensuring the normal operation of a spacecraft is a relevant analogy for how a relationship of care with the diverse life support systems on Earth could be established.20

However, governments and private companies have been selling people the dream of human spaceflight ever since the Cold War, and the origins of this project in a military enterprise have made a significant mark on its implications for care work. The world of the 1960-70s astronauts was extremely segregated: the popular narrative was that of the hypermasculine astronaut, able to cope with danger and pain without complaint, with a brave wife at home waiting for his return.21 This segregation has had a remarkable impact on the types of work which have been considered “worthy” of these hypermasculine astronauts. In fact, the first American to travel to space, Alan Shepard, explicitly objected to having to learn maintenance techniques. As historian David Mindell put it, “the hottest test pilots didn’t want to be repairmen in space.”22 Similarly, data collected from NASA’s Skylab and the International Space Station’s 4-8 expeditions reveal that the time needed to complete maintenance activities on the Environmental Control and Life Support Systems was vastly underestimated, and in some cases even completely left out of operations plans.23 Even as late as the 2000s, the gendered view of care activities aboard spacecraft persisted: regarding the first female commander of a Space Shuttle, Eileen Collins, NASA made sure that her public persona was level-headed but also “pleasing.” She was referred to as “nice.” She took care of her fellow astronauts on board, taking on emotional labor by “providing support in ways that ease[d] the long hours and tension of training.” Her Air Force nickname was Mom.24

When this article calls for a feminist critique of outer space colonization, the argument is not that banishing technology and returning to a “pristine” nature or some other type of utopian primitivism is going to solve our planetary crises. Nor is it the point that more women need to be hired. What is being critiqued here is what Debbie Chachra has pointed out as a masculinist-capitalist obsession with progress and technological innovation that casts all maintenance, repair, and care work as inferior to creation.25 Much as our current experience of physical isolation during COVID-19 has exhibited, only during breakdowns are such taken-for-granted services made visible anew.26 The privileging of production obscures the societal understanding of the very real relationality of living, and the ongoing care and maintenance work required to keep human life running smoothly both on Earth and in outer space.

Therefore, the problem with extraplanetary colonization is not solely that this escape reinforces an enduring gendered opposition between exit and care, privileging the former over the latter, but also that machines only give the illusion of providing humans with independence from care work. Orsolya Ferencz, the Hungarian Secretary of Space Affairs, claims that Hungarian machines in outer space do not break down27 but the truth is that machines, just like our “natural” environments, do repeatedly break down. They require maintenance. Humans whose lives are intimately intertwined with technology are all too aware of this. Social scientist Laura Forlano writes about her experience as a diabetic who uses various technologies to monitor and maintain her blood glucose levels: “With respect to my insulin pump and glucose monitor, often, I am not really sure whether I am taking care of them, or they are taking care of me.”28 This interdependence additionally applies to the care for “natural” environments which can be regularly observed, for example, in the relationship of Indigenous communities to the environment. In the Hā’ena community in Hawaii, for instance, not only do they always return some of the fish caught to the water as a way of thanking the ocean, but they also managed to impose a ten-year fishing moratorium around their island in 2019, which will both help the renewal of the ecosystem and the recovery of the immediate environment, allowing future generations to fish sustainably.29 With this moratorium, the Hā’ena are providing care-based, restorative justice: the ocean ecosystem has fallen victim to injustice (overfishing), and remedying this ought to help heal the party wounded by the injustice, which is in this case the ocean.30

The extractive industry practices deeply embedded within Western social systems clearly propel us toward unsustainable development. Escaping Earth will not solve these problems. Rather, the solution requires a fundamental onto-epistemological shift, one that will enable us to move away from the exploitative Western-colonialist worldview and towards one that prioritizes care and sustainability. The works of feminist and Indigenous thinkers can inspire us to imagine and understand such a worldview. Numerous pre-colonial Indigenous cultures were sustainability-centric: the acceptance of the reciprocity between humans and their environment and the enforcing of the ethics of care in all areas of life were essential parts of several nations’ worldviews. Indigenous epistemologies see humans and nature as members of an ecological family in which humans, the nonhuman beings around them (for example, badgers, antelopes) and materials (for example, water, clay) all form part of their kinship structures.31 In Indigenous cultures that have survived colonization, such teachings and ethical approaches are passed down to this day.32 Research by Potawatomi scholar Kyle P. Whyte and Chris Cuomo demonstrate that Indigenous conceptions of care emphasize the importance of recognizing that humans, nonhumans (animals) and collectives (e.g. forests) exist in networks of interdependence. Indigenous care ethics manifest also in the fact that mutual responsibility is seen as the moral basis of relationships.33 An important part of this mutual responsibility is that care-based justice is not punishment-centered but recovery-centered: as in the example of the fishing moratorium of the Hā’ena, it seeks to promote restorative justice for those wounded by injustice. This restoration is aimed not only at people and communities, but also at nature.34 Similarly, an ethics of care in feminist philosophy treats the state of interdependence of human and nonhuman beings as a moral foundation.35

Since all infrastructures break, they require continuous maintenance. Information scientist Steven Jackson therefore proposes that the starting point to our thinking on the human relationship to technology has to be a contemplation of “erosion, breakdown, and decay, rather than novelty, growth, and progress.”36 If we accept that our world is “always-almost-falling-apart,”37 then instead of simply focusing on technological innovation as the vessel of our salvation,38 we need to look at the ways in which the world is constantly fixed, cared for, and maintained. This, of course, does not only translate to humans’ relationship to machines, but also to our relationship to our environment –in fact, feminist scholars have already made this point about dealing with our environmental problems: historian of science Donna Haraway’s concept of “staying with the trouble”39 explicitly pleads for the foregrounding of the inherent interconnectedness and interdependence of living, and for working on restoring our broken systems. What we are looking at here is a promising paradigm shift in human-machine and human-nature relations that promotes the recognition that the processes of care and maintenance are foundational to the way humanity relates to our biotic and abiotic environments.40

Both life during the social isolation of COVID-19 and life in the space cabin highlight our perpetual interdependence with our environments. Our life support systems are in a state of continuous decay, but the solution to this is not building more and more invasive risk-mitigation machines based on individualization, isolation and an imperative of absolute, one-directional control. Instead, a better, safer, more sustainable future starts with acknowledging one’s place in a web of interdependent relationships.41 Among other steps, this means that instead of acting as though our biotic and abiotic infrastructures can endlessly care for us, we need to care for them in return. This entails not only planting new forests and cleaning up shorelines, but also policy decisions such as the fishing moratorium mentioned above. As anthropologist Gökçe Günel indicates, even the technologies used for the harvesting of renewable energies require maintenance: solar panels, for example, need to be wiped clean of dust and sand regularly.42 Thinking through the lens of maintenance and care also means providing infrastructures for effectively repairing machines as opposed to producing e-waste and continuously buying new ones which are thrown away once a smarter version is released. Additionally, it means respecting and paying theworkers who are cleaning our hospitals, nursing our sick and harvesting food – most of them immigrants, predominantly women43 – better, as they are the reason we have clean hospitals, transport, and food on our tables, even during a global pandemic.44

## OFF

### NC – CP

#### Ukraine ought to create significant subsidies for private entities to create terrestrially accessible blockchain verification computing centers and cryptocurrency mining centers on the Moon and Deep Space. Ukraine should restrict all other forms of appropriation of outer space by private entities.

#### Bans means to prohibit or forbid permanently

Collings ND https://www.collinsdictionary.com/us/dictionary/english/ban

ban

(bæn)

Word forms: bans, banning, banned

1. TRANSITIVE VERB

To ban something means to state officially that it must not be done, shown, or used.

Canada will ban smoking in all offices later this year.

Last year arms sales were banned.

Synonyms: prohibit, black, bar, block More Synonyms of ban

#### Climate-motivated terrestrial mining regulations kill crypto now – those don’t get applied to space because of unique environments – that saves crypto with sufficient private investment

Greene 21 Greene, Tristan. Tristan covers human-centric artificial intelligence advances, quantum computing, STEM, Spiderman, physics, and space stuff. As far as I can tell his highest level of education was that he was in the Navy for a while. "What happens to Bitcoin when billionaires build cryptocurrency miners on the Moon?" TNW | Hardfork, 8 June 2021, thenextweb.com/news/bitcoin-billionaires-build-cryptocurrency-miners-on-moon-bitcoin.

Space exploration and exploitation have traditionally been nationalist endeavors. But the rise of the 12-digit billionaire has suddenly made outer space look like open territory. The players Jeff Bezos is stepping down from his position as the CEO of Amazon after 25 years ahead of his imminent launch into space aboard one of his own Blue Origin spaceships. This will be the future of fintech 6 trends that will dominate fintech in 2022 While it’s easy to imagine the long-time leader retiring to live out a childhood fantasy, there’s nothing in Bezos’ history as an incredibly ambitious person and businessman to indicate his he’ll just blast off into the sunset to live a life of quiet leisure. Simply put, Bezos’ interest in the space sector likely won’t end with offering consumer thrill rides. While it’s impossible to know where the soon-to-be-former CEO might take his ambition, it’s likely Amazon and/or Blue Origin is already looking for ways to exploit the space sector for profit. But, obviously, Bezos isn’t the only private citizen with a spaceship company. Elon Musk’s SpaceX has spent the last decade becoming the belle of NASA’s ball and he’s already all-in on the idea of sending humans to Mars. And we can’t forget Richard Branson. He may only be worth a paltry $5 billion (lol), but his Virgin Galactic company’s been banking on making some money in space tourism for a long time. Let’s also not forget that Virgin’s dabbled in everything from railroad technology to record labels. And the list goes on. Anyone with a few billion dollars has business options and opportunities that extend beyond our planet’s surface. Space for profit In the past, we’ve discussed the idea of mining space asteroids for profit. Some experts believe there are unimaginable fortunes floating around in space in the form of resource-rich asteroids. In fact, you can even get a degree in asteroid mining. And even Goldman Sachs has considered getting in on the action. But, at the end of the day, we still have to figure out where these resources are, build machines capable of extracting them, and get them safely to somewhere they can be useful. Right now, there’s not much value in investing in asteroid mining futures because the technology either doesn’t exist or isn’t ready yet. However, there’s more than one kind of mining you can do in space. Enter cryptocurrency and the future Elon Musk recently got involved in a friendly space race, but this time it has nothing to do with competition over rockets or government contracts. He’s racing against BitMEX, a cryptocurrency exchange and derivative platform, to see who can get a cryptocurrency on the Moon first. If you’re curious about how that works, here’s a snippet from BitMEX’s official announcement: BitMEX will mint a one-of-a-kind physical bitcoin, similar to the Casascius coins of 2013, which will be delivered to the Moon by Astrobotic. The coin will hold one bitcoin at an address to be publicly released, underneath a tamper-evident hologram covering. The coin will proudly display the BitMEX name, the mission name, the date it was minted and the bitcoin price at the time of minting. According to BitMEX, this isn’t just a ceremonial or token delivery. The coin itself is a hardware wallet containing an actual Bitcoin, so its value will change with the value of the BTC here on Earth. In other words, BitMEX is sending a literal treasure to the Moon for anyone brave (or rich) enough to retrieve it. Per the company’s blog post: A moon surface background with text superimposed, quote below Credit: BitMEX Come and Get It. When the physical coin lands, it will remain on the Moon until anyone deems it worthy of retrieval. Decades from now, what will it be worth? It’s a great question. Some experts have predicted a single bitcoin will one day be worth $100K, $1M, or even more. But an even better question is this: What’s the end game for cryptocurrency in space? Billionaires want to be trillionaires Back in 1999 Wired ran a feature about the imminent rise of the world’s first trillionaire. At the time, everyone assumed the richest man in the world, Microsoft CEO Bill Gates, would be the first trillionaire by a long shot. Here’s a quote from that article: The value of Bill’s Microsoft stake has grown from $233.9 million at the time of Microsoft’s 1986 IPO to $72.2 billion as of June 15, 1999 (disregarding stock sales). At this rate – 58.2 percent a year – he will become a trillionaire in March 2005, at age 49, and his Microsoft holdings will be valued at $1 quadrillion in March 2020, when he is 64. Of course, we still haven’t seen a trillionaire in modern history. As of the time of this writing, the richest person in the world is France’s Bernard Arnault, whose $193.6 billion empire edges out Jeff Bezos’ $189 billion. At some point, if Bezos wants to pull away with it or Elon Musk wants to close the widening gap between his $151.4 billion and a first place finish, the world’s richest people are going to have to do more than squeeze terrestrial markets for every last drop of profit. That’s why many experts view Elon Musk’s heavy involvement in cryptocurrency as the potential difference maker. On any given day the Tesla, SpaceX, and Neuralink founder’s total worth can skyrocket or plummet by tens of billions of dollars based on how his cryptocurrency holdings are performing. When you consider that market movements can be directly tied to Musk’s social media statements, the power proposition for billionaires holding cryptocurrency is unbridled. Simply put: Elon Musk has more control over the so-called “volatile” world of cryptocurrency than most. Putting a cryptocurrency in space, much like firing a Tesla off into the galaxy, is a PR move meant to generate interest in the burgeoning cryptomarket. But that’s not the only purpose they serve. These acts remind us that people like Musk and Bezos can do anything they want. If they want to put a coin on the Moon, they have the means to do it. And, for example, if Musk or Bezos suddenly wanted to solve the biggest problems with cryptocurrency mining – power consumption, carbon footprint, developing powerful-enough hardware – they’re in a unique position to do so. In space, no one can hear you mine Arguably, one of the biggest things stopping an apex whale like Elon Musk from spending a fair portion of his billions on cryptomining centers is the fact that such an operation would almost certainly draw universal condemnation for its potential effect on the global climate crisis. But the Moon’s atmosphere isn’t necessarily as fragile as the Earth’s. Hypothetically speaking, there’s nothing to stop a billionaire from building a facility on the Moon to mine cryptocurrency. They would, of course, need to be able to build their own batteries, have experience with artificial intelligence and supercomputers, and already have their own satellite network set up in space – all boxes Elon Musk can tick today. And, in the near-future, as we perfect deep space transmission technology, what’s to stop a billionaire from putting a supercomputer on a satellite and sending it somewhere in deep space to mine cryptocurrency 24/7 at near absolute-zero temperatures? All of this is conjecture, but the writing is on the wall. Cryptocurrency enthusiasts fear what the experts are consistently warning: regulation is coming. Eventually, it’s possible cryptocurrency mining could become regulated with harsh policies designed to keep mining operations from further damaging the environment. This could seriously hinder the market. If humanity walks away from terrestrial mining to save the planet, we’ll be leaving unfathomable amounts of money on table. Billionaires don’t become billionaires by doing that. The only logical path forward, barring some unknown new green mining technology, may be moving the cryptocurrency industry to space.

#### Cryptocurrency reach a wide rollout---that builds resilience to survive inevitable existential filters.

Alex McShane 21, Writer and Head of Video for Bitcoin Magazine, BA from the University of Iowa, Degree from the University College Dublin, Degree from Kirkwood Community College, “Bitcoin and Existential Risk”, Bitcoin Magazine, 9/5/2021, https://bitcoinmagazine.com/culture/bitcoin-and-existential-risk-alex-mcshane

TL;DR - An existential risk is the possibility of an event or series of events that could drastically curtail humanity’s potential. A hypothetical global catastrophe could be anthropogenic or non-anthropogenic and internal or external in nature. The adoption of Bitcoin will better position us to address these risks as a society.

EXTERNAL NON-ANTHROPOGENIC

A catastrophic collision with an astronomical object, such as an asteroid impact would be an external non-anthropogenic risk. This has already occurred here several times. During the Permian Triassic period (ending 250 million years ago) an astronomical impact killed 90 percent of the species on Earth. It took tens of millions of years for life on Earth to repopulate and Earth’s intelligence potential to recover.

One interesting external non-anthropogenic risk is Earth’s reflected light, which could be measured by an external intelligence who then come to extinguish us. (The topic of our own signal bringing about this death by misadventure is discussed further below.)

What does this have to do with Bitcoin?

Generally, hard money facilitates greater innovation and technological process. At this point one might argue that if we do not migrate to some degree from Earth as a species, and are subsequently wiped out by an astronomical object impact or a super-volcanic event, the risk becomes anthropogenic in nature. We are a centralized species on a grand scale, and at this point one could say we have through consensus chosen to remain vulnerable to a single vector of attack by staying here.

Bitcoin is not only the hardest money known to man, it is the most responsible from this standpoint. Bitcoin as it currently operates is currency that can provide a monetary framework on which humans can achieve greater capital growth, collaboration, resource allocation, and therefore technological progress. Because the terminal supply of Bitcoin is capped, we can store value in it indefinitely as a society.

66 Million years ago the Cretaceous-Paleogene Extinction Event extinguished the life and intelligence potential of the non-avian dinosaurs. This series of events was external, and broadly non-anthropogenic in the sense that no form of life on Earth at the time contributed to its own demise, but more specifically, at the time of those astronomical impacts the first humans hadn’t split from chimpanzee lineages. This split is thought to have occurred between between 4 and 8 million years ago.

An important distinction between astronomical impacts or super-volcanic events of the past and such events if they were to happen today is that one could argue that our intelligence potential is now mature enough to tackle certain of the external existential risks. Today, the risk posed by an asteroid impact or something similar would still be external in its origin, but at what point does the burden of responsibility to migrate off of the planet fall upon our population? We can surely solve for some external existential risks, and in any case, no one is going to do it for us. You could say that failing to collectively pursue a solution when technically we could have would recategorize a civilization-extinguishing asteroid impact as an external but anthropogenic risk.

At what point do innovation dampening authoritarian states and their mandated broken money cause society to stall at a local optimum? Surely the government has already caused this. It’s only a matter of time before another object strikes the Earth with devastating consequence. I would argue it is irresponsible to continue life here with government money. Government money is an existential risk. Bitcoin is not only a solution, it is a societal responsibility.

INTERNAL ANTHROPOGENIC

Nuclear war is one example of an internal anthropogenic risk. That is, should nuclear war arise, it would be both self destructive, and relatively self contained on a cosmic scale. It follows that biological warfare is an internal anthropogenic risk, the reality of which we as a species can surely understand now. If I were to hazard a guess I would say virtual emergencies and cyber pandemics are next. These self constructed catastrophes are the government’s misguided attempts at proof of work. This is a topic for another time. Do not surrender your ability to think and speak freely.

The second law of thermodynamics can summed thus, processes that involve the transfer or conversion of heat energy are irreversible. The law indicates we have not observed a spontaneous transfer of energy from cold to hot. Another way to think of this is that there is no such thing as cold, only lesser degrees of hot. Nothing cannot transfer. So broadly, within a closed system, the second law of thermodynamics would indicate that all differences tend to level out.

So what has this got to do with Bitcoin?

Well firstly, all hardware is subject to entropy. The distributed nature of the blockchain increases the probability that it will survive centralized entropy. At Bitcoin’s inception, imagine a failure because Satoshi’s computer randomly crashed. Distributed networks are inherently hedged against this particular centralized form of existential risk.

The second law of thermodynamics also suggests that on a grander scale, relatively isolated (centralized) systems will degenerate more and more into disordered states. Proof of work, and network growth are two ways Bitcoin fights against falling into disrepair.

Bitcoin uses proof of work to stave off entropy. The system cannot stay dormant. It must continue to use proof of work to advance the state of the chain, and to fight entropy to secure the monetary value all of the users have stored in the network. The U.S. dollar, as many have pointed out, relies on proof of war, or distributed political energies to maintain dominance. Its methodology can be described as haphazard at best.

INTERNAL NON-ANTHROPOGENIC

One internal non-anthropogenic risk is that of a super-volcanic eruption, provided it wasn’t humans who brought about the eruption. Just like with external non-anthropogenic risks, Bitcoin alone cannot prevent them, but it can help humans prepare for them such that we may survive these relatively small intelligence filters the universe throws our way.

Bitcoin allows for fundamental capital accumulation and human innovation, and promotes collaboration to such a degree that we will find an increased collective problem solving power as humans the further Bitcoin adoption spreads. It is worth mentioning that Bitcoin also maintains and appreciates wealth to such a degree that often those of us to chose to live our lives on a Bitcoin standard will experience relatively greater freedoms, and vastly greater amounts of free time than our peers who chose to continue their lives on a fiat standard, and are perpetually working to outpace their chronic debt. Many Bitcoiners will likely forego that newfound free time to work and continue to provide value to others in whatever area interests them, because Bitcoin incentivizes the collaborative accumulation of capital but also the responsible reallocation of it.

EXTERNAL ANTHROPOGENIC

An external anthropogenic risk has the least probability of occurring. This is a problem of reach. Imagine human intelligence being sent into the cosmos and signaling or generally causing an external intelligence or astronomical object to come back to extinguish us. This is a most improbable extinction by misadventure.

The probability that we send messages of consequence into the cosmos that in turn cause some other far-flung intelligence, with knowledge enough to reach us, to come and bring about our own destruction is next to zero, but it isn’t zero.

I would posit that the probability increases every day that Bitcoin survives, with each person that chooses to hold Bitcoin over fiat, because on a fiat standard we are again, stuck at a local optimum at best, and each day the global monetary system devolves further into chaos. The fiat world may continue to be habitable chaos, but our technological progress and our greatest capacity for innovation cannot be achieved on a fiat standard.

A Bitcoin standard is not only our current best bet, it is the only monetary vehicle that will take us from here, or enable us to build technology that can effectively communicate with places in the universe where other intelligence has emerged. The other reason this fatal miscommunication is unlikely to occur is that once through a Bitcoin standard we have manage to build a society that can effectively reach and communicate at greater depths of the cosmos we will at that time have already become a multi-planetary, if not transitory, if not multi-solar system species. The topic of Bitcoin in space and planetary interoperability will be discussed in a later essay.

The most distant human made object from the earth is the Voyager 1, which is over 13 billion miles away. (For perspective, Apha Centuri, the nearest star system to Earth, is 25 trillion miles away.) Human radio signals have announced our presence and our intelligence to the cosmos since around 1900. The first human radio signals have all ready traveled 114 light years, that is 681,920,540,000,000 miles. Although the reach of our radio signals is very great, the probability of us being heard and subsequently extinguished is negligible. External anthropogenic risks are the least of our concerns at the moment.

As Bitcoin adoption grows, it serves to promote advances in artificial intelligence and nanotechnology. External anthropogenic risks will become more relevant to human intelligence at a much later time. External non-anthropogenic risks are similarly out of our hands for the time being. That is, at the moment there is nothing we can do to prevent the Sun from becoming a red giant star and subsuming the Earth.

But we do already have the monetary technology upon which to engineer solutions to some of these problems. We have the potential as humans to prevent internal global catastrophes, both those set on by us and not. Survival and longevity is arguably our greatest task as a species. Adopting Bitcoin, and protecting this network is proceeding with diligence and a long eye toward the future in all of our political and scientific affairs. The existential risks of living are great, though it is human nature for our ambitions to out pace our current abilities. The only evidence of life is change. To change is to exit fiat currency, it is to use Bitcoin instead.

## OFF

### NC – Guardianship CP

#### Expanding PTD causes recessions and destroys the environment – it shatters the entire legal-regulatory balance

Huffman 15 [James L. Huffman is Dean Emeritus of Lewis & Clark Law School and a Visiting Fellow at the Hoover Institution. He holds degrees from Montana State University (BS), The Fletcher School of Tufts University (MA) and the University of Chicago (JD). "WHY LIBERATING THE PUBLIC TRUST DOCTRINE IS BAD FOR THE PUBLIC." https://law.lclark.edu/live/files/19611-45-2huffman]

Since the beginning of the modern environmental movement in the 1960s, environmental advocates have been in search of ways to circumvent the twin obstacles of political compromise and vested property rights. In a 1970 article, Professor Joseph Sax suggested that the common law public trust doctrine might provide an avenue for judicial intervention in the name of claimed public rights in a wide array of natural resources. Because the traditional doctrine was narrowly limited in terms of both public rights and affected resources, Sax published a second article ten years later, calling for courts to liberate the public trust doctrine from its historical parameters. While a few judges responded with generally limited extensions of the doctrine, Sax’s plea has been ignored by most courts—but not by academics. A flood of law review articles have resorted to shoddy history, retrospective theorizing about the origins and purposes of the doctrine, appeals to higher law and moral imperatives, and confusion of the idea of public trust in representative government with the public rights protected by the public trust doctrine in efforts to persuade courts to liberate the doctrine. Implicit, if not explicit, in all of these arguments is the claim that the common law origins of American law and the American judicial system vest courts with authority to amend old law and make new law. At risk in this vast and imaginative effort to liberate the public trust doctrine from its common law confines are the constitutional separation of powers, the rule of law, due process and secure property rights, and the economic prosperity on which environmental protection ultimately depends.

#### Failed recovery causes global crises and extinction

McClennan ’21 [Marsh, writing with the SK and Zurich Insurance Groups; 2021; Global Professional Services firm, advised by the National University of Singapore, the Oxford Martin School at Oxford University, Wharton Risk Management and Decision Processes Center at the University of Pennsylvania; World Economic Forum, “The Global Risks Report 2021,” <https://www3.weforum.org/docs/WEF_The_Global_Risks_Report_2021.pdf>]

Executive Summary

The immediate human and economic cost of COVID-19 is severe. It threatens to scale back years of progress on reducing poverty and inequality and to further weaken social cohesion and global cooperation. Job losses, a widening digital divide, disrupted social interactions, and abrupt shifts in markets could lead to dire consequences and lost opportunities for large parts of the global population. The ramifications—in the form of social unrest, political fragmentation and geopolitical tensions—will shape the effectiveness of our responses to the other key threats of the next decade: cyberattacks, weapons of mass destruction and, most notably, climate change.

In the Global Risks Report 2021, we share the results of the latest Global Risks Perception Survey (GRPS), followed by analysis of growing social, economic and industrial divisions, their interconnections, and their implications on our ability to resolve major global risks requiring societal cohesion and global cooperation. We conclude the report with proposals for enhancing resilience, drawing from the lessons of the pandemic as well as historical risk analysis. The key findings of the survey and the analysis are included below.

Global risks perceptions

Among the highest likelihood risks of the next ten years are extreme weather, climate action failure and human-led environmental damage; as well as digital power concentration, digital inequality and cybersecurity failure. Among the highest impact risks of the next decade, infectious diseases are in the top spot, followed by climate action failure and other environmental risks; as well as weapons of mass destruction, livelihood crises, debt crises and IT infrastructure breakdown.

When it comes to the time-horizon within which these risks will become a critical threat to the world, the most imminent threats – those that are most likely in the next two years – include employment and livelihood crises, widespread youth disillusionment, digital inequality, economic stagnation, human-made environmental damage, erosion of societal cohesion, and terrorist attacks.

Economic risks feature prominently in the 3-5 year timeframe, including asset bubbles, price instability, commodity shocks and debt crises; followed by geopolitical risks, including interstate relations and conflict, and resource geopolitization. In the 5-10 year horizon, environmental risks such as biodiversity loss, natural resource crises and climate action failure dominate; alongside weapons of mass destruction, adverse effects of technology and collapse of states or multilateral institutions.

Economic fragility and societal divisions are set to increase

Underlying disparities in healthcare, education, financial stability and technology have led the crisis to disproportionately impact certain groups and countries. Not only has COVID-19 caused more than two million deaths at the time of writing, but the economic and long-term health impacts will continue to have devastating consequences. The pandemic’s economic shockwave—working hours equivalent to 495 million jobs were lost in the second quarter of 2020 alone—will immediately increase inequality, but so can an uneven recovery. Only 28 economies are expected to have grown in 2020. Nearly 60% of respondents to the GRPS identified “infectious diseases” and “livelihood crises” as the top short-term threats to the world. Loss of lives and livelihoods will increase the risk of “social cohesion erosion”, also a critical short-term threat identified in the GRPS.

#### Rule of law causes extinction

Feldman ‘8 [Noah; September 28; Professor of Law at Harvard University School of Law; New York Times, “When Judges Make Foreign Policy,” lexis]

Why We Need More Law, More Than Ever

So what do we need the Constitution to do for us now? The answer, I think, is that the Constitution must be read to help us remember that while the war on terror continues, we are also still in the midst of a period of rapid globalization. An enduring lesson of the Bush years is the extreme difficulty and cost of doing things by ourselves. We need to build and rebuild alliances — and law has historically been one of our best tools for doing so. In our present precarious situation, it would be a terrible mistake to abandon our historic position of leadership in the global spread of the rule of law.

Our leadership matters for reasons both universal and national. Seen from the perspective of the world, the fragmentation of power after the cold war creates new dangers of disorder that need to be mitigated by the sense of regularity and predictability that only the rule of law can provide. Terrorists need to be deterred. Failed states need to be brought under the umbrella of international organizations so they can govern themselves. And economic interdependence demands coordination, so that the collapse of one does not become the collapse of all.

From a national perspective, our interest is less in the inherent value of advancing individual rights than in claiming that our allies are obligated to help us by virtue of legal commitments they have made. The Bush administration’s lawyers often insisted that law was a tool of the weak, and that therefore as a strong nation we had no need to engage it. But this notion of “lawfare” as a threat to the United States is based on a misunderstanding of the very essence of how law operates.

Law comes into being and is sustained not because the weak demand it but because it is a tool of the powerful — as it has been for the United States since World War II at least. The reason those with power prefer law to brute force is that it regularizes and legitimates the exercise of authority. It is easier and cheaper to get the compliance of weaker people or states by promising them rules and a fair hearing than by threatening them constantly with force. After all, if those wielding power really objected to the rule of law, they could abolish it, the way dictators and juntas have often done the world over.

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#### SOP decline causes global nuke war

Dr. G. John Ikenberry 15, PhD in Political Science from the University of Chicago, Albert G. Milbank Professor of Politics and International Affairs at Princeton University in the Department of Politics and the Princeton School of Public and International Affairs, “Getting Hegemony Right”, in Korean Attitudes Toward the United States: Changing Dynamics, Ed. Steinberg, p. 17-18

A critical ingredient in stabilizing international relations in a world of radical power disparities is the character of America itself. The United States is indeed a global hegemon, but because of its democratic institutions and political traditions it is--or can be--a relatively benign one. Joseph Nye's arguments on "soft power" of course come to mind here, and there is much to his point. But, in fact, there are other, more significant aspects of the American way in foreign policy that protect the United States from the consequences of its own greatness.

When other major states consider whether to work with the United States or resist it, the fact that it is an open, stable democracy matters. The outside world can see American policymaking at work and can even find opportunities to enter the process and help shape how the overall order operates. Paris, London, Berlin, Moscow, Tokyo and even Beijing--in each of these capitals officials can readily find reasons to conclude that an engagement policy toward the United States will be more effective than balancing against U.S. power.

America in large part stumbled into this open, institutionalized order in the 1940s, as it sought to rebuild the postwar world and to counter Soviet communism. In the late 1940s, in a pre-echo of today's situation, the United States was the world's dominant state--constituting 45 percent of world GNP, leading in military power, technology, finance and industry, and brimming with natural resources. But America nonetheless found itself building world order around stable and binding partnerships. Its calling card was its offer of Cold War security protection. But the intensity of political and economic cooperation between the United States and its partners went well beyond what was necessary to counter the Soviet threat. As the historian Geir Lundestad has observed, the expanding American political order in the half century after World War II was in important respects an "empire by invitation." The remarkable global reach of American postwar hegemony has been at least in part driven by the efforts of European and Asian governments to harness U.S. power, render that power more predictable, and use it to overcome their own regional insecurities. The result has been a vast system of America-centered economic and security partnerships.

Even though the United States looks like a wayward power to many around the world today, it nonetheless has an unusual ability to co-opt and reassure. Three elements matter most in making U.S. power more stable, engaged and restrained. First, America's mature political institutions organized around the rule of law have made it a relatively predictable and cooperative hegemon. The pluralistic and regularized way in which U.S. foreign and security policy is made reduces surprises and allows other states to build long-term, mutually beneficial relations. The governmental separation of powers creates a shared decision-making system that opens up the process and reduces the ability of any one leader to make abrupt or aggressive moves toward other states. An active press and competitive party system also provide a service to outside states by generating information about U.S. policy and determining its seriousness of purpose. The messiness of a democracy can, indeed, frustrate American diplomats and confuse foreign observers. But over the long term, democratic institutions produce more consistent and credible policies--policies that do not reflect the capricious and idiosyncratic whims of an autocrat

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### NC – DA

#### The plan upends local control over ocean zoning—national interests expedite offshore renewables, local opposition prevents it

Ganong 11, (J.D. Candidate at William & Mary Law School, The Slippery Shelf: Ceding the Public Trust to Administrative Ambivalence in Offshore Development, scholarship.law.wm.edu/cgi/viewcontent.cgi?article=1535&context=wmelpr)

Still, the Act garnered praise as a step in the right direction towards more cohesive management of the nation’s sea resources, as called for by a 2003 Pew Ocean Commission report,136 which provides part of a possible solution to allowing adjacent coastal states to command a response to negative impacts of projects in federal waters off their shores.137 The report calls for the federal government to revamp federal ocean laws to better protect ocean resources in the face of increasing ocean development.138 The report noted that “[t]he principal laws to protect our coastal zones, endangered marine mammals, ocean waters, and fisheries were enacted thirty years ago, on a crisis-by-crisis, sector-by-sector basis.”139 The result has rendered chaos for ocean management: “[p]lagued with systemic problems, U.S. ocean governance is in disarray.”140 The current state of affairs prompted the Commission to call for reformation of the federal government’s relationship to ocean resources, with the report noting, “[m]ost importantly, we must treat our oceans as a public trust.”141 The report advocates implementing ocean zoning guided by a National Ocean Policy Act and administered by regional authorities.142 Implementing the Pew Ocean Commission’s recommendations would aggrandize the Massachusetts Ocean Act of 2008 by installing a comprehensive ocean management policy and consequent zoning,143 administered through regional councils.144 While the plan calls for participation from various government officials and a broad range of stakeholders,145 it creates new governmental bodies146 at the expense of bypassing existing governmental zoning structures rooted in the American tradition of local land use governance.147 This is perhaps detrimental to states’ roles as public trust guardians when local governments, who traditionally hold such zoning authority,148 are situated nearest the project and, resultantly, may be best attuned to the negative externalities of offshore projects and most cognizant of the public’s interest in those resources affected by a particular offshore project.149 As discussed below, and as illustrated by the Cape Wind conflict, shifting ocean zoning authority to a new federal agency, even one peppered with local stakeholders, might aggravate existing tensions between offshore development, national policy considerations, and an American tradition of local control. IV. SITING THE POWER AS KEY TO SITING WIND FARMS AND OTHER OFFSHORE PROJECTS Perhaps contributing to the Cape Wind conflict is the dissonance between the presupposition of local land use controls and national policy advancement. The latent tension between local land use control and national policy objectives could be mitigated by a cohesive national oceanic policy and consequent zoning, as suggested by the Pew Commission report.150 A national ocean policy that heeds the traditional structure of American zoning governance may both chill paralyzing conflict and elevate discourse regarding appropriate offshore development.151 The concept of local control over what space is used for what purpose has deep-seated origins in local governance: as Rosenberg suggests, “[t]he practice of state and local government supremacy over direct land utilization has strong support in American concepts of federalism and enacting federal preemption would interfere with traditional land use control authority and would likely be very politically unpopular in many parts of the United States.”152 Clearly, the Cape Wind project has illustrated how unpopular removing local control from significant development can be.153 Perhaps the resistance to surrendering local control comes with good reason. Zoning powers were delegated to states, which in turn delegated such powers to municipalities and counties,154 due to federalism’s assumption that decision-making should occur at the most local level with capacity to solve the problem at issue.155 Whether local governments have the “capacity” to exhaustively analyze the impacts of an offshore wind farm might be arguable given that their perspective is often limited to localized concerns156 at the expense of broader concerns, like a national interest in encouraging renewable energy generation.157

#### Local PTD obstructs offshore wind now – increasing federal power over-rides this because of vast energy benefits – OSW undermines ocean biodiversity

Ganong 11, (J.D. Candidate at William & Mary Law School, The Slippery Shelf: Ceding the Public Trust to Administrative Ambivalence in Offshore Development, scholarship.law.wm.edu/cgi/viewcontent.cgi?article=1535&context=wmelpr)

While these concerns are valid,161 the same rationale for seating decision-making power closest to those it affects would seem to suggest that communities can capably assess the particular project impacts affecting their shores, navigable waterways, and citizens, thereby supporting the assertion that local governments should have some command of how spaces surrounding them are used. For instance, local communities have staged complaints that radiation from wind turbines could pollute the water and that turbine supports could attract jellyfish populations that would cause a corresponding decrease in fish, thereby affecting local fishermen.162 Without local fishermen to raise these concerns impacting their livelihood, this negative impact, however small, to the biodiversity of the proposed project site might not be so zealously emphasized. Also, corollary to the proposition that community oversight of project impacts leads to parochial decision-making163 is that state and federal agencies may not make decisions in the best interests of individual communities in an effort to achieve broader policy goals. This is especially true when federal and state alternatives to local decision-making stand to receive significant revenues from the proposed projects. This is the case in the Cape Wind project, where a twenty-eight year lease for operating offshore wind turbines will generate $88,278 in annual federally assessed fees, more when the project becomes operational, twenty-seven percent of which will go to the Massachusetts commonwealth.164 In times of shrinking public budgets, such inducements might sway policy makers, even inadvertently, towards project approval while understating negative project impacts.165 Because those closest to the project may best be able to articulate negative policy impacts,166 local governments should play an active role in articulating negative externalities from offshore development projects as part of a state’s fulfillment of its role as guardian of the public trust. While local governments should play an active role by guiding development of projects in federal waters, national policy goals could be too easily thwarted if local communities, or even states, held veto power for offshore projects marginally impacting their shores, despite the fact that such projects promise renewable energy benefits to a much larger segment of the population than resides within their town lines.167 While understanding the Alliance dissent’s warning against polarizing the stewardship of ocean resources with furtherance of national energy policy goals,168 it is important to note that the public trust doctrine should not be commandeered in the name of many to serve the private desires of a few,169 a charge Cape Wind project opponents have encountered in their opposition to the project.170 Yet in cases where competing values stake a claim to public trust doctrine arguments, such policy tensions are perhaps best left to resolution by the people, to whom powers are reserved by the Constitution’s Ninth and Tenth Amendments.171 Resolving these overarching policy conflicts could well be done through a comprehensive revamping of ocean legislation as suggested by the Pew Commission172 and as recommended by the U.S. Commission on Ocean Policy.173 Given the need for federal policy to establish a comprehensive offshore wind power regulatory scheme,174 the siting of offshore projects located in federal territorial waters should well be the prerogative of federal administrative agencies.175 Yet, to best resolve the tension between the benefits and tradition of local oversight and the need for efficacy in implementing a comprehensive national policy,176 heed should be given to the state’s role in enforcing the public trust doctrine177 and, consequently, to negative externalities flagged by those trustees of the public trust as provided for by statutes like the Massachusetts Ocean Act of 2008.178 To achieve this framework of complete federal jurisdiction concordant with the state’s public trust role, Congress can act on the U.S. Commission on Ocean Policy’s recommendation to strengthen partnerships with nonfederal agencies, particularly states, to manage off shore development.179 How to do this raises another discussion.

#### Their solvency author explicitly flags oceans as an area where the doctrine would be applied

Babcock 19 [H., general counsel to the National Audubon Society from 1987-91 and as deputy general counsel and Director of Audubon’s Public Lands and Water Program from 1981-87. Previously, she was a partner with Blum, Nash & Railsback, where she focused on energy and environmental issues, and an associate at LeBoeuf, Lamb, Leiby & MacRae where she represented utilities in the nuclear licensing process. From 1977-79, she served as a Deputy Assistant Secretary of Energy and Minerals in the U.S. Department of the Interior. Professor Babcock has taught environmental and natural resources law as a visiting professor at Pace University Law School and as an adjunct at the University of Pennsylvania, Yale, Catholic University, and Antioch law schools. Professor Babcock was a member of the Standing Committee on Environmental Law of the American Bar Association 2019. THE PUBLIC TRUST DOCTRINE, OUTER SPACE, AND THE GLOBAL COMMONS: TIME TO CALL HOME ET. [online] Lawreview.syr.edu. p. 234-35 Available at: <https://lawreview.syr.edu/wp-content/uploads/2019/09/H-Babcock-Article-Final-Document-v2.pdf#page=67>]

The 1959 Antarctic Treaty343 established “the foundation for international space law.”344 Like outer space, Antarctica and the oceans “presented a dilemma regarding habitation and defense. No nation occupied these territories and no nation desired a ‘race to own’ without a guarantee of who would emerge victorious.”345 Both the Antarctic Treaty and the Deep Seabed Hard Mineral Resources Act (the “Deep Seabed Act”)346 eschewed the concept of private property as well as the rights of first possession, in part, because the riches of those areas might allow developing nations to share in those riches as opposed to remaining economically marginalized.347 The Deep Seabed Act provides a model for how to regulate activities in a commons, like outer space, which it manages to do without privatizing the marine resource.348 As a result, it is “customary and accepted legal reasoning” to analogize between private ownership rights outside of national sovereignty, like those the Deep Seabed Act granted, and a “land claims recognition law for celestial bodies.”349 “The oceans and Antarctica . . . have much in common with the moon. They can be harsh environments that are difficult to reach to extract minerals [and are resource rich]. They are also designated international areas in which no nation has a sovereign claim.”350 The history of the earth’s oceans is a progression from “the domain of conquering armadas and privateers, when good legal title required as little as arbitrary lines drawn on a map,” to the concept of a “free sea” open to all countries, where no single country could “obstruct the use of that privilege.”351 International space law built on that history of open passage and “free sea.”352 The roots of the idea of granting non-space faring nations right of access can also be found in the 1958 Geneva Convention on the High Seas, which granted “landlocked states the right to sail the oceans by requiring their coastal neighbors to grant free passage over land and through territorial waters.”353 The legal framework of UNCLOS united “a broad spectrum of national and private interests into a shared agreement on the possession and usage of a seemingly borderless area of the global commons,” setting another useful precedent for outer space.354 However, UNCLOS, as a model, is impractical in “the vast reaches of outer space”—space is simply too vast and unlimited.355

**New turbines lead to invasive species – collapse global biodiversity**

**Langhamer 12** – Research Professor @ Norwegian University of Science and Technology

(Olivia, “Artificial Reef Effect in relation to Offshore Renewable Energy Conversion: State of the Art,” The Scientific World Journal, doi: 10.1100/2012/386713)//BB

One mitigating effect of offshore renewable energy on the local biodiversity may occur due to colonization by invasive species. Ever since international shipping started, marine organisms have been distributed all over the world by ballast water or as fouling on boat hulls. This introduction of alien species has dramatic ecological effects, since **it can be a threat to global biodiversity** [52, 53] and lead to local extinctions and fishery collapses [53]. Artificial hard substrates offer habitats for a large number of invasive species normally attached to rocky reefs [54]. In general, artificial structures do not host exactly the same species as a natural hard substrate [55, 56]. The installation of offshore renewable energy parks may not only introduce hard substrata in otherwise sandy-dominated bottoms, but can also provide new habitats for invasive species. Different hydrodynamics, such as more shelter due to new structures may lead to colonization of organisms very different to those on nearby hard substrates and thereby establish and spread nonindigenous species [57]. On wind turbine constructions in the North Sea and in the Baltic Sea the presence of alien species has been recorded [58–60] and may provide stepping-stones for spread, which could facilitate the establishment of the new taxa in the recipient region.

#### BioD loss causes extinction and turns everything

Torres 16 (Phil, founder of the X-Risks Institute, an affiliate scholar at the Institute for Ethics and Emerging Technologies, and the author of The End: What Science and Religion Tell Us About the Apocalypse, "Biodiversity loss: An existential risk comparable to climate change," Bulletin of Atomic Scientists, 4/11, http://thebulletin.org/biodiversity-loss-existential-risk-comparable-climate-change9329)

But there is another existential threat that the Bulletin overlooked in its Doomsday Clock announcement: biodiversity loss. This phenomenon is often identified as one of the many consequences of climate change, and this is of course correct. But biodiversity loss is also a contributing factor behind climate change. For example, deforestation in the Amazon rainforest and elsewhere reduces the amount of carbon dioxide removed from the atmosphere by plants, a natural process that mitigates the effects of climate change. So the causal relation between climate change and biodiversity loss is bidirectional. Furthermore, there are myriad phenomena that are driving biodiversity loss in addition to climate change. Other causes include ecosystem fragmentation, invasive species, pollution, oxygen depletion caused by fertilizers running off into ponds and streams, overfishing, human overpopulation, and overconsumption. All of these phenomena have a direct impact on the health of the biosphere, and all would conceivably persist even if the problem of climate change were somehow immediately solved. Such considerations warrant decoupling biodiversity loss from climate change, because the former has been consistently subsumed by the latter as a mere effect. Biodiversity loss is a distinct environmental crisis with its own unique syndrome of causes, consequences, and solutions—such as restoring habitats, creating protected areas (“biodiversity parks”), and practicing sustainable agriculture. The sixth extinction. The repercussions of biodiversity loss are potentially as severe as those anticipated from climate change, or even a nuclear conflict. For example, according to a 2015 study published in Science Advances, the best available evidence reveals “an exceptionally rapid loss of biodiversity over the last few centuries, indicating that a sixth mass extinction is already under way.” This conclusion holds, even on the most optimistic assumptions about the background rate of species losses and the current rate of vertebrate extinctions. The group classified as “vertebrates” includes mammals, birds, reptiles, fish, and all other creatures with a backbone. The article argues that, using its conservative figures, the average loss of vertebrate species was 100 times higher in the past century relative to the background rate of extinction. (Other scientists have suggested that the current extinction rate could be as much as 10,000 times higher than normal.) As the authors write, “The evidence is incontrovertible that recent extinction rates are unprecedented in human history and highly unusual in Earth’s history.” Perhaps the term “Big Six” should enter the popular lexicon—to add the current extinction to the previous “Big Five,” the last of which wiped out the dinosaurs 66 million years ago. But the concept of biodiversity encompasses more than just the total number of species on the planet. It also refers to the size of different populations of species. With respect to this phenomenon, multiple studies have confirmed that wild populations around the world are dwindling and disappearing at an alarming rate. For example, the 2010 Global Biodiversity Outlook report found that the population of wild vertebrates living in the tropics dropped by 59 percent between 1970 and 2006. The report also found that the population of farmland birds in Europe has dropped by 50 percent since 1980; bird populations in the grasslands of North America declined by almost 40 percent between 1968 and 2003; and the population of birds in North American arid lands has fallen by almost 30 percent since the 1960s. Similarly, 42 percent of all amphibian species (a type of vertebrate that is sometimes called an “ecological indicator”) are undergoing population declines, and 23 percent of all plant species “are estimated to be threatened with extinction.” Other studies have found that some 20 percent of all reptile species, 48 percent of the world’s primates, and 50 percent of freshwater turtles are threatened. Underwater, about 10 percent of all coral reefs are now dead, and another 60 percent are in danger of dying. Consistent with these data, the 2014 Living Planet Report shows that the global population of wild vertebrates dropped by 52 percent in only four decades—from 1970 to 2010. While biologists often avoid projecting historical trends into the future because of the complexity of ecological systems, it’s tempting to extrapolate this figure to, say, the year 2050, which is four decades from 2010. As it happens, a 2006 study published in Science does precisely this: It projects past trends of marine biodiversity loss into the 21st century, concluding that, unless significant changes are made to patterns of human activity, there will be virtually no more wild-caught seafood by 2048. Catastrophic consequences for civilization. The consequences of this rapid pruning of the evolutionary tree of life extend beyond the obvious. There could be surprising effects of biodiversity loss that scientists are unable to fully anticipate in advance. For example, prior research has shown that localized ecosystems can undergo abrupt and irreversible shifts when they reach a tipping point. According to a 2012 paper published in Nature, there are reasons for thinking that we may be approaching a tipping point of this sort in the global ecosystem, beyond which the consequences could be catastrophic for civilization. As the authors write, a planetary-scale transition could precipitate “substantial losses of ecosystem services required to sustain the human population.” An ecosystem service is any ecological process that benefits humanity, such as food production and crop pollination. If the global ecosystem were to cross a tipping point and substantial ecosystem services were lost, the results could be “widespread social unrest, economic instability, and loss of human life.” According to Missouri Botanical Garden ecologist Adam Smith, one of the paper’s co-authors, this could occur in a matter of decades—far more quickly than most of the expected consequences of climate change, yet equally destructive. Biodiversity loss is a “threat multiplier” that, by pushing societies to the brink of collapse, will exacerbate existing conflicts and introduce entirely new struggles between state and non-state actors. Indeed, it could even fuel the rise of terrorism. (After all, climate change has been linked to the emergence of ISIS in Syria, and multiple high-ranking US officials, such as former US Defense Secretary Chuck Hagel and CIA director John Brennan, have affirmed that climate change and terrorism are connected.) The reality is that we are entering the sixth mass extinction in the 3.8-billion-year history of life on Earth, and the impact of this event could be felt by civilization “in as little as three human lifetimes,” as the aforementioned 2012 Nature paper notes. Furthermore, the widespread decline of biological populations could plausibly initiate a dramatic transformation of the global ecosystem on an even faster timescale: perhaps a single human lifetime. The unavoidable conclusion is that biodiversity loss constitutes an existential threat in its own right. As such, it ought to be considered alongside climate change and nuclear weapons as one of the most significant contemporary risks to human prosperity and survival.

## OFF

### NC – T

#### Interpretation: Restrictions on appropriation require bans on use, occupation, or any other means

Babcock 19 Professor of Law, Georgetown University Law Cente. Babcock, Hope M. "The Public Trust Doctrine, Outer Space, and the Global Commons: Time to Call Home ET." Syracuse L. Rev. 69 (2019): 191.

Article II is one of those succeeding provisions that curtails “the freedom of use outlined in Article [I] by declaring that outer space, including the [m]oon and other celestial bodies, is not subject to national appropriation.”147 It flatly prohibits national appropriation of any celestial body in outer space “by means of use or occupation, or by any other means.”148 However, “many types of ‘use’ or ‘exploitation’. . . are inconceivable without appropriation of some degree at least of any materials taken,” like ore or water.149 If this view of Article II’s prohibitory language is correct, then “it is not at all farfetched to say that the OST actually installs a blanket prohibition on many beneficial forms of development.”150 However, the OST only prohibits an appropriation that constitutes a “long-term use and permanent occupation, to the exclusion of all others.”151

#### Violation – aff is a reduction on which companies can use it, not a restriction

#### Bidirectionality

#### Limits

#### C/A reasonability + no rvis

## Case

### Heritage Adv

#### Myers takes out the aff – says that if property rights aren’t granted there will be inevitable conflict.

#### Mining is unsustainable.

Gardenyes 2017 (Distri Josep Gardenyes, Marxist and anarchist writer, "New Technologies, Extraterrestrial Exploitation, And The Future Of Capitalism", It's Going Down, January 28 2017, <https://itsgoingdown.org/new-technologies-extraterrestrial-exploitation-future-capitalism/>, mmv)

2017 is the year of Google’s Lunar X Prize, through which the North American corporation (as important to 21st century capitalism as Ford was to 20th century capitalism) is offering $20 million to the first company that manages to send a landing craft to the moon, drive 500 meters, and transmit high-resolution images back to Earth. But they have to do it this year. And there are already various teams that are getting ready to meet the challenge. One of which is Moon Express, which has already become the first company in history to receive legal permission, from the US government in this case, to carry out commercial exploitations on the moon’s surface. If this team makes it to the moon—and they already have the necessary financing and a schedule of test launches—they won’t only win the Prize, they will also drop off a commercial payload that represents the first step in setting up an equipment delivery service to the moon, which will make the lunar mining of Helium-3 (a valuable fuel for nuclear reactors) feasible. Another company, Planetary Resources, claims that the mining of metals and water on asteroids could be a trillion dollar business. For them, water (and the hydrogen it contains, which could be used as spaceship fuel) is “the oil of space.” These are not empty words. Planetary Resources is another company that has a business plan and the technology needed to begin carrying out the mining it envisions. On the 14th of January, Space X returned to space. It’s one of the companies of Elon Musk (who is also preparing self-driving cars for commercial sale; the technology already works and the only obstacle are the legal regulations), the billionaire whose personal crusade is the colonization of Mars in the next two decades. Space X fixed a design flaw in its rockets and on the 14th made an effective launch, deploying 10 commercial satellites from the same rocket, which, subsequently, returned automatically to Earth, landing on a Space X drone ship waiting—with its entirely robotic crew—in the Pacific Ocean. The autonomous and reusable rockets (one could say, environmentally friendly) are one of the foundations of Musk’s plan for reaching Mars in a commercially feasible way. He has already developed a business plan for developing the technology and acquiring the resources needed to complete the mission. These are not isolated or insignificant companies. And the State is also paying attention to extraterrestrial colonization. The UN Treaty on Outer Space, from 1966, holds that space and space objects cannot be armed or claimed as territory, and that any economic activity had to be peaceful and for the good of all humanity. In 2015, in the Commercial Space Launch Competitiveness Act, the US government clarified the legal question, establishing the legal right of private companies to exploit the moon, asteroids, and other space objects. It gives private entities the right to own and sell resources extracted from space objects, but not to possess the object outright. In effect, they can mine the moon until it’s empty, but the private companies working there with their robotic factories couldn’t be considered the owners. The dotcom boom, which burst in 2000, shows that immense amounts of capital can be invested in companies that do not generate any profits for quite a few years before provoking a crash (in this case, it was six years). In fact, the crash didn’t come until the moment when a few new corporations showed the capacity to become profitable and productive, corporations that today are among the most powerful in the world, like Google, Amazon, and Facebook. We are at the beginning of a phase of massive investment and growth in the new sector of extraterrestrial transport and mining. The venture capitalists of this sector enjoy the advantage that the logistical foundation of their dream (everything connected with the launching of satellites, with their crucial military and commercial uses) is already in place and profitable. Similarly, Columbus didn’t have to invent the long-distance ships or the navigation equipment (which had already been developed by the Portuguese in the luxurious commercial circuits of the Indian Ocean), he just had to take them further. They still have a few years to yield profits with extraterrestrial extraction before the bubble bursts. If they achieve it, capitalism will once again undergo an intense growth and the moment of maximum vulnerability and maximum popular rage that the institutions now face will have passed. Extraterrestrial colonization is no longer a trope of science fiction. But speaking of science fiction, we must also point out the great imaginary production carried out by Hollywood and other centers of cultural work, which have redirected our gaze to the colonization of space. Since the 19th century, there have been occasional works that posed journeys beyond Planet Earth, but the current frenetic production is qualitatively and quantitatively incomparable. Its effect is not only the normalization of extraterrestrial activity, it also accustoms us to imagine the first steps of taking our civilization and the capitalist economy beyond the Earth’s gravity well.

#### Barriers to current tech are too high to solve resources

Riederer 14 - editor-in-chief of Guernica magazine and writer at The New Yorker

Rachel Riederer, “Silicon Valley Says Space Mining Is Awesome and Will Change Life on Earth. That’s Only Half Right”, New Republic, 4/19/14 , <https://newrepublic.com/article/117815/space-mining-will-not-solve-earths-conflict-over-natural-resources>

It's become clear that there’s just not enough stuff on Earth to go around. We’re constantly fighting over land and water, jockeying for access to our home planet’s diamonds or oil or sugarcane or schools of fish. In the last few years a chorus of voices has arisen to suggest that we could solve these petty human squabbles by looking to space. “Everything we hold of value on this planet, metals, minerals, real estate, energy sources, fuel—the things we fight wars over—are literally in near infinite quantities in the solar system,” says Peter Diamandis, one of the founders of the asteroid-mining company Planetary Resources. He claims we have a “moral obligation to become an interplanetary species,” and that if we harness the resources in space, "the entire human race will be the beneficiary." Naveen Jain, founder of Moon Express, wants to do on the moon what Diamandis wants to do with asteroids. A recent CNBC profile quotes him as saying, “Once you take a mind-set of scarcity and replace it with a mind-set of abundance, amazing things can happen here on Earth.” MOST POPULAR Police Killed Her Boyfriend, Then Charged Her With His Murder Texas Is Bracing for a Blue Wave in 2020. Yes, Texas. America’s Most Powerful Gun Supporter What Indigenous Rights Have to Do With Fighting Climate Change Open Borders Made America Great This kind of exultant talk is perhaps to be expected from entrepreneurs describing their companies’ dreams, but Diamandis and Jain are not alone. In a radio interview this April, Neil deGrasse Tyson, the public face of American astrophysics, also voiced his excitement about the potential of space mining. “If you haul an asteroid the size of a house to Earth, it could have more platinum on it than has ever been mined in the history of the world. More gold than has ever been mined in the history of the world. When that happens”—and here his voice takes on the dreamy tone familiar to fans of "COSMOS: A Spacetime Odyssey," the Fox series he hosts—“the scarcity that has led to human-to-human violence, there’s a chance it could all go away.” Tyson admitted that he was being “a little hopeful”—he has also noted that it is far more likely that any resources found in space will be put to use in space first, not hauled back to Earth (more on that later)—but his comment captures the aura of starry-eyed excitement that surrounds space mining ventures. At Slate, Will Oremus wrote about the terrestrial tech world’s blasé response to the founding of Planetary Resources, and commanded, “Wake up! This is outer space we’re talking about! This is awesome!” It is awesome. To read about these ambitious plans, and to contemplate the scale of human brainpower and industriousness required to pull them off, fills one with awe. These new companies talk about space in a way that sounds unfamiliar to the civilian ear accustomed to the reverent tone of planetarium field trips; rather than the vastness of space, the companies emphasize its accessibility. Moon Express calls the moon “the eighth continent.” Planetary Resources wants to “bring the solar system into humanity’s sphere of influence.” Experiencing awe is fun. It's even more fun to imagine a world of outer-space abundance in which we don’t have to worry about fossil fuels and everyone can afford a platinum case for their iPhone. And there is great potential for resource extraction in space, though these ventures will carry great upfront costs and plenty of uncertainty about whether they will actually come to fruition. Many deadlines and timeline estimates are fast approaching or have passed already. What’s misleading about these projects isn’t that they’re subject to budget problems and delays, but that they come couched in overblown rhetoric about their potential to radically alter human life, to do away with the notion of scarcity and deliver us to a future of plenty and peace. It’s a pattern that has become familiar in Silicon Valley: develop a plan for a business that will do something cool and make a lot of money, but describe it instead as something that will change the world. Return to that platinum asteroid for a moment. There’s one that Planetary Resources has been tracking: It passes near the Earth’s orbit every 23 months and is a half-kilometer by one kilometer in size. A spacecraft could travel to it in around eight months. Diamandis estimates its total worth at between $300 billion and $5 trillion. If it were to be mined at some point in the future, it would drive down the global price of platinum, which might make some items more affordable—luxury jewelry, of course, but also catalytic converters for cars and hard disks for laptops and DVRs—but it would primarily make the investors of Planetary Resources extremely rich. Allusions to the Wild West abound in the literature of space-mining companies. The Moon Express website talks about “brave pioneers” who explored new territories "with the backing of a monarch or a state.” For these entrepreneurs, space is not a distant emptiness; beyond the frontier, they envision a business-place. And with the exception of a Cold War–era treaty prohibiting national appropriation of the moon, there aren’t laws about ownership in space; its riches are there for the taking, like gold nuggets in a California stream. In a March debate on "Selling Space," at the American Museum of Natural History, Space Foundation CEO Elliot Pulham said that asteroids are clearly up for grabs: “There’s no law that says you can’t snag an asteroid. Knock yourself out.” It’s certainly true that space is full of valuables. Billions of years ago, during the formation of the solar system, gravity pulled the heavy materials on would-be planets toward their cores, forcing the comparatively lighter rocky material out to the surface. When those planets broke apart, they became asteroids. Some are made of rocky surface fragments, but some are made of the core materials—platinum, gold, silver, palladium—that are rare and precious on Earth. At a press roundtable after the "Selling Space" debate, Tyson explained why this process matters so much to those who would mine the sky: “Nature has pre-sifted the ingredients for you. You go grab yourself an asteroid made from the core of a planet that never survived, and you’ve got this stuff concentrated in the palm of your hand.” This is what Manifest Destiny must have felt and sounded like. Wealth beyond your wildest dreams, and it’s there for the taking. You just have to get there first. The “getting there first” will not be simple, or cheap. Most of the asteroids in the solar system are in the asteroid belt between Mars and Jupiter. But the orbit paths of some near-Earth asteroids, or NEAs, bring them relatively close to our planet—that is, within around 30 million miles. Planetary Resources has developed what is essentially an outer-space drone: a small telescope-equipped spacecraft, around the size of a desktop computer, that will survey near-Earth asteroids. Once an asteroid is identified and determined to be valuable, the extraction could begin, though that introduces a new set of technical obstacles. Because of the difficulty and expense of getting heavy machinery from Earth into space, some have suggested using 3D printing technology to use materials found in space to create the necessary equipment. Then, some modified version of a terrestrial mining method, like drilling or magnetic separation, could be used for the mining itself. But these extraction processes have been developed for the pressure and gravity of Earth, and they would need to be overhauled to function in the low-gravity, vacuum environment of space. If this part of the process sounds unclear, it’s because it is. To give an idea of the scale—in time and difficulty—of these kinds of operations, consider the government’s version of asteroid prospecting. In April, NASA greenlighted a mission in which a spacecraft called OSIRIS-REx will rendezvous with an asteroid called Bennu. OSIRIS-Rex is scheduled to launch in 2016, reach the asteroid in 2018, reconnoiter it for over a year, and then bring back samples for scientific study. The amount of asteroid that NASA plans to collect after all this time and trouble? Two ounces. A major premise of private space mining companies is that they will be able to work far faster and more economically than NASA, and will be willing to take on levels of risk beyond that of a government operation, but the scale and timeline of OSIRIS-REx shows how complex these operations will be, even for the swiftest companies. Rick Sternbach / KISS BAG IT, TAG IT, SELL IT An illustration, from the Cal Tech study, of an asteroid retrieval spacecraft capturing a 500-ton asteroid. The most far-out proposal in space mining is to "redirect" an NEA toward Earth and into lunar orbit. There, the asteroid could spin safely around the moon, accessible to our planet. A 2012 Cal Tech study determined that this method would be not only feasible, but “essential” for long-term human space exploration. According to the study, it will soon be possible for an unmanned spacecraft to identify a target asteroid—one around seven meters in diameter and 500,000 kilograms in mass—approach it, “loiter” nearby to determine its spin, and ultimately enclose the asteroid in what is described as a “draw-string bag.” (Take a moment to imagine a man-made drawstring bag capturing a giant mass of precious metal hurtling through space. “This is awesome!” does feel like the only reasonable response.) Once the asteroid and spacecraft are connected, a solar-powered propulsion system could fly the asteroid back to our moon and deposit it in lunar orbit. Depending on the mass of the asteroid, this retrieval flight would last between six and ten years. This idea, like the other space-mining projects, will require tremendous patience, money, vision, and bluster. So it's no surprise that the futurists of Silicon Valley are behind them: The group of companies founded with the intention of mining space are backed largely by investors who made their names and fortunes in tech. Peter Diamandis is the founder of the X Prize Foundation and of Silicon Valley’s Singularity University, which he co-founded with futurist Ray Kurzweil; Eric Schmidt is one of Planetary Resources’ major investors; before starting Moon Express, Naveen Jain was a senior executive at Microsoft and then CEO of his own startup, InfoSpace; Elon Musk founded PayPal and now has a private space company, SpaceX, currently under contract with NASA to begin carrying astronauts to the International Space Station. The New Yorker's George Packer identifies the “conflicting pressures” of Silicon Valley as “work ethic, status consciousness, idealism, and greed.” All of these pressures are present in the space-mining race, too. The work required to pull it off is undeniable—as is the idealistic delusion that outer-space extraction would bring world peace. Whoever accomplishes this first will be hailed, from Mountain View to Capitol Hill, as a genius. They will also become unfathomably wealthy, and rightly so: Entering a new, high-risk, high-tech field of business should come with the possibility for enormous reward. These entrepreneurs have evinced as much in less-utopian, off-the-cuff remarks. Diamandis has joked that his company’s financing plan is to buy puts in the platinum market and then announce their plan to bring a platinum asteroid home. Jain imagines coming back from trips to the moon with payloads worth billions of dollars: “I don’t care what people say," he said in an interview with Wired's editor last year. "That’s a shit load of money.” It’s telling that the foundational text of the space mining industry—1997's Mining the Sky, by John Lewis, a professor of planetary science at the University of Arizona and the chief scientist of Deep Space Industries—begins not with a catalog of the wealth of space, but with a brief history of exploration and military domination on Earth. Here, there isn’t enough, but in space, rather than nothingness, we find “a lively, rich understanding of the unity and lawfulness of Creation, within which the diversity and complexity of local materials and events falls into place.” Thanks to the saving power of technology, the very ideas of “limited resources and finite living space” are “tired old myths,” he writes. It’s exhilarating, this notion that tech advances could end scarcity as we know it, relegating wars over mineral wealth and energy sources to the list of woes defeated by science, alongside plague and polio. But it’s a dangerous exhilaration. It seems far more likely that new sources of wealth will, in their abundance, be one more thing for us to scrabble over. The space-mining notion is immensely appealing: the sky is full of infinite riches and abundance leads to peace. But why wouldn’t riches from the heavens cause conflicts and problems? Their vulgar terrestrial cousins always have. The problem with comparing space-mining to the Wild West isn’t just that it won’t revolutionize our economy like Manifest Destiny did. It isn’t even that there’s something suspect in taking the sky—something that feels so shared, so very deeply part of the commons—and turning it into a set of privately held commodities. It’s that this rhetoric gives the industry a kind of up-by-the-bootstraps patina, calling to mind a situation in which anyone with a gold-pan could go and seek their fortune, if one were plucky and lucky enough to set out for virgin territory. This simply does not apply to space mining, an industry where—to an even greater degree than modern-day resource extraction businesses on Earth—the barriers to entry in terms of both technology and capital are so immense that it is only open to entrepreneurs who are already billionaires. Would-be space mining companies are often called “crazy,” their plans described as wild schemes. In fact, these companies are not crazy at all. As Jain, of Moon Express, says in a promotional video, "It is not just a fun project. It is also a great business." Space-mining investors may be thinking extremely far outside the box, and willing to take on levels of risk that governments—the only entities with dealings in space until just recently—would never take on. But these are savvy investors, not a bunch of kids with a kooky dream, and they expect an eventual return on that investment. That might explain why, as the Wall Street Journal reported recently, Planetary Adventures has shifted its focus from precious metals "to a more mundane space resource: water," which "could be processed into fuel to extend the useful lives of aging commercial satellites." Granted, water has been a part of Planetary Resources’s business plan for years: When the company announced two years ago its intentions to mine asteroids, it said in a press release that “accessing water resources in space will revolutionize exploration.” But it never got headlines, for obvious reasons. As John Logsdon of the GWU Institute of Space Policy said after the "Selling Space" debate in March, “It’s not as sexy as platinum but I think the most valuable resource in space is water.” Harvesting asteroid ice could be very profitable in its own right, but it doesn’t conjure the same Panglossian platitudes as giant chunks of space gold do. That's just as well. It's a more practical approach for the near future. Because of the tremendous cost—both in terms of energy and money—of launching something out of Earth’s atmosphere or back into it, the most efficient use of resources extracted in space will be right there: in space. And that, in turn, should help bring the peace-and-abundance rhetoric back down to Earth. It's like much of what Silicon Valley invents: Not as awesome as the elevator pitch makes it sound, but useful in its own little way.

#### Warming doesn’t trigger extinction

IBD 18 [Investors Business Daily, Citing Study from Peer reviewed journal by Lewis and Curry, “Here's One Global Warming Study Nobody Wants You To See”, 4/25/18, https://www.investors.com/politics/editorials/global-warming-computer-models-co2-emissions/]

Settled Science: A new study published in a peer-reviewed journal finds that climate models exaggerate the global warming from CO2 emissions by as much as 45%. If these findings hold true, it's huge news. No wonder the mainstream press is ignoring it.

In the study, authors Nic Lewis and Judith Curry looked at actual temperature records and compared them with climate change computer models. What they found is that the planet has shown itself to be far less sensitive to increases in CO2 than the climate models say. As a result, they say, the planet will warm less than the models predict, even if we continue pumping CO2 into the atmosphere.

As Lewis explains: "Our results imply that, for any future emissions scenario, future warming is likely to be substantially lower than the central computer model-simulated level projected by the (United Nations Intergovernmental Panel on Climate Change), and highly unlikely to exceed that level.

How much lower? Lewis and Curry say that their findings show temperature increases will be 30%-45% lower than the climate models say. If they are right, then there's little to worry about, even if we don't drastically reduce CO2 emissions.

The planet will warm from human activity, but not nearly enough to cause the sort of end-of-the-world calamities we keep hearing about. In fact, the resulting warming would be below the target set at the Paris agreement.

This would be tremendously good news.

The fact that the Lewis and Curry study appears in the peer-reviewed American Meteorological Society's Journal of Climate lends credibility to their findings. This is the same journal, after all, that recently published widely covered studies saying the Sahara has been growing and the climate boundary in central U.S. has shifted 140 miles to the east because of global warming.

The Lewis and Curry findings come after another study, published in the prestigious journal Nature, that found the long-held view that a doubling of CO2 would boost global temperatures as much as 4.5 degrees Celsius was wrong**.** The most temperatures would likely climb is 3.4 degrees.

It also follows a study published in Science, which found that rocks contain vast amounts of nitrogen that plants could use to grow and absorb more CO2, potentially offsetting at least some of the effects of CO2 emissions and reducing future temperature increases.

#### No water wars

Gleick 18 [Peter Gleick, MacArthur “Genius” Fellowship and was elected to the U.S. National Academy of Sciences, world-renowned expert, innovator, and communicator on water and climate issues, cofounded the Pacific Institute, which he led as president until mid-2016, pHd from UC Berkeley, and Charles Iceland, s Director, Global and National Water Initiatives with WRI’s Food, Forests, and Water Programs, “Water, Security, & Conflict”, https://pacinst.org/wp-content/uploads/2018/08/Water-Security-and-Conflict\_Aug-2018-2.pdf]

3.2. The Role of Governance in Water Security

Most water crises do not end in conflict, migration, or acute food insecurity. Instead, people muddle through until the crises recede. Some crises even generate cooperation among local or regional parties. Understanding why water crises lead to adverse outcomes in some places and better outcomes in others will help inform strategies for reducing the risks of conflict. Why, for example, did Syria sink into civil war following a record-breaking five-year drought, while .Iordan and Lebanon avoided strife following that same drought (Adams et al. 2018)? This requires integrating analyses of meteorological and resource-related events with the diverse social, political, and economic dynamics at play.

We can postulate—based on research conducted by Wolf and his colleagues (2003) on transboundary basins— that when rapid change, either on the institutional side or in the physical system, outpaces the institutional capacity to absorb that change, the stage is set for possible water insecurity. Therefore, when we go looking for water insecurity, we need to be on the lookout for large-scale water-related change and low capacity to handle such change (this Is what the Water, Peace, and Security [WPS] consortium is attempting to do via the development of a near realtime global early warning system for potential water-related threats to human security—more on this further on in this brief).

### Norming Adv

#### Customary international law is garbage

Michael Williams 2021 [Filling the Void: Why Existing International Law is Not Suited to Mitigating Space Debris] [DS] [http://www.mjilonline.org/filling-the-void-why-existing-international-law-is-not-suited-to-mitigating-space-debris/]

Space and the sea have long been paralleled, each seen as a type of res communis. There has been a push to try to understand the former through a similar lens as the latter. Space, however, provides new and complex issues that do not lend themselves well to being approached through existing frameworks. One such issue forthcoming is addressing the fear of the Kessler syndrome[1]. The Kessler syndrome, also known as ablation cascade or collision cascading, is a theoretical scenario in which a high density of space debris pollution increases the density of space debris as objects collide. As objects collide, more objects are produced generating a positive feedback loop and the likelihood of collisions increases exponentially. The fear is that as the density of space debris in low earth orbits (LEO) is increased, our ability to access space is diminished. Rockets traversing in a LEO can be rendered inoperable, or even destroyed, by pieces of debris no larger than golf balls. This fear has risen drastically as states, such as China beginning in 2007, have begun testing anti-satellite missiles which turn one item of space debris into several thousands.[2] The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies applies international law to space, but current international law – absent a new treaty – is insufficient to address the Kessler syndrome.[3] As it currently stands, soft law, customary international law, and existing treaties do not sufficiently address the issue of space debris. The strongest argument for a soft law approach to space debris mitigation is the Space Debris Mitigation Guidelines, drafted by the Committee on the Peaceful Uses of Outer Space and endorsed by the United Nations General Assembly in 2007.[4] As part of these guidelines, member states are encouraged to utilize rockets that limit debris produced during normal operations and that any manmade object placed in LEO should only reside there so long as they remain operational and should be removed from orbit in a controlled fashion following termination of operation. As these requirements are all soft law, none of them are mandatory and member states are encouraged to comply on their own initiative. This approach fails to solve the issue for the same host of reasons that soft law has proven largely insufficient to address large scale tragedies of the common issues. Spacefaring member states have no incentive to comply, no penalty for noncompliance, and, perhaps more uniquely, the technology is still undeveloped that allows for full compliance. The recently signed Artemis Accords, however, holds that NASA and member states shall act in a manner that is consistent with the Space Debris Mitigation Guidelines, but it remains unclear to what extent member states will regulate the rapidly growing number of space fairing corporations.[5] Customary international law faces several hurdles when addressing this issue and ultimately stumbles, proving insufficient. When drafting the United Nations Convention on the Law of the Sea (UNCLOS), there were thousands of years of seafaring to look to for what the existing customary law was at that time.[6] This is not the case with spacefaring, and parallels that can be established – if any – do not provide a strong enough foundation to build on. The Debris Mitigation Guidelines could either be a codification of customary international law in 2007 or could have become customary international law through practice and opinio juris since endorsement. Ite is unlikely that it codified customary international law as there is such a short window of time and so few states participated in this process of space debris mitigation before 2007. Equally unlikely is that it has become customary international law since 2007. Customary international law requires the practice of states engaged in the action – a small number here – but there has been hardly any compliance with the guidelines beyond verbal promises and guarantees. There has been zero opinio juris on the subject, unsurprising given the lack of state practice. Even if we viewed the Debris Mitigation Guidelines as binding member states through customary international law, this would again fail to address the debris left in space by corporations. The Space Liability Convention, in conjunction with Article 31 of the Vienna Convention on the Law of Treaties, could be seen as addressing the issue of manmade space debris, but this stretches the bounds of treaty interpretation to its uttermost limits.[7] There has only been one claim under the Space Liability Convention so it can hardly be argued there is sufficient subsequent practice.[8] The definitions contained within the Space Liability Convention have, to some academics and scholars, been viewed as covering space debris. This interpretation is only possible due to the wide array of tracking of space debris and its origins.[9] Absent being able to understand where space debris originated it would be impossible to assign liability to the launching state or party. Even with tracking, fault-based liability hardly addresses space debris that is the result of a true accident. The Outer Space Treaty and the Registration Convention, the two other major treaties in the international space law regime create a patchwork framework that is nearly too vague to be usable.[10] To truly address this issue, and others, in this new frontier, a treaty of the magnitude of UNCLOS is needed. A treaty of this scale is necessary, compared to a mere framework convention, to protect the rights of all mankind, including nations who have not yet ventured into space. To truly address the issue, such a treaty would need to hold member states strictly liable for the acts committed by private entities within their borders. As with natural resources in the high seas, we cannot let the first nations to reach space pollute it beyond usability before other nations are able to partake as well. Space, and access to it, must be a resource for all mankind.

#### Bad voting procedures.

Hugo Peter 4/23/2021 [THE IMPORTANCE OF THE UN COPUOS IN THE SPACE DEBRIS MITIGATION: WHAT EVOLUTION FOR THE UN COPUOS?] [DS] [https://conference.sdo.esoc.esa.int/proceedings/sdc8/paper/194/SDC8-paper194.pdf]

REFLECTION ON THE VOTING PROCEDURE IN THE UN COPUOS 2.1 REFLECTION ON THE CONSENSUS The voting procedure of the UN COPUOS is the consensus and it seems quite complicated to change it. The history of the UN COPUOS explains the adoption of the vote by consensus against the unanimity vote on the one hand – which was championed by the USSR (the Union of Soviet Socialist Republics) and the majority vote on the other hand – which was supported by the USA. A compromise was finally reached through the adoption of the consensus voting procedure [21]. However, as Eilene Galloway mentions: “That meant that every member of the Committee had a veto right” [22]. As a result, it allows each State to sink any project they disagree with. Although similar to the unanimity procedure, the consensus procedure should not be confused with the former. While unanimity is the expression of the agreement of each voting member to a proposal - which means that if one does not agree, the proposition will not be validated. When the vote happens, if no States opposes it, then the proposal is passed. As a consequence, in the case of consensus, States do not express their full agreement. Some may not agree but not to the extent of opposition which would signify the failure to adopt the text [23]. From a formal perspective if these two procedures are quite similar, their legal consequences are widely different. Instruments adopted by unanimity will have a stronger impact and States will be morally more bound by such instruments whereas consensus instruments, while easier to adopt, will have a lighter impact on the behaviour of States. Consensus was chosen so as to avoid permanent blockage as the Committee was built during the Cold War and the opposition between the two blocs was so strong that each one would have blocked any initiative coming from the opposite camp. Considering the current context and composition of the UN COPUOS and the fact that the Committee does not rely on the opposition between two blocs any longer but instead operates on multilateral rivalry, it may be time to think about an evolution of the voting procedure. Unanimity appears to be a utopic voting procedure, considering the many oppositions between States. Consequently, it would not allow the UN COPUOS to be more effective or reliable. The main goal of such a change would be to allow member States to adopt stronger instruments that could better address the current challenges, primarily space debris. The UN COPUOS could move towards the adoption of a qualified majority procedure. While the simple majority would not be strong enough and would create the risk that only half the members respect the adoption of legal instruments, a qualified majority, at the 2/3 or 3/5 for example, could be a reasonable solution. It would both allow to enforce instruments with a stronger base that reveals the clear agreement of a large majority and at the same time enable those who disagree to clearly express their opposition without blocking the adoption of the instrument. 2.2 REFLECTION ON THE ‘ONE VOTE PER STATE’ PRINCIPLE Concerning the vote, another debatable point is discussed by Bin Cheng: ’the one vote per State’ principle, which is directly inspired by the UN Charter and its article 18 paragraph 1 [24]. In his analysis of domestic law, Professor Cheng states that this rule is not the most democratic one. From the State’s point of view, it appears democratic as each State is equal no matter what its size or capabilities are. From the population’s and citizens’ perspective however – which is the analysis of Bin Cheng, it is not the case any longer. Indeed, in this case, it means that while each State has the same importance, their citizens are not in any case taken into consideration. Even though this reflection is worth discussing, it seems complicated to individualize the vote according to the number of citizens or, for example, according to the capabilities of each State. In a global context, such as the UN’s, to favour population size instead of State equality seems inequal as it would mean that large countries will always have a preponderant vote and will weigh more on the world forum. The principle of ‘one vote per State’ establishes legal equality in law which is already disturbed by factual inequalities linked to the importance and weight of the economies, the diplomacy, and the technology that some States enjoy. Hence, it seems counterproductive to bring changes that could lead to more disequilibrium. In the case of the UN COPUOS and space matters, such an idea of considering the population or any other means could make the UN COPUOS disappear. The ‘one vote per State’ rule in the Committee guarantees equality between States, no matter whether they have space capabilities or not, and no matter how developed these capabilities are. 2.3 FINAL REFLECTION Finally, while the voting procedure should be reviewed and maybe updated to the current situation (end of the Cold War, more member States, development of space capabilities all over the world), the ‘one vote per State’ rule should remain unchanged to guarantee equality between States within the UN COPUOS and between spacefaring and non-spacefaring nations. Keeping hold of this rule will allow States and the UN COPUOS to carry on with negotiations without taking the risk of losing the interest of smaller States. It will also guarantee the same weight to every State on the global work carried out by the Committee and its SubCommittees. And lastly, it will allow States with capacities in development as well as the ones which do not have any yet, to focus on developing them. Conversely, the consensus rule could be the object of a serious reflection within the Committee and particularly within its Legal Sub-Committee so as to examine how it could evolve and what the consequences of such a medication could be. Moreover, the UN COPUOS creates a precedent which could lead other organs of the UN to adopt the consensus rule, even though article 18 of the United Nations Charter only mentions majority or qualified majority. The passage from consensus to qualified majority could help the UN COPUOS to grow and gather more States from all over the world, just like the UNGA and its 193 member States. Such a modification could allow the UN COPUOS to reconnect with its great past. While hard law was established as a predominant model for space law, the blockages within the Committee and its SubCommittees render them useless and unable to adopt new hard law instrument. The tendency nowadays in the UN COPUOS and space law in general turns towards soft law even though it is non-binding. The traditional opposition between hard and soft laws needs to change, generally speaking but more specifically in the case of the UN COPUOS if it wants to be relevant in the next decades.

#### Hart gives 10000000000 alt causes including militarization, etc – aff has no effect

#### No space war – it’s hype and systems are redundant

Johnson-Freese and Hitchens 16 [Dr. Joan Johnson-Freese is a member of the Breaking Defense Board of Contributors, a Professor of National Security Affairs at the Naval War College and author of Space Warfare in the 21st Century: Arming the Heavens. Views expressed are those of the author alone. Theresa Hitchens is a Senior Research Scholar at the Center for International and Security Studies at Maryland (CISSM), and the former Director of the United Nations Institute for Disarmament Research (UNIDIR) in Geneva, Switzerland. Stop The Fearmongering Over War In Space: The Sky’s Not Falling, Part 1. December 27, 2016. https://breakingdefense.com/2016/12/stop-the-fearmongering-over-war-in-space-the-skys-not-falling-part-1/]

In the last two years, we’ve seen rising hysteria over a future war in space. Fanning the flames are not only dire assessments from the US military, but also breathless coverage from a cooperative and credulous press. This reporting doesn’t only muddy public debate over whether we really need expensive systems. It could also become a self-fulfilling prophecy. The irony is that nothing makes the currently slim possibility of war in space more likely than fearmongering over the threat of war in space.

Two television programs in the past two years show how egregious this fearmongering can get. In April 2015, the CBS show 60 Minutes ran a segment called “The Battle Above.” In an interview with General John Hyten, the then-chief of U.S. Air Force Space Command, it came across loud and clear that the United States was being forced to prepare for a battle in space — specifically against China — that it really didn’t want.

It was explained by Hyten and other guests that China is building a considerable amount of hardware and accumulating significant know-how regarding space, all threatening to space assets Americans depend on every day. If viewers weren’t frightened after watching the segment, it wasn’t for lack of trying on the part of CBS.

Using terms like “offensive counterspace” as a 1984 NewSpeak euphemism for “weapons,” it was made clear that the United States had no choice but to spend billions of dollars on offensive counterspace technology to not just thwart the Chinese threat, but control and dominate space. While it didn’t actually distort facts — just omit facts about current U.S. space capabilities — the segment was basically a cost-free commercial for the military-industrial complex.

In retrospect though, “The Battle Above” was pretty good compared to CNN’s recent special, War in Space: The Next Battlefield. The latter might as well have been called Sharknado in Space – because the only far-out weapons technology our potential adversaries don’t have, according to the broadcast, seems to be “sharks with frickin’ laser beams attached to their heads!”

First, CNN needs to hire some fact checkers. Saying “unlike its adversaries, the U.S. has not yet weaponized space” is deeply misleading, like saying “unlike his political opponents, President-Elect Donald Trump has not sprouted wings and flown away”: A few (admittedly alarming) weapons tests aside, no country in the world has yet weaponized space. Contrary to CNN, stock market transactions are not timed nor synchronized through GPS, but a closed system. Cruise missiles can find their targets even without GPS, because they have both GPS and precision inertial measurement units onboard, and IMUs don’t rely on satellite data. Oh, and the British rock group Pink Floyd holds the only claim to the Dark Side of the Moon: There is a “far side” of the Moon — the side always turned away from the Earth — but not a “dark side” — which would be a side always turned away from the Sun.

More nefariously, the segment sensationalized nuggets of truth within a barrage of half-truths, backed by a heavy bass, dramatic soundtrack (and gravelly-voiced reporter Jim Sciutto) and accompanied by sexy and scary visuals.

Make no mistake there are dangers in space, and the United States has the most to lose if space assets are lost. The question is how best to protect them. Here are a few facts CNN omitted.

The Reality

The U.S. has all of the technologies described on the CNN segment and deemed potentially offensive: maneuverable satellites, nano-satellites, lasers, jamming capabilities, robotic arms, ballistic missiles that can be used as anti-satellite weapons, etc. In fact, the United States is more technologically advanced than other countries in both military and commercial space.

That technological superiority scares other countries; just as the U.S. military space community is scared of other countries obtaining those technologies in the future. The U.S. military space budget is more than 10 times greater than that of all the countries in the world combined. That also causes other countries concern.

More unsettling still, the United States has long been leery of treaty-based efforts to constrain a potential arms race in outer space, as supported by nearly every other country in the world for decades. Indeed, under the administration of George W. Bush, the U.S. talking points centered on the mantra “there is no arms race in outer space,” so there is no need for diplomat instruments to constrain one. Now, a decade later, the U.S. military – backed by the Intelligence Community which operates the nation’s spy satellites – seems to be shouting to the rooftops that the United States is in danger of losing the space arms race already begun by its potential adversaries. The underlying assumption — a convenient one for advocates of more military spending — is that now there is nothing that diplomacy can do.

However, it must be remembered that most space-related technologies – with the exception of ballistic missiles and dedicated jammers – have both military and civil/commercial uses; both benign — indeed, helpful — and nefarious uses. For example, giving satellites the ability to maneuver on orbit can allow useful inspections of ailing satellites and possibly even repairs.

Further, the United States is not unable to protect its satellites, as repeated during the CNN broadcast by various interviewees and the host. Many U.S. government-owned satellites, including precious spy satellites, have capabilities to maneuver. Many are hardened against electro-magnetic pulse, sport “shutters” to protect optical “eyes” from solar flares and lasers, and use radio frequency hopping to resist jamming.

Offensive weapons, deployed on the ground to attack satellites, or in space, are not a silver bullet. To the contrary, U.S. deployment of such weapons may actually be detrimental to U.S. and international security in space (as we argued in a recent Atlantic Council publication, Towards a New National Security Space Strategy). Further, there are benefits to efforts started by the Obama Administration to find diplomatic tools to restrain and constrain dangerous military activities in space.

These diplomatic efforts, however, would be undercut by a full-out U.S. pursuit of “space dominance.” This includes dialogue with China, the lack of which Gen. William Shelton, retired commander of Air Force Space Command, lamented in the CNN report.

Given CNN’s “cast,” the spin was not surprising. Starting with Ghost Fleet author Peter Singer set the sensationalist tone, which never altered. The apocalyptic opening, inspired by Ghost Fleet, posited a scenario where all U.S. satellites are taken off-line in nearly one fell swoop. Unless we are talking about an alien invasion, that scenario is nigh on impossible. No potential adversary has such capabilities, nor will they ever likely do so. There is just too much redundancy in the system.