#### .

## 1

#### I: Affirmatives can only defend whether exclusive possession is unjust.

* The definition is from Black’s Law Dictionary

Su 17 [Jinyuan Su, Professor and Assistant Dean at Xi'an Jiaotong University School of Law, China, “Legality of unilateral exploitation of space resources under international law,” 2017, *International & Comparative Law Quarterly*, Vol. 66, Issue 4, pp. 991-1008, https://doi.org/10.1017/S0020589317000367, EA]

The Outer Space Treaty does not prohibit expressis verbis the extraction of space resources. However, there exists a possibility that the recognition of property rights by a State, which is a party to the Outer Space Treaty, over resources extracted in outer space may conflict with its international obligations under Article II of the treaty, which proscribes the national appropriation of outer space 'by claim of sovereignty, by means of use or occupation, or by any other means'.26 The term 'appropriation' means '[t]he exercise of control over property; a taking of possession'.27

#### V1: They ban use which is distinct from appropriation. – they talk about using land but not the EXCLUSIVE control over property – not TAKING it as a posession

Harris No Date [Philip R Harris, Ph.D.; Visiting Professor in the California School of International Management, “Space Law and Space Resources,” No Date, *National Space Society*, https://space.nss.org/settlement/nasa/spaceresvol4/spacelaw.html, Accessed: 01/20/22, EA]

According to the present space law, all mining in space-lunar, asteroidal, or planetary-is treated alike. The operative treaty provisions are (1) that space is reserved for the benefit and is the province of all mankind; (2) that every nation shall have equal access to outer space; (3) that nations cannot appropriate space under any claim of national sovereignty; (4) nevertheless, that nations are free to explore and "use" outer space. The official positiion of the United States. clearly enunciated in the debates of UNCOPUOS, interprets these provisions to permit any nation or corporation to mine (Artist Pat Rawlings rendering of lunar mining and processing) and otherwise use the resources of outer space.

#### V2: They nationalize the existing private space industry.

#### Negate –

#### 1 – Extra T – going beyond the resolution makes it impossible to determine if the resolutional part of their action was justifiable – means they haven’t affirmed. Independently justifies adding planks to the aff to spike our best neg ground and solvency deficits.

#### 2 – Limits – opening the topic up to restricting any use of space lets them spec subsets of specific private sector activities like companies, satellites, and programs – moots the core question of whether private space property is just and spikes any possible generic deficits on the topic.

#### Drop the debater – abusive advocacies skew substance – 1AR restart doesn’t check 1NC construction.

#### Competing interps – offense proves they’re not reasonable and anything else encourages arbitrary judge intervention.

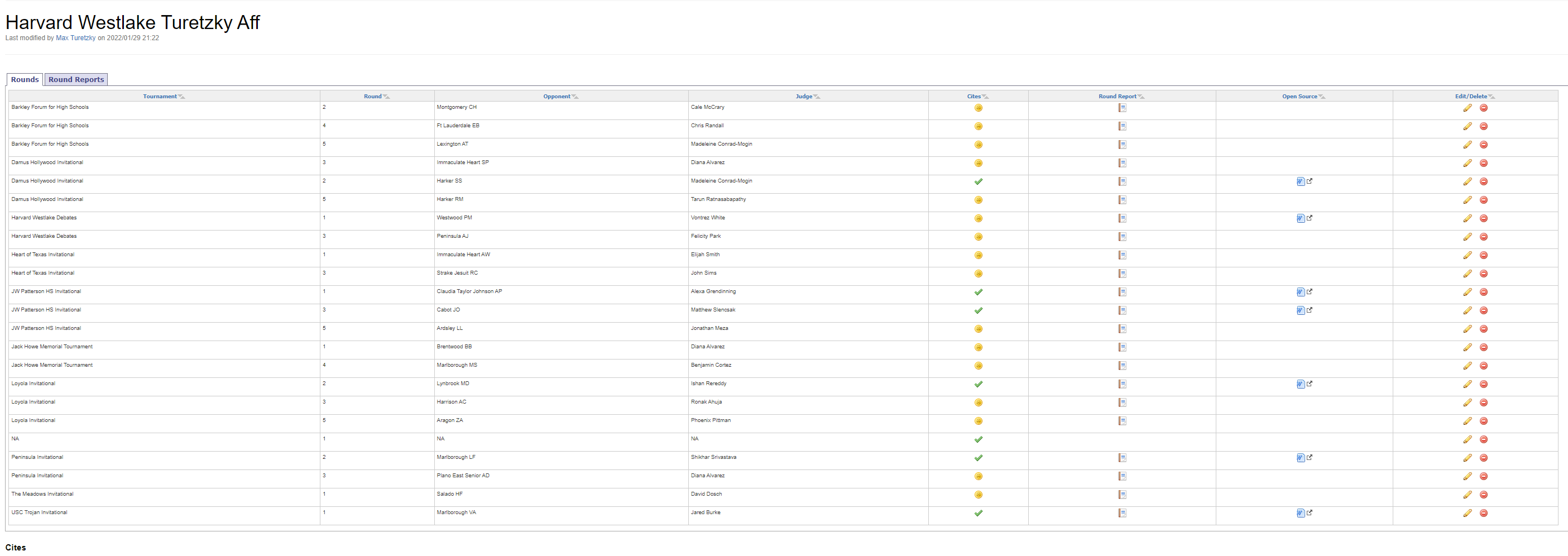
#### No RVIs – leads to baiting T and chilling checks on abusive AFFs – causes substance crowdout.

## 2

#### Interpretation: Debaters must add all rounds they have previously participated in to the 2021-2022 NDCA LD Wiki for the side that they are on at least one hour before the round.

#### Violation – they don’t include peninsula round 6 this screenshot.

#### 



#### Vote neg:

#### 1 – Research skills – open sourcing allows small schools to research better and get back in the game.

#### 2 – Clash – open source allows substantive engagement of positions through preparation rather than ad-hoc generics – that turns their method because refinement of methods through nuanced clash allows for truth testing their arguments and building advocacy skills that are the portable impact to debate.

#### Drop the debater –

#### 1] It’s the same thing as dropping the argument in this case since the argument is the entire case that wasn’t disclosed

#### 2] It’s not what you do, it’s what you justify—voting for me sets a precedent in favor of a positive model of debate—wins and losses determine the direction of activity

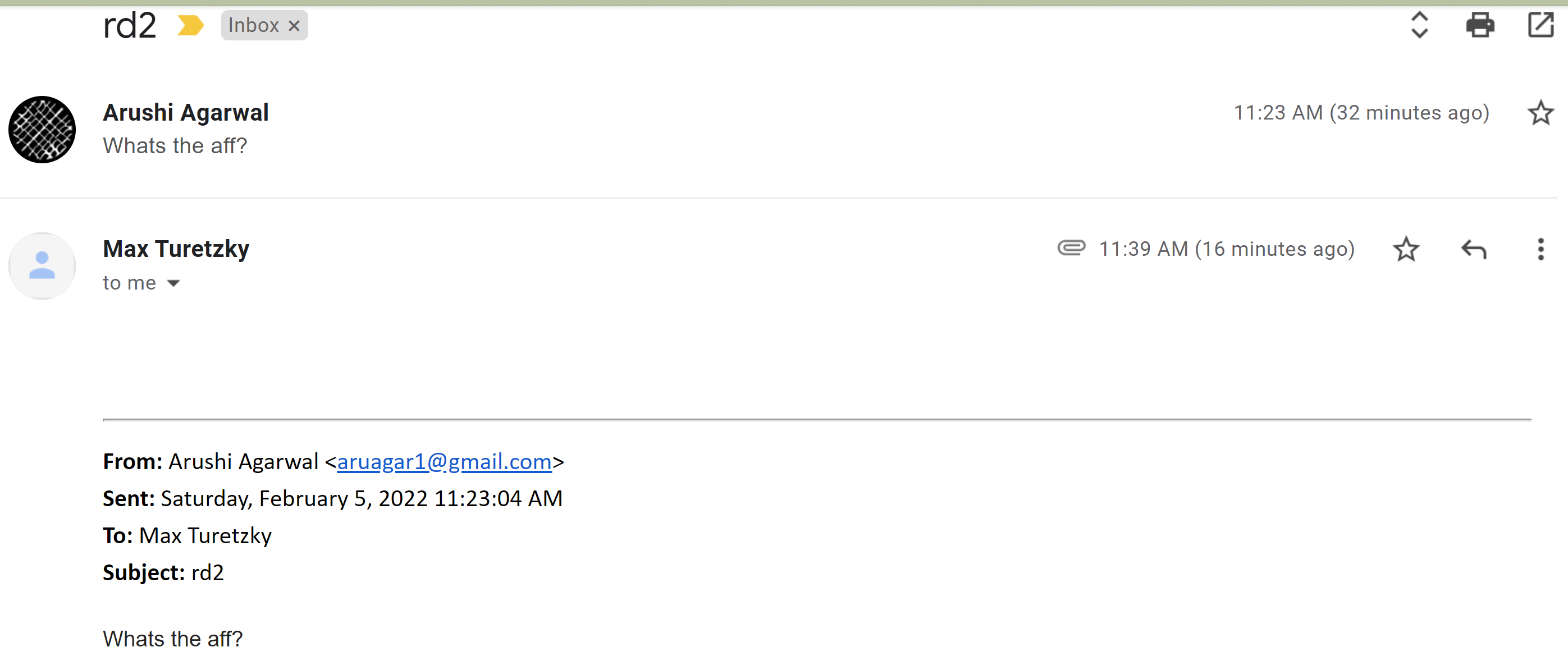
#### 3] Deterrence—Dropping the debater will be best because it shows that they can’t run positions that could spread through the community and harm debate as a whole.

4] Drop the debater specifically for not disclosing because there’s no way to rectify the abuse—going and forcing them to disclose now won’t fix the lack of education we get from this round.

## 3

Interpretation: debaters must respond with their affirmative within 10 minutes of asked after pairings are released

V: They respond 20 minutes before the round starts, 16 minutes after being asked.



#### Vote neg:

#### 1 – Clash – open source allows substantive engagement of positions through preparation rather than ad-hoc generics – that turns their method because refinement of methods through nuanced clash allows for truth testing their arguments and building advocacy skills that are the portable impact to debate.

2 – Education – we can only sufficiently learn about the aff

## 4

#### Text: States ought to:

#### • amend the Outer Space Treaty to create a private property regime that grants exclusive rights to private entities to exploit resources within space facilities and a safety zone of 1000 meters if they inhabit, maintain and/or operate said facility for a period of at least one year conditional upon peaceful use of the property;

#### • establish an international space debris organization modelled off the International Civil Aviation Organization that is granted exclusive and mandatory standard-setting authority over space debris;

#### • mandate a transition to zero-emissions modes of transportation;

#### • ban the use of environmentally harmful housecleaning products;

#### • ban ozone-depleting pesticides;

#### • ban nitrous oxide.

#### Plank 1 solves and preserves legal certainty.

Brehm 15 [Andrew R. Brehm, attorney at the law firm Scopelitis Garvin, “Private Property in Outer Space: Establishing a Foundation for Future Exploration,” 2015, *Wisconsin International Law Journal*, Vol. 33, Issue 2, https://repository.law.wisc.edu/s/uwlaw/media/77012, EA]

International agreement is essential to establishing a system of private property rights in outer space for the simple reason that outer space does not belong to one single nation; it is not the prerogative of the US government, or any government, to implement unilateral legislation that would significantly alter outer space and the current space law framework. It would frustrate the common conception of outer space as a free and open place, as well as the current legal framework, to simply enact domestic legislation that allows for the acquisition of private property rights in outer space. A collaborative, international approach is necessary for legal and practical reasons, in order to successfully establish an effective and beneficial system of private property rights in outer space.

Wayne White’s treaty proposal creates a strong foundation for international discussion of the increasingly important issue of private property acquisition in outer space. White’s well-crafted treaty proposal seeks to advance private exploration of outer space within the regulatory framework of the Outer Space Treaty and existing international space law. By creating a system in which private entities can establish real property rights in their space objects and a surrounding safety zone, the proposal incentivizes private investment of large sums into space exploration programs. Provisions which authorize the right to exclude, the right to be free from interference, the exclusive right to appropriate resources within an established safety zone, and the right to sell real property further encourage private space exploration and create strong associated incentives. 107 Private space exploration and resource extraction entities allocate substantial investments in furtherance of their space programs. 108 Allowing such entities to mine valuable platinum group resources, as well as water and hydrogen in celestial bodies that can be used to propel deeper space exploration, not only provides a robust safety net for current space exploration entities, but also creates a system that encourages new entities to enter into the field of private space exploration. Increased space exploration across the board would have nearly unlimited benefits in terms of societal, economical, and technological advancement. 109

Additionally, an international agreement alleviates some of the general concerns associated with establishing private property rights in outer space. Outer space is generally viewed as a place that should be open to all for free and peaceful use. 110 Opponents of private property rights in outer space often cite concerns about over-allocation of property at the exclusion of non-spacefaring nations or entities, and associated concerns. " 1 White’s proposed international agreement alleviates these concerns by placing limitations on which real property rights can be acquired.

First, under the proposal for an international agreement, private entities are entitled to formal recognition of property rights if they “inhabit, maintain and/or operate a space facility for a period of at least one year.” 112 This overcomes the potential issue of modern-day private colonialism where private entities could simply stake their company flags and claim ultimate title to the property. Of course, the duration requirement could be extended and additional requirements for formal recognition of property rights could be attached. Additionally, the property rights under White’s system would only apply to space facilities and a safety zone of either 500 or 1,000 meters surrounding a space facility.113 This limitation avoids concerns of over-allocation of private property in space. Essentially, private entities would not be capable of acquiring private property rights to vast amounts of territory. Also, property rights of private entities would immediately terminate if the property is used for non-peaceful purposes, if it is abandoned for an extended period of time, or if it used to prevent free access to outer space or celestial bodies114 These provisions ensure that outer space will be used for peaceful purposes and will remain open for free exploration.

Ultimately, a well-crafted international agreement similar to White’s proposal creates a system of private property rights in outer space that remains true to the overarching goals of outer-space exploration. Such a system would incentivize private space exploration in a realistic and pragmatic fashion that benefits all mankind. If peaceful and free space exploration is a desirable goal, White’s treaty proposal lays a strong foundation. This foundation has the potential to lead to an effective international system that addresses modem space exploration concerns while facilitating future development in the arena of space exploration.

#### Plank 2 solves debris.

Larsen 18 [Paul B. Larsen, taught air and space law for more than forty years respectively at Southern Methodist University and at Georgetown University, “Solving the Space Debris Crisis,” 2018, *Journal of Air Law and Commerce*, Vol. 83, Issue 3, https://scholar.smu.edu/cgi/viewcontent.cgi?article=4092&context=jalc, EA]

D. OPTION OF AN INTERNATIONAL SPACE DEBRIS ORGANIZATION

1. ICAO Analogy Option

An international space debris organization capable of establishing international mandatory standards for old as well as for new space debris would require new decision-making authority. One model for such an organization could be the ICAO, which is a sub-agency of the United Nations. ICAO’s main purpose is to establish international standards and procedures for air traffic that are mandatory and uniform.153 The authorizing treaty is the 1944 Chicago Convention.154 Its Article 37 establishes ICAO’s standard-setting functions for civil aviation.155 Article 56 provides for the creation of the ICAO Air Navigation Commission, which is a standing commission of nineteen experts.156 Its function is to draft standards and to continuously update existing standards as needed by new developments.157 The technical experts do not represent states and are therefore not beholden to specific states. The Commission has subcommittees on specific subjects. In their examinations, the experts solicit contributions from private operators, users, and air services, as well as from states. The standards are agreed to by the Air Navigation Commission and submitted to the ICAO Council for approval, after which the standards are submitted to the ICAO member states. At that point in time the individual states have the option of filing deviations from the international standards.158 The standards apply only to civil users.159 Military operators tend to observe the civil standards for the sake of uniformity and safety.

a. Strengths

Focusing decision-making on international standards and procedures for all kinds of space debris would remove the decision-making from all the other many issues that are now discussed in COPUOS. If the ICAO model were adopted, then an expert technical commission would be charged with examination of the technical and physical ways of best limiting and removing debris. The commission would not be distracted by political issues as COPUOS is now. The decision-making would take place in a UN forum. It would not be dependent on an outside group like the IADC. The standards and procedures developed by a space debris commission would become mandatory upon approval by a small space debris council and only subject to deviations by individual states for good cause. States would appreciate the safety and navigation advantages of uniform international space debris rules. Decision-making would be expedited because the space debris commission would only be motivated by the urgency of the need for space debris regulation. As in ICAO, the space debris standards and procedures would establish the minimum requirements with states free to create more comprehensive rules. The individual states would implement and enforce the space debris standards and procedures, subject to oversight by a new international space debris organization. It would be a small UN sub-agency with universal participation and decision-making powers, similar to ICAO. The ICAO model has certainly worked for commercial aviation. Applied to space traffic, the aim would be an ICAO-like transparency, certainty, and reliability.

b. Weaknesses

The weakness of adopting the ICAO model would be that it is very difficult for states to adopt a new framework. However, major devastating collisions, like a destructive collision with the International Space Station or cascades of collisions caused by cascades of debris would convince the world of the need for drastic action.160 Such collisions in outer space will happen. The wise choice would be to adopt new regulation before the big collisions happen. Another weakness is that there would be additional costs because the ICAO model would require more technology and operations. Finally, the major problem with this option would be the difficulty of organizing and adopting new international law on space debris regulation. Unfortunately, that may happen after major outer space collisions and the consequent urgency to remedy the debris problem that would follow a disaster.

c. Evaluation: Option of Using the ICAO Model for Space Debris Regulation161

It is generally agreed that the space debris problem is universal. It requires action and decisiveness for its resolution. ICAO is constantly faced with resolving aviation safety issues and regulating air space. ICAO, as a UN sub-agency, is within the UN umbrella of specialized agencies. Space has similarities to air space. Most of air space is not sovereign. Outer space is also not sovereign. ICAO has proven successful in organizing and resolving joint use of air space by all the states. Using the ICAO model to form a similar world safety organization for outer space debris should be considered. ICAO regulations are mandatory and uniform. International space debris regulations also need to be mandatory and uniform. ICAO regulation is accepted and even appreciated by military users as being of a technical nature. A similar arrangement should work for space debris regulation. A commission of space debris experts would be charged with drafting international space debris regulations. The space commission would be able to constantly evaluate the success of existing regulations and be able to make adjustments and improvements as needed. The space debris commission would prepare regulations for generation of new debris. It should also establish acceptable regulations for significant removal of existing debris sufficient to stabilize, if not reduce, the existing debris accumulation.

A small representative space debris council would be formed to approve the draft regulations. The mandatory space debris regulations would be sent to states, who would be able to file necessary individual deviations as occurs with aviation standards and procedures. The council would be guided by long term policies established by an assembly of states. Such an assembly of ICAO member states meets every three years. A similar assembly would establish long term policy for the space debris organization.

For its work on new regulations, a new space navigation commission would need substantial input of information from the users of outer space about their needs, evaluations of regulations that are successful and beneficial, and their negative reaction to regulations that do not work and are too restrictive. Users of outer space should be able to contribute technology, both for mitigation of new debris and for effective ways of removing old debris. The actual implementation of the new regulations would occur through the states themselves. They and their authorized non-governmental users would have to comply with the international regulations. The burden of actual removal of old debris would fall on the states, unless states in the debris organization agree to contract out debris removal to commercial companies. New international law would be established by a diplomatic conference to authorize the space organization and to detail its duties. The organization would be funded by the member states the same way ICAO is presently funded.

#### Planks 3-6 solve ozone – rocket launches not key and every plank is an alt cause

GreenDiary n/d [Environmental News and Blog, “”How to prevent Ozone depletion (and what would happen if we don’t)” https://greendiary.com/5-ways-prevent-ozone-depletion.html]

One of the easiest ways to reduce damages caused to the ozone layer is by limiting the use of vehicles. This is because vehicular emissions eventually result in the release of smog. This in turn also damages the ozone layer causing it to deteriorate. If you are looking for ways on how to prevent ozone depletion, then you do have certain effective option. You can choose to take the public transport or use a bicycle. Another great way to restrict the use of car is by opting for Car Pooling. If you do want to use a vehicle, then it is recommended to switch to an electric or hybrid vehicle. Even better, you can opt for vehicles that run solely on solar power. Scroll to the end of the article for a list of the same.

2. Use eco-friendly household cleaning products

Usage of eco-friendly and natural cleaning products for household chores is a great way to prevent ozone depletion. This is because many of these cleaning agents contain toxic chemicals that interfere with the ozone layer. A lot of supermarkets and health stores sell cleaning products that are toxic-free and made out of natural ingredients.

3. Avoid using pesticides and prevent ozone depletion

Overuse-of-pesticides

Pesticides may be an easy solution for getting rid of weed, but are harmful for the ozone layer. The best solution for this would be to try using natural remedies, rather than heading out for pesticides. You can perhaps try to weed manually or mow your garden consistently so as to avoid weed-growth. Or else, try Urban Aerofarming, which requires less water, less space and little to no amount of pesticides. To know more about Urban Aerofarms, scroll down. You can check out the different DIY ideas to make your own eco-friendly pesticides at home to prevent ozone depletion.

4. Developing stringent regulations for rocket launches

The world is progressing at a drastic pace. As we progress on various scientific discoveries, the need of the hour also requires people to travel out of space. The number of rocket launches has increased drastically. This in turn is equally damaging the ozone layer in many ways. A study shows that the harm caused by rocket launches would outpace the harm caused due to CFCs.

At present, the global rocket launches do not contribute hugely to ozone layer depletion. Due to the advancement of the space industry, it will become a major contributor to ozone depletion. All types of rocket engines result in combustion by products that are ozone-destroying compounds that are expelled directly in the middle and upper stratosphere layer – near the ozone layer.

5. Banning the use of dangerous nitrous oxide

Ozone-Layer-DepletionIn the late 70’s the world was taken by surprise with a study that triggered a red alert pertaining to the destruction caused to the ozone layer. It had all the necessary information that helped us to understand what exactly was going on. Even the facts and figures mentioned in the study clearly pointed out towards the alarming rate of how the ozone layer was being depleted.

Nations around the globe got together in 1989 and formed the Montreal Protocol. The main aim behind this was to stop the usage of CFCs. However, the protocol did not include nitrous oxide which is the most fatal chemical that can destroy the ozone layer and is still in use. Governments across the world should take a strong stand for banning the use of this harmful compound to save the ozone layer.

6. Avoiding Ozonolysis Purifiers

Air-Purifier

Are we risking our health and environment with the development of new technology? We believe that air purifiers are an effective way to fight air pollutants but they can actually have the harmful effects, which we are not aware of.

## ~~New technology has allowed companies to make products which can “freshen” air by producing ozone which~~ is not healthy to humans in large quantities. These ozone layers can actually react with existing particles in the air and make them more dangerous.

## 5

#### LEO is uniquely accessible to African industry due to cheaper launch and production costs – that solves Earth Observation, internet, national security, and spills over to enrich the economy

Samanga 21 Ruvimbo Samanga, Zimbabwean scholar and lawyer working with the Space Law & Policy, holds a BA Law (cum laude), an LLB and an LLM in International Trade and Investment Law from the University of Pretoria. "Why Africa Should Expand its Mega-Satellite Constellation Capacity." Space Legal Issues, 3 May. 2021, www.spacelegalissues.com/why-africa-should-expand-its-mega-satellite-constellation-capacity.

Since 1988, Africa has spent approx. USD$4 billion towards the launch of 41 satellites (excluding the cost of the RASCOM-QAF 1R replacement). 30 of these satellites fall into the Small Satellite market. The majority of satellites owned by African institutions typically involves satellites with less than 600kgs in fueled mass and 24 of these satellites have less than 200kg fueled mass. The reason for the interest in the miniaturized satellites? In a nutshell, they offer cheaper design alternatives, coupled with the ease of mass production. They are also significantly more versatile in certain applications, owing to their reduced size. For example, they are the satellite of choice for low data rate communications, being launched in large multi-coverage constellations in Low Earth Orbit (LEO). It comes as no surprise then that small satellites are growing increasingly popular amongst developing countries, no less within the region, for the accessibility. The growth of the small satellite industry is evident in commercial as well as large programs which exhibit steady growth. In 2019, 5 African countries launched 8 satellites, 6 of which were small satellites. It is expected that by the year 2024, 19 African countries would have launched additional satellites into space. These small, sometimes called nano-satellites, are really driving the African space program, especially in line with the African Union’s (AU) science and technology ambitions which are expected to reap huge benefits for the continent. Most importantly through the AU Science, Technology and Innovation Science Strategy for Africa – 2024 (STISA-2024). Small satellites are categorized as space systems of up to 600 kg (falling into the categories of Minisatellites, Microsatellite, Nanosatellite, Picosatellite, and Femto Satellites). They range across different applications (Satellite Communications, Imaging & Earth Observations, Space Situational Awareness, and Technology Development), and have different end users (Government & Defense, and Civil & Commercial). Of the 8 satellites launched in 2019, 6 were small satellites (3 Nanosatellites, 2 Microsatellites, and 1 Picosatellite). Satellite communications mega-constellations are on the rise, however this growing interest is not without its challenges and uncertainties. The biggest risks in the small sat interest in the coming years are mostly ascribed to investor’s rick assessment & funding availability; Securing customers & Return on Investment (ROI); Stronger regulations; Competition from heavier satellite, and reliability. This is also further compounded by the fact that establishing a satellite service industry which is sustainable requires adequate funding. Skillset deficit is also a prominent challenge. Even though Africa has and will in future have the largest population of young people, the youth are generally not interested in pursuing careers in STEM (science, technology, engineering and mathematics). You can expect more satellites to be launched despite these crises. As regards the African Small Sat market, the growth perspectives seem to point towards predominant university projects which demonstrates a capacity to operate Smallsats, also attesting to the affordability of the systems. This is also a sign of government effort to support the growth of this industry, and the contributions of the youth in satellite development. Indeed the manufacturing ability is extremely important, but also the service capability and development prospects. Despite these positive steps there is still quite a need for funding in this area. Of the overall revenue and results, Earth Observation is the most predominant small sat use, however it is expected in the next few years this may shift to internet broadband, but ultimately, creating value for users and enabling services that drive industry development will be the ultimate determining factor. Internet coverage allows people to create capacity and this might undoubtedly be Africa’s most prolific use of small satellite solutions. CubeSats which are around 50 kg, are the most popular and are only getting bigger because of the interest for carrying larger payloads. But in future it may become less stringent to use the restricted platform, but the threshold is bound to switch to a smaller regular platform. These services are enabled through satellite mega-constellations. Satellite mega-constellations operate in the Lower Earth Orbit which is described as the orbit located no more than 2,000 kilometers from the Earth’s surface. There is room for LEO regarding low-latency connectivity. But this does not mean that the Geostationary Orbit will become redundant, rather, and on the other hand GEO will remain an asset for broadband, because of its efficiency and coverage as well as less-sophisticated ground segments. Nevertheless, the LEO offers the most advantageous orbital resource to come and deserves much policy intervention to regulate, owing to the fact that it is a finite, scare resource. At the end of the day, whether Smallsats are launched in a constellation or as individual space systems, they offer a cost-effective alternative to traditional space objects, and would allow Africa the opportunity to release its potential in various areas of interest including but not limited to communications, global positioning and navigation, and Earth observation. Africa would be enriched by the ability to use this new technology to enable users through diverse services, to protect assets within the value chain, or simply to monitor areas of national security such as the environment and borders. These are all aspects which will have a substantial developmental impact in the African economy, and is well aligned to the African space policy which speaks towards increase of space and satellite capacity in an affordable and beneficial manner.

#### LEO Earth Science Observation Satellites uniquely solve a host of environmental threats – pollution, climate change, biod, defo, soil erosion

Ustin and Middleton 20 Ustin, S.L. [John Muir Institute of the Environment, University of California, Davis] , Middleton, E.M [NASA/Goddard Space Flight Center (Emerita)]. Current and near-term advances in Earth observation for ecological applications. Ecol Process 10, 1 (2021). https://doi.org/10.1186/s13717-020-00255-4

There is an unprecedented array of new satellite technologies with capabilities for advancing our understanding of ecological processes and the changing composition of the Earth’s biosphere at scales from local plots to the whole planet. We identified 48 instruments and 13 platforms with multiple instruments that are of broad interest to the environmental sciences that either collected data in the 2000s, were recently launched, or are planned for launch in this decade. We have restricted our review to instruments that primarily observe terrestrial landscapes or coastal margins and are available under free and open data policies. We focused on imagers that passively measure wavelengths in the reflected solar and emitted thermal spectrum. The suite of instruments we describe measure land surface characteristics, including land cover, but provide a more detailed monitoring of ecosystems, plant communities, and even some species then possible from historic sensors. The newer instruments have potential to greatly improve our understanding of ecosystem functional relationships among plant traits like leaf mass area (LMA), total nitrogen content, and leaf area index (LAI). They provide new information on physiological processes related to photosynthesis, transpiration and respiration, and stress detection, including capabilities to measure key plant and soil biophysical properties. These include canopy and soil temperature and emissivity, chlorophyll fluorescence, and biogeochemical contents like photosynthetic pigments (e.g., chlorophylls, carotenoids, and phycobiliproteins from cyanobacteria), water, cellulose, lignin, and nitrogen in foliar proteins. These data will enable us to quantify and characterize various soil properties such as iron content, several types of soil clays, organic matter, and other components. Most of these satellites are in low Earth orbit (LEO), but we include a few in geostationary orbit (GEO) because of their potential to measure plant physiological traits over diurnal periods, improving estimates of water and carbon budgets. We also include a few spaceborne active LiDAR and radar imagers designed for quantifying surface topography, changes in surface structure, and 3-dimensional canopy properties such as height, area, vertical profiles, and gap structure. We provide a description of each instrument and tables to summarize their characteristics. Lastly, we suggest instrument synergies that are likely to yield improved results when data are combined. Background Many environmental scientists have concluded that the Earth is at or near one or more perilous climate tipping points (Krieger et al. 2009; Lenton, 2011, Lenton and Williams 2013; Brook et al. 2013; Hickman et al., 2019). Climate change interacts with and exacerbates many other environmental and societal problems. These include air and water pollution that compound health issues (Harlan and Ruddell 2011; Kan et al. 2012), especially in poor communities (Schlosberg and Colins 2014; Hallegatte and Rozenberg 2017), widespread and/or frequent droughts linked to extensive fires (Amiro et al. 2001; Littell et al. 2016), diminished resources for drinking water and irrigation (Jackson et al. 2001; Oki and Kanae 2006), and large-scale biodiversity losses (Lindenmayer and Likens 2011; Pires et al. 2018) , including species extinctions (Cahill et al. 2013). Related factors include deforestation (Green and Sussman 1990) and soil erosion (Hill et al., 2009, consequences of over-exploitation of resources (Giri et al. 2007) due to massive global conversion of natural resources for human uses (Seto et al. 2002. ~~Documentation of all of these problems and many others are of interest to the broader ecological community at scales from local to global. This can only realistically be accomplished with satellite observations in combination with process and statistical models to reveal patterns and trends that enlighten understanding about how current conditions have developed from past environmental drivers in order to predict future conditions.~~

#### Warming causes extinction

David **Spratt 19**, Research Director for Breakthrough National Centre for Climate Restoration, Ian Dunlop, member of the Club of Rome, formerly an international oil, gas and coal industry executive, chairman of the Australian Coal Association, May 2019, “Existential climate-related security risk: A scenario approach,” https://docs.wixstatic.com/ugd/148cb0\_b2c0c79dc4344b279bcf2365336ff23b.pdf

An existential risk to civilisation is one posing **permanent large negative consequences** to humanity which may never be undone, either **annihilating intelligent life** or permanently and drastically curtailing its potential.

With the commitments by nations to the 2015 **Paris** Agreement, the current path of warming is 3°C or more by 2100. But this figure does not include “long-term” **carbon-cycle feedbacks**, which are materially relevant now and in the near future due to the **unprecedented** **rate** at which human activity is perturbing the climate system. Taking these into account, the Paris path would lead to around 5°C of warming by 2100.

Scientists warn that warming of 4°C is incompatible with an organised global community, is **devastating** to the **majority of** **ecosystems**, and has a **high probability** of not being stable. The World Bank says it may be “**beyond adaptation**”. But an existential threat may also exist for many peoples and regions at a significantly lower level of warming. In 2017, 3°C of warming was categorised as “catastrophic” with a warning that, on a path of unchecked emissions, low-probability, high-impact warming could be catastrophic by 2050.

The Emeritus Director of the Potsdam Institute, Prof. Hans Joachim Schellnhuber, warns that “climate change is now reaching the **end-game**, where very soon humanity must choose between **taking** **unprecedented action**, or accepting that it has been left too late and **bear** **the consequences**.” He says that if we continue down the present path “there is a very big risk that we will just **end** **our** **civilisation**. The human species will survive somehow but we will destroy almost everything we have built up over the last two thousand years.”11

Unfortunately, conventional risk and probability analysis becomes useless in these circumstances because it excludes the full implications of outlier events and possibilities lurking at the fringes.12

Prudent risk-management means a tough, objective look at the real risks to which we are exposed, especially at those **“fat-tail” events**, which may have consequences that are damaging beyond quantification, and **threaten** **the** **survival** **of human** **civilisation**.

Global warming projections display a “fat-tailed” ~~distribution with a~~ **~~greater likelihood~~** ~~of warming that is well in~~ **~~excess of~~****~~the~~****~~average amount~~****~~of warming~~****~~predicted by~~****~~climate~~****~~models~~**~~, and~~ are of a higher probability than would be expected under typical statistical assumptions. More importantly, the risk lies disproportionately in the “fat-tail” outcomes, as illustrated in Figure 1.

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## ~~6~~

Text: States except for Africa ought to prohibit the appropriation of Low Earth Orbit by private entities

* Solves the net benefits of the plan because they don’t specify that African satellites are bad
* Solves net benefit of the disad too

## 7

#### US wins space race now due to private competition – its key to space dominance.

Weichert 21 – former Congressional staff member who holds a Master of Arts in Statecraft & National Security Affairs from the Institute of World Politics in Washington, D.C. He is the founder of The Weichert Report: An Online Journal of Geopolitics [Brandon, “The Future of Space Exploration Depends on the Private Sector,” 7/5/2021, https://www.nationalreview.com/2021/07/the-future-of-space-exploration-depends-on-the-private-sector/#slide-1]

As Jeff Bezos, the wealthiest man on the planet, readies to launch himself into space aboard one of his own rockets, the world is watching the birth of a new dawn in space. Previously, America relied on its government agency, NASA, to propel it to the cosmos during the last space race with the Soviet Union. Today, America’s greatest hopes are with its private sector.

Jeff Bezos is not engaging in such risky behavior simply because he’s an adrenaline junky. No, he’s launching himself into orbit because his Blue Origins is in a titanic struggle with Elon Musk’s SpaceX — and Bezos’s firm is losing.

Whatever happens, the American people will benefit from the competition that is shaping up between America’s space entrepreneurs. This has always been how innovation occurs: through the dynamic, often cutthroat competition between actors in the private sector. While money is their ultimate prize, fame and fortune are also alluring temptations to make men like Musk and Bezos risk much of their wealth to change the world.

The private space race among these entrepreneurs is part of a far more important marathon between Red China and the United States. Whichever nation wins the new space race will determine the future of the earth below.

Consider this: Since winning its initial contracts to launch sensitive U.S. military satellites into orbit, SpaceX has lowered the cost of military satellite launches on taxpayers by “over a million dollars less” than what bigger defense contractors can do. Elon Musk is convinced that he can bring these costs down even more, thanks to his reusable Falcon 9 rocket.

The competition between the private space start-ups is fierce — just as the competition between Edison and Westinghouse was — but the upshot is ultimately greater innovation and lower costs for you and me. In fact, Elon Musk insists that if NASA gives SpaceX the contract for building the Human Landing System for the Artemis mission, NASA would return astronauts to the lunar surface by 2024 — four years before NASA believes it will do so. (Incidentally, 2024 is also when China anticipates having a functional base on the moon’s southern pole.)

Whereas China has an all-of-society approach to its space race with the United States, Washington has yet to fully galvanize the country in the way that John F. Kennedy rallied America to wage — and win — the space race in the Cold War. America’s private sector, therefore, is the silver bullet against China’s quest for total space dominance. If left unrestricted by meddlesome Washington bureaucrats, these companies will ensure that the United States retains its overall competitive advantage over China — and all other challengers, for that matter.

Indeed, the next four years could prove decisive in who will be victorious.

Enter the newly minted NASA director, Bill Nelson, whose station at the agency has effectively poured cold water on the private sector’s ambitious space plans. “Space is not going to be the Wild West for billionaires or anyone else looking to blast off,” Nelson admonished an inquiring reporter.

Why not?

America’s actions during its western expansion created a dynamic and advanced nation that was well-positioned to dominate the world for the next century. Should we not attempt to emulate this in order to remain dominant in the next century?

More important, this is precisely how China treats space: as a new Wild West . . . but one in which Beijing’s forces will dominate. China takes a leap-without-looking approach to space development — everything that can be done to further its grand ambition of becoming the world’s most dominant power by 2049 will be done. Meanwhile, the Biden administration wants to prevent America’s greatest strength, the free market, from helping to beat its foremost geopolitical competitor.

Nelson’s comments are fundamentally at odds with America’s spirit and animating principles. Whatever one’s opinion about Bezos or Musk, the fact is that their private space companies are inspiring greater innovation today in the space sector after years of its being left in the sclerotic hands of the U.S. government.

Sensing that the federal government’s dominance of U.S. space policy is waning, the Biden administration would rather cede the strategic high ground of space to China than let wildcatting innovators do the hard work. Today, the Federal Aviation Authority (FAA) and NASA are contriving new ways for strangling the budding private space sector, just as it is taking flight.

Risk aversion is not how one innovates. Risk is what led Americans to the moon just 66 years after the Wright brothers flew their first airplane. A willingness for risk doesn’t exist today in the federal government — which is why the feds shouldn’t be running space policy.

The U.S. government should be partnering with the new space start-ups, not shunning them. The FAA should be automatically approving SpaceX launches, not stymying them. The federal government will not win space any more than it could win the West or build the locomotive. It takes strong-willed, brilliant individuals of a rare caliber to do that. All government can do is to give the resources and support to private-sector innovators and let them make history for us.

The next decade will decide who wins space. Let it be America — and let America’s dynamic start-ups win that race, not China’s state capitalism.

#### Space deterrence solves nuclear war.

Parker 17 [Clifton B. Parker, Center for International Security and Cooperation; citing Air Force Gen. John Hyten, commander of the U.S. Strategic Command, “Deterrence in space key to U.S. security,” 01/24/17, *U.S. Strategic Command*, https://www.stratcom.mil/Media/News/News-Article-View/Article/1059106/deterrence-in-space-key-to-us-security/, EA]

Space is more important than ever for the national security of the United States, but it’s almost like the Wild West in terms of behavior, a top general said today.

Air Force Gen. John Hyten, commander of the U.S. Strategic Command, spoke Jan. 24 at Stanford’s Center for International Security and Cooperation. His talk was titled, “U.S. Strategic Command Perspectives on Deterrence and Assurance.”

Hyten said, “Space is fundamental to every single military operation that occurs on the planet today.” He added that “there is no such thing as a war in space,” because it would affect all realms of human existence, due to the satellite systems. Hyten advocates “strategic deterrence” and “norms of behavior” across space as well as land, water and cyberspace.

Otherwise, rivals like China and Russia will only threaten U.S. interests in space and create havoc for humanity below, he said.

Hyten also addressed other topics, including recent proposals by some to upgrade the country’s missile defense systems.

“You just don’t snap your fingers and build a state of the art anything overnight,” Hyten said, adding that he has not yet spoken to Trump administration officials about the issue. “We need a powerful military,” but a severe budget crunch makes “reasonable solutions” more likely than expensive and unrealistic ones.

On the upgrade front, Hyten said he favors a long-range strike missile system to replace existing cruise missiles; a better air-to-air missile for the Air Force; and an improved missile defense ground base interceptor.

‘Critically dependent’

From satellites to global-positioning systems (GPS), space has transformed human life – and the military – in the 21st century, Hyten said.

As the commander of the U.S. Strategic Command, Hyten oversees the global command and control of U.S. strategic forces, providing options for the president and secretary of defense. In particular, this command is charged with space operations (such as military satellites), information operations (such as information warfare), missile defense, global command and control, intelligence, surveillance, and reconnaissance, global strike and strategic deterrence (the U.S. nuclear arsenal), and combating weapons of mass destruction.

Hyten explained that every drone, fighter jet, bomber, ship and soldier is “critically dependent” on space to conduct their own operations. All cell phones use space, and the GPS command systems overall are managed at Strategic Command, he said.

“No soldier has to worry about what’s over the next hill,” he said, describing GPS capabilities, which have fundamentally transformed humanity’s way of life.

Space needs to be available for exploration, he said.

“I watch what goes on in space, and I worry about us destroying that environment for future generations.” He said that too many drifting objects and debris exist – about 22,000 right now. A recent Chinese satellite interception created a couple thousand more debris objects that now circle about the Earth at various altitudes and pose the risk of striking satellites.

“We track every object in space” now, Hyten said, urging “international norms of behavior in space.”

He added, “We have to deter bad behavior on space. We have to deter war in space. It’s bad for everybody. We could trash that forever.”

But now rivals like China and Russia are building weapons to deploy in the lower levels of space. “How do we prevent this? It’s bigger than a space problem,” he said.

Deterring conflict in the cyber, nuclear and space realms is the strategic deterrence goal of the 21st century, Hyten said.

“The best way to prevent war is to be prepared for war,” he said.

Hyten believes the U.S. needs a fundamentally different debate about deterrence. And it all starts with nuclear weapons.

“In my deepest heart, I wish I didn’t have to worry about nuclear weapons,” he said. Hyten described his job as “pretty sobering, it’s not easy.”

But he also noted the mass violence of the world prior to 1945 when the first atomic bomb was used. Roughly 80 million people died from 1939 to 1945 during World War II. Consider that in the 10-plus years of the Vietnam War, 58,000 Americans were killed. That’s equivalent to two days of deaths in WWII, he said.

In a world without nuclear weapons, a rise in conventional warfare would produce great numbers of mass casualties, Hyten said. About war, he said, “Once you see it up close, no human will ever want to experience it.”

Though America has “crazy enemies” right now, in many ways the world is more safe than during WWII, Hyten said. The irony is that nuclear weapons deterrence has kept us from thetype of mass killings known in events like WWII. But the U.S. must know how to use its nuclear deterrence effectively.

Looking ahead, Hyten said the U.S. needs to change and think about space as a potential war environment. An attack in space might not mean a response in space, but on the Earth.

## Case

The role of the ballot is to vote for the better debater - the only fair way the judge can determine the winner of the round - their rob is self serving and arbitrary

**Extinction outweighs since Extinction comes first –**

**1 – Forecloses future improvement – we can never improve society because our impact is irreversible**

**2 – Turns suffering – mass death causes suffering because people can’t get access to resources and basic necessities**

**3 – Moral obligation – allowing people to die is unethical and should be prevented because it creates ethics towards other people**

#### 2 – Growth is sustainable and solves a laundry list of threats.

Mark **Budolfson 21**. PhD in Philosophy. Assistant Professor in the Department of Environmental and Occupational Health and Justice at the Rutgers School of Public Health and Center for Population–Level Bioethics "Arguments for Well-Regulated Capitalism, and Implications for Global Ethics, Food, Environment, Climate Change, and Beyond". Cambridge Core. 5-7-2021. https://www-cambridge-org.proxy.library.emory.edu/core/journals/ethics-and-international-affairs/article/arguments-for-wellregulated-capitalism-and-implications-for-global-ethics-food-environment-climate-change-and-beyond/96F422D04E171EECDEF77312266AE9DD

Discourse on food ethics often advocates the **anti-capitalist idea** that we need **less capitalism, less growth, and less globalization** if we want to make the world a better and more equitable place, with arguments focused on applications to food, globalization, and a just society. For example, arguments for this anti-capitalist view are at the core of some chapters in nearly every handbook and edited volume in the rapidly expanding subdiscipline of food ethics. None of these volumes (or any article published in this subdiscipline broadly construed) focuses on a defense of globalized capitalism.1∂ More generally, discourse on global ethics, environment, and political theory in much of academia—and in society—increasingly features this anti-capitalist idea as well.2 The idea is especially prominent in discourse surrounding the environment, climate, and global poverty, where we face a nexus of problems of which capitalism is a key driver, including climate change, air and water pollution, the challenge of feeding the world, ensuring sustainable development for the world's poorest, and other interrelated challenges.∂ It is therefore important to ask whether this anti-capitalist idea is justified by **reason and evidence** that is as strong as the degree of confidence placed in it by activists and many commentators on food ethics, global ethics, and political theory, more generally.∂ In fact, many **experts** argue that this anti-capitalist idea is **not supported by reason and argument and is actually wrong**. The main contribution of this essay is to explain the structure of the leading arguments against the anti-capitalist idea, and in favor of the opposite conclusion. I begin by focusing on the general argument in favor of **well-regulated globalized capitalism** as the key to a **just, flourishing, and environmentally healthy world**. This is the most important of all of the arguments in terms of its consequences for health, wellbeing, and justice, and it is endorsed by experts in the **empirically minded disciplines** best placed to analyze the issue, including experts in long-run global development, human health, wellbeing, economics, law, public policy, and other related disciplines. On the basis of the arguments outlined below, well-regulated capitalism has been endorsed by recent Democratic presidents of the United States such as Barack Obama, and by progressive Nobel laureates who have devoted their lives to human development and more equitable societies, as well as by a wide range of experts in government and leading **n**on**g**overnmental **o**rganization**s**.∂ The goal of this essay is to make the structure and importance of these arguments clear, and thereby highlight that discourse on global ethics and political theory should engage carefully with them. The goal is not to endorse them as necessarily sound and correct. The essay will begin by examining general arguments for and against capitalism, and then turn to implications for food, the environment, climate change, and beyond.∂ Arguments for and against Forms of Capitalism∂ The Argument against Capitalism∂ Capitalism is often argued to be a key driver of many of society's ills: inequalities, pollution, land use changes, and incentives that cause people to live differently than in their ideal dreams. Capitalism can sometimes deepen injustices. These negative consequences are easy to see—resting, as they do, at the center of many of society's greatest challenges.3∂ And at the same time, it is often difficult to see the positive consequences of capitalism.4 What are the positive consequences of allowing private interests to clear-cut forests and plant crops, especially if those private interests are rich multinational corporations and the forests are in poor, developing countries whose citizens do not receive the profits from deforestation? Why give private companies the right to exploit resources at all, since exploitation almost always has some negative consequences such as those listed above? These are the right questions to ask, and they highlight genuine challenges to capitalism. And in light of these challenges, it is reasonable to consider the possibility that perhaps a different economic system altogether would be more equitable and beneficial to the global population.∂ The Argument for Well-Regulated Capitalism∂ However, **things are more complicated than the arguments above would suggest**, and the benefits of capitalism, especially for the world's poorest and most vulnerable people, are in fact myriad and **significant**. In addition, as we will see in this section, many experts argue that **capitalism is not the fundamental cause of the** previously described **problems** but rather an essential component of the **best solutions** to them and of the best methods for promoting our goals of health, well-being, and justice.∂ To see where the defenders of capitalism are coming from, consider an analogy involving a response to a pandemic: if a country administered a rushed and untested vaccine to its population that ended up killing people, we would not say that vaccines were the problem. Instead, the problem would be the flawed and sloppy policies of vaccine implementation. Vaccines might easily **remain** absolutely **essential** to the correct response to such a pandemic and could also be essential to promoting health and flourishing, more generally.∂ The argument is similar with capitalism according to the leading mainstream arguments in favor of it: Capitalism is an essential part of the best society we could have, just like vaccines are an essential part of the best response to a pandemic such as COVID-19. But of course both capitalism and vaccines can be implemented poorly, and can even do harm, especially when combined with other incorrect policy decisions. But **that does not mean that we should turn against them**—quite the opposite. Instead, we should **embrace them as essential** to the best and most just outcomes for society, and educate ourselves and others on their importance and on how they must be **properly designed and implemented** with other policies in order to best help us all. In fact, the argument in favor of capitalism is even more dramatic because it claims that much more is at stake than even what is at stake in response to a global pandemic—what is at stake with capitalism is nothing less than **whether the world's poorest and most vulnerable billion people will remain in conditions of poverty and oppression**, or if they will instead finally gain access to what is minimally necessary for basic health and wellbeing and become increasingly affluent and empowered. The argument in favor of capitalism proceeds as follows:∂ Premise 1. Development and the past. Over the course of recorded human history, the majority of historical increases in health, wellbeing, and justice have occurred in the last two centuries, largely as a result of societies adopting or moving toward **capitalism**. Capitalism is a relevant cause of these improvements, in the sense that they could not have happened to such a degree if it were not for capitalism and would **not have happened to the same degree under any alternative** noncapitalist approach to structuring society. The argument in support of this premise relies on observed relationships across societies and centuries between indicators of degree of capitalism, wealth, investments in public goods, and outcomes for health, wellbeing, and justice, together with econometric analysis in support of the conclusion that the best explanation of these correlations and the underlying mechanism is that large increases in health, wellbeing, and justice are largely driven by increasing investments in public goods. The scale of increased wealth necessary to maximize these investments requires **capitalism**. Thus, as capitalist societies have become dramatically wealthier over the past hundred years (and wealthier than societies with alternative systems), this has allowed **larger investments in public goods**, which simply has not been possible in a sustained way in societies without the greater wealth that capitalism makes possible. Important investments in public goods include investments in basic **medical knowledge**, in health and nutrition programs, and in the institutional capacity and know-how to **regulate** society and **capitalism** itself. As a result, capitalism is a **primary driver** of positive outcomes in **health and wellbeing** (such as increased **life expectancy**, **lowered child and maternal mortality**, adequate calories per day, **minimized infectious disease rates**, a lower percentage and number of people in **poverty**, and more reported **happiness**);5 and in **justice** (such as reduced deaths from **war** and homicide; higher rankings in **human rights** indices; the reduced prevalence of **racist, sexist, homophobic opinions** in surveys; and higher literacy rates).6 These **quantifiable positive consequences of global capitalism** dramatically **outweigh** the negative consequences (such as deaths from pollution in the course of development), with the result that the net benefits from capitalism in terms of health, wellbeing, and justice have been greater than they would have been under any known noncapitalist approach to structuring society.7∂ Premise 2. Economics, ethics, and policy. Although capitalism has often been ill-regulated and therefore failed to maximize net benefits for health, wellbeing, and justice, **it can become well-regulated** so that it maximizes these societal goals, by including mechanisms identified by economists and other policy experts that do the following:∂ optimally8 **regulate negative effects** such as pollution and monopoly power, and invest in public goods such as education, basic healthcare, and fundamental research including biomedical knowledge (more generally, policies that correct the failures of free markets that economists have long recognized will arise from “externalities” in the absence of regulation);9∂ ensure equity and distributive justice (for example, via wealth redistribution);10∂ ensure basic rights, justice, and the rule of law independent of the market (for example, by an independent judiciary, bill of rights, property rights, and redistribution and other legislation to correct historical injustices due to colonialism, racism, and correct current and historical distortions that have prevented markets from being fair);11 and∂ ensure that there is no alternative way of structuring society that is more efficient or better promotes the equity, justice, and fairness goals outlined above (by allowing free exchange given the regulations mentioned).12∂ To summarize the implication of the first two premises, **well-regulated capitalism** is **essential** to best achieving our ethical goals—which is true even though capitalism has certainly not always been well regulated historically. Society can still do much better and **remove the large deficits** in terms of health, wellbeing, and justice **that exist under** the current inferior and **imperfect** versions of **capitalism**.∂ Premise 3. Development and the future. If the global spread of capitalism is allowed to continue, desperate **poverty can be** essentially **eliminated** in our lifetimes. Furthermore, this can be accomplished **faster** and in a more just way via **well-regulated** global **capitalism** than by **any alternatives**. If we instead opt for **less capitalism**, less growth, and less globalization, then desperate **poverty will continue** to exist for a significant portion of the world's population into the further future, and the world will be a **worse and less equitable** place than it would have been with more capitalism. For example, in a world with less capitalism, there would be more **overpopulation, food insecurity**, air **pollution**, ill health, injustice, and other problems. In part, this is because of the factors identified by premise 1, which connect a turn away from capitalism with a turn away from continuing improvements in health, wellbeing, and justice, especially for the developing world. In addition, fertility declines are also a consequence of increased wealth, and the size of the population is a primary determinant of **food demand and other environmental stressors**.13 Finally, as discussed at length in the next section of the essay, capitalism can be naturally combined with optimal **environmental regulations**.14 Even bracketing anything like optimal regulation, it remains true that sufficiently **wealthy nations reduce environmental degradation** as they become wealthier, whereas developing nations that are nearing peak degradation will remain **stuck at the worst levels of degradation if we stall growth**, rather than allowing them to transition to less and less degradation in the future via capitalism and economic growth.15 In contrast, well-regulated capitalism is a key part of the best way of coping with these problems, as well as a key part of **dealing with climate change**, global **food production**, and other specific challenges, as argued at length in the next section. Here it is important to stress that we should favor well-regulated capitalism that includes correct investments in public goods over other capitalist systems such as the neoliberalism of the recent past that promoted inadequately regulated capitalism with inadequate concern for externalities, equity, and background distortions and injustices.16∂ Conclusion. Therefore, we should be in favor of capitalism over noncapitalism, and we should especially favor well-regulated capitalism, which is the ethically optimal economic system and is essential to any just basic structure for society.∂ This argument is impressive because, as stated earlier in the essay, it is based on **evidence** that is so striking that it leads a bipartisan range of open-minded thinkers and activists to endorse well-regulated capitalism, including many of those who were not initially attracted to the view because of a reasonable concern for the societal ills with which we began. To better understand why such a range of thinkers could agree that well-regulated capitalism is best, it may help to clarify some things that are not assumed or implied by the argument for it, which could be invoked by other bad arguments for capitalism.∂ One thing the argument above does not assume is that health, wellbeing, or justice are the same thing as wealth, because, in fact, they are not. Instead, the argument above relies on well-accepted, **measurable indicators** of health and wellbeing, such as increased lifespan; decreased early childhood mortality; adequate nutrition; and other empirically measurable leading indicators of health, wellbeing, and justice.17 Similarly, the argument that capitalism promotes justice, **peace**, freedom, human rights, and tolerance relies on empirical metrics for each of these.18∂ Furthermore, the argument does not assume that because these indicators of health, wellbeing, and justice are highly correlated with high degrees of capitalism, that therefore capitalism is the direct cause of these good outcomes. Rather, the analyses suggest instead that something other than capitalism is the direct cause of societal improvements (such as improvements in knowledge and technology, public infrastructure, and good governance), and that capitalism is simply a **necessary condition** for these improvements to happen.19 In other words, the richer a society is, the more it is able to invest in all of these and other things that are the direct causes of health, wellbeing, and justice. But, to maximize investment in these things societies need well-regulated capitalism.∂ As part of these analyses, it is often stressed that current forms of capitalism around the world are highly defective and must be reformed in the direction of well-regulated capitalism because they lack investments in public goods, such as basic knowledge, healthcare, nutrition, other safety nets, and good governance.20 In this way, an argument for a particular kind of **progressive reformism** is an essential part of the analyses that lead many to endorse the more general argument for well-regulated capitalism.∂ Although these analyses are nuanced, and appropriately so, it remains the case that the things that directly lead to health, wellbeing, and justice require resources, and the best path toward generating those resources is well-regulated capitalism. And on the flip side, according to the analyses behind premise 1 described above, an anti-capitalist system would not produce the resources that are needed, and would thus be a **disaster**, especially for the **poorest billion** people who are most desperately in need of the resources that capitalism can create and direct, to escape from extreme poverty.21

#### 3 – Past the tipping point and the alt is dictatorship and genocide---only tech can solve.

Eric **Levitz 5/17/21**. Senior Writer at New York Magazine. MA Johns Hopkins. "We’ll Innovate Our Way Out of the Climate Crisis or Die Trying". Intelligencer. 5-17-2021. https://nymag.com/intelligencer/2021/05/climate-biden-green-tech-innovation.html

Today’s best-case ecological scenario was a horror story just three decades ago. In 1993, Bill Clinton declared that global warming presented such a profound threat to civilization that the U.S. would have to bring its “emissions of greenhouse gases to their 1990 levels by the year 2000.” Instead, we waited until 2020 to do so; in the interim, **humanity burned more carbon than it had since the advent of agriculture**. Now, it will take a historically unprecedented, worldwide economic transformation to freeze warming at **“only” 2 degrees** — a level of temperature rise that will turn “once in a century” storms into annual events, **drown entire island nations**, and render **major cities** in the Middle East **uninhabitable** in summertime (at least for those whose lifestyles involve “walking outdoors without dying of heatstroke”). This is what passes for a **utopian vision in 2021**. If we confine ourselves to mere **optimism** — and assume that every Paris Agreement signatory meets its current pledged target for decarbonization — then warming will hit 2.4 degrees by century’s end.∂ The reality of our ecological predicament invites denial of our political one. Put simply, it is hard to reconcile the scale of the climate crisis with the limits of contemporary American politics. **Delusions rush in to fill the gap**. Among these is the fantasy of national autonomy; the notion that the United States can save the planet or destroy it, depending on the precise timeline of its domestic decarbonization. A rapid energy transition in the U.S. is a vital cause, not least for its potential to expedite similar transformations abroad. But the battle for a sustainable planet will be won or lost in the developing world. Although American consumption played a central role in the history of the climate crisis, it is peripheral to the planet’s future: Over the coming century, U.S. emissions are expected to account for only 5 percent of the global total.∂ There is also the **delusion of “de-growth’s” viability**. The fact that there is no plausible path for global economic expansion that won’t entail climate-induced death and displacement has led some environmentalists to insist on global stagnation. Yet there is neither a mass constituency for this project, nor **any reason to believe that there will be** any time soon. Freeze the status-quo economy in amber, and you’ll **condemn nearly half of humanity to permanent poverty**. Divide existing GDP into perfectly even slices, and every person on the planet will live on about **$5,500 a year**. American voters may express a generalized concern about the climate in surveys, but they don’t seem willing to accept even a modest rise in gas prices — **let alone a total collapse in living standards** — to address the issue. Meanwhile, any Chinese or Indian leader who attempted to stymy income growth in the name of sustainability **would be ousted** in short order. It’s conceivable that one could radically reorder advanced economies in a manner that enabled living standards to rise even as GDP fell; Americans might well find themselves happier and more secure in an ultra-low-carbon communal economy in which individual car ownership is heavily restricted, and housing, healthcare, and myriad low-carbon leisure activities are social rights. But nothing short of an **absolute dictatorship** could affect such a transformation at the necessary speed. And the specter of eco-Bolshevism does not haunt the Global North. Humanity is going to find a way to **get rich sustainably, or die trying**.∂ Thus, the chasm between the ecologically necessary and the politically possible can only be bridged by **technological advance**. And on that front, **the U.S.** actually **has the resources** to make a decisive contribution to global decarbonization — and some **political will** to leverage those resources. Unfortunately, due to some combination of fiscal superstitions and misplaced priorities, the Biden administration’s proposed investments in green innovation remain paltry. An American Jobs Plan with much higher funding for green R&D is both imminently winnable and environmentally imperative. U.S. climate hawks should make securing such legislation a top priority.∂ The choice before us is **techno-optimism** or **barbarism**.∂ If governments are forced to choose between increasing income growth in the present, and mitigating temperature rise in the future, they are going to pick the **former**. We’ll get cheap, lab-grown Kobe beef before we get a U.S. Senate willing to tax meat, and steel plants powered by “green hydrogen” before we get **anarcho-primitivism** with Chinese characteristics.∂ The question is whether we’ll get such **breakthroughs before it’s too late**.∂ Techno-optimism has its hazards, but the progress we’ve made toward decarbonization has come largely through **technological innovation**. When India canceled plans to construct 14 gigawatts of new **coal**-fired power stations in 2019, it did **not do so in deference to** international pressure or domestic **environmental movements**, but rather to the **cost-competitiveness of solar** energy. The same story holds across **Asia’s** developing **countries**: Thanks to a ninefold reduction in the cost of solar energy over the past decade, the number of new coal plants slated for construction in the region has fallen by 80 percent. Meanwhile, the road to an electric-car revolution was cleared by a collapse in the cost of lithium batteries, the challenge of powering cities with solar energy on cloudy days was eased by a 70 percent drop in the price of utility-scale batteries, and wind power grew 40 percent cheaper. Our species remains **lackluster at solidarity** and self-government, but **we’ve got a real knack for building cool shit**.∂ The technological progress of the past decade was not sufficient to compensate for tepid climate policy. But real techno-utopianism has never been tried: As of 2019, global spending on clean energy R&D totaled $22 billion a year, or 3 percent of the Pentagon’s annual budget. Increasing spending on such research — while expediting cost-reductions in existing technologies by deploying them en masse — should be twin priorities of American climate policy.∂ **The preconditions for green industrialization can be made in America**.∂ The United States has more fiscal capacity and better-financed research universities than any nation on the planet. And, for all the pathologies of our politics, public investment in green tech inspires **far weaker opposition** than many less-indispensable climate policies. In fact, late last year, with Republicans controlling the Senate and Donald Trump in the White House, the U.S. increased funding for zero-emission technology R&D by $35 billion. America does not have **sovereignty over enough humans to save the planet by slashing our domestic emissions**. But we just might have the **resources and political economy necessary to help the developing world save us all**.∂ Although progress on renewables has exceeded optimistic expectations, the technical obstacles to global decarbonization remain immense. In the most optimistic scenario, scaling up existing, cost-competitive technologies can get us about 16 percent of the emissions reductions necessary for achieving net-zero by 2050, according to the International Energy Agency. Driving down the price of tech we already have will get us another 39 percent. The rest **must come from technologies** that have yet to be fully developed. We need electrified cement, hydrogen-powered steel plants, and evaporative cooling. We need utility-scale energy storage, electric airplanes, and ultra-high voltage transmission lines. And we’d be remiss to not toss a bit of our collective wealth at game-changing hail marys like nuclear fusion.

#### 4 – System changes are infeasible---can’t get governmental or international buy-in---reform is comparatively quicker.

Ezra **Klein 8/31/21**. American journalist, political analyst, New York Times columnist, and the host of The Ezra Klein Show podcast. "Transcript: Ezra Klein Answers Listener Questions". No Publication. 8-31-2021. https://www.nytimes.com/2021/08/31/podcasts/transcript-ezra-klein-ask-me-anything.html

EZRA KLEIN: Yeah. And maybe we should do an episode on this. I have very complicated feelings about degrowth. So one is that it is tricky to talk about, as you say, because I find its advocates will continue to say that you’re defining it wrong. So let me use a definition from Hickel, which is, and I’m quoting him here, “Degrowth is a planned reduction of energy and resource throughput designed to bring the economy back into balance with the living world in a way that reduces inequality and improves human well-being.”∂ And so I’d note two things here. One is “**designed**.” Degrowth is, as its advocates understand it, a act of global economic planning really **without equal anywhere in human history**. It is an act of **extraordinary central planning**. So that’s one thing that is going to become important in my answer.∂ I’d say there’s part of this vision I’m sympathetic to, and then part of it that I just don’t think holds together. I would distinguish a critique of want and a critique of growth. And the way I would do that is that, as you hear if you listen to the show, I’m pretty critical of a lot of the ways capitalism generates desire.∂ Desire is something we build through advertising, through social mimicry. This is a show that is supported by advertising. This is part of the desire- generation complex in its business model. And we are told and taught to want a lot of things, not only that we don’t need, but that don’t make us happier. And so not all growth as measured by G.D.P. is good growth.∂ But a lot of what people want is fine, or great, or whatever. It’s their desire, and it’s not for me to tell them the jeans they’re interested in are incorrect. And a lot of it **I don’t think is under the power of policymakers to control**. I don’t think it’s all advertising. I don’t know that if you cut down advertising, the amount people would spend on consumption would go way down. They might simply consume other things.∂ And so I want people to have rich, materially fulfilling lives. And I think **it’ll be a very hard piece to change**. So in terms of having a counterweight to the materialism, the ideology of materialism in modern society, that’s a part of degrowth that I’m very open to.∂ But now let me talk about degrowth more in the terms of it is a direct political project, which is as an answer to climate change. I would cut this into a few pieces. Is degrowth necessary for addressing climate change? Is it the fastest way to address climate change? And is it desirable? It has to be at least one of those things to be the strategy you’d want to take.∂ And **I don’t think it is**. Let’s start with necessary. Many countries in Europe, even the United States, are growing while reducing their carbon footprint. Now, you could say they’re not doing so fast enough depending on the country. But they could all do so much faster if there was enough political will to deploy more renewable technology, to tax carbon, to do a bunch of things that we have not been able to pass. So it is clearly true that **we can decouple growth and energy usage**.∂ Hickel, to be fair, will say that that may be true. But given the speed at which we need to act, we can’t just be deploying renewable energy technology. It would also help the situation if we stopped using as much through material consumption. That is, I think, conceptually true and politically false.∂ I mean, let’s just state that speed is, first and foremost, a **political problem**. There is a delta between where we are right now in terms of what we are doing on climate change and where we could be. That delta is big, and that delta gets bigger every year because it gets harder every year. And the time we have to act before we start getting some of the really truly catastrophic feedback loops in play is shortening. So you’re now talking here about the **speed at which you can move politics**.∂ So for something to be **faster**, it doesn’t just need to be faster if you implemented it. It **needs to be something you can implement** such it accelerates the politics of radical climate action. And that’s where I think **degrowth completely falls apart**. And I have tried to look for the answer people give on this, and I’ve **never found one that is convincing**.∂ So again, I’ll quote Hickel on this: “Degrowth has a discriminating approach to reducing economic activity. It seeks to scale down ecologically destructive and socially less necessary production, i.e., the production of S.U.V.s, arms, beef, private transportation, advertising and planned obsolescence” — by which he means there, the fact that expiration dates are built into a lot of our electronics — “while expanding socially important sectors like health care, education, care and conviviality.”∂ And I’d urge people to think about that for a minute. I mean, you can listen to that and you will assume correctly that I am sympathetic to the idea that a lot of those goods are not great. I’m a vegan. I don’t eat beef. I would like nobody else to eat beef.∂ I think that if the political demand of the climate movement becomes you don’t get to eat beef, you will **set climate politics back so far, so fast, it would be disastrous**. **Same thing with S.U.V.s.** I don’t like S.U.V.s. I don’t drive one. But if you are telling people in rich countries that the climate movement is for them not having the cars they want to have, **you are just going to lose. You are going to lose fast**.∂ We watched this happen for years before Elon Musk and some others began inventing cars that were both electrified and were actually cool cars. You weren’t going to get everybody in a Prius. You **might,** over time, **get them into the post-Tesla generations** of electronic vehicles.∂ This is where **the politics of it** for me **fall apart**. I’d at least like to see some **empirical evidence** for the claim that degrowthers are right, and that their appeal will **speed the politics of doing hard things** on climate change. Because I think it will **do the opposite**. And I don’t see politicians winning in the countries they would need to win on anything like this platform. **Quite the contrary**.∂ I watched the most effective attack against Joe Biden’s climate policies. It **dominated** the **news** for a day or two. It was Fox News just making up — just completely making up — a false claim that Biden was going to **limit or restrict red meat**.∂ ANNIE GALVIN: Right. [LAUGHS]∂ EZRA KLEIN: So my worry with degrowth is that it is trying to take the politics out of politics. It is attacking the flaws of the current strategy as not moving fast enough when the impediments are **political**, but then **not accepting the impediments to its own political path** forward.∂ I will say, because I think it’ll be weird to people if I don’t mention this, that there is the big problem, of course, that the rising generation of emissions is coming **from China, from India**. I think it’s something like ⅔ of emissions are now from **middle income countries**. That is **only going up**.∂ Hickel and other degrowthers will say that, yes, the point of this is that the rich countries, which have already used more than their fair share of the carbon budget, should cut their carbon usage so poor countries can grow. I cannot imagine how you are going to enforce this as a political and economic planning regime. **How you will get rich countries to agree** to do less so poor countries can have more. I mean, look at what has happened with **vaccine hoarding**.∂ I don’t want to say that this isn’t a good moral weight on the conversation or, in the long term, a good push for people to think about different ways of having growth, different ways of human flourishing. But the entirety — as the degrowth people will agree — the entire question of the climate change conversation is **speed**. And I just don’t see the argument for degrowth as being anything but an **extraordinarily slower way of approaching the politics**, probably **counterproductive compared to what we’re doing**, which is I think you can make tremendous strides on climate change by deploying renewable energy **technologies** and giving people the opportunity to have a more materially fulfilling life atop those technologies.∂ And by the way, when that happens in rich countries, as we have seen, it ends up subsidizing these renewable energy technological advances for poorer countries. So it is a fact that Germany and other countries did so much to subsidize solar for themselves, it has also made it possible for countries like China and India to have such a rapid advance in solar technology that it’s affordable for them to do a lot of their growth on that platform.∂ So I also think there are cross-subsidies in rich countries trying to maintain growth renewable energy deployment that end up helping poor countries change what they’re doing in a useful way, too. So that’s my take on degrowth. But I understand its appeal. I just **don’t understand its politics**.

#### 5 – Innovation solves climate---monetary incentives align even for climate deniers---abandoning capitalism fails.

Noah **Smith 9/24/21**. Assistant Professor of finance @ SUNY Stony Brook, an economics PhD student at the University of Michigan, an academic editor in Japan, and a physics major at Stanford. “Climate optimism of the will.” https://noahpinion.substack.com/p/climate-optimism-of-the-will

So yeah, I’m not going to tell young climate activists that things are going well. The planet is in a very tough spot. But what I am going to tell young climate activists is that despite their pessimism of the intellect, they should embrace optimism of the will. Not only does despair ultimately not help anything, but it’s increasingly unwarranted — yes, things are tough right now, but recent developments mean that the climate has more of a fighting chance than it has in recent memory. And the reason is that unlike the discouraged climate activists, can-do types in science, business and government have been rolling up their sleeves and fighting the good fight.

The fightback against climate doom has begun

Activists are understandably leery of the idea that new technologies will come along to save the planet just in the nick of time. After all, the incentives are in no way aligned for such a deus ex machina — given the fundamental externality of carbon emissions, there’s no reason why scientists and engineers should care enough about the climate to spend their lives inventing stuff to fix it.

And yet, they do. Even if the public doesn’t take the climate problem seriously enough, scientists and engineers do. And they have poured their hearts and souls and careers and fortunes into creating **cheap solar, cheap wind, cheap reliable batteries**. Let me just re-post my favorite graph:

Chart, diagram, line chart

Description automatically generated

This is the result of many decades of hard work by a huge number of actors in government, academia, and business.

Of course cheap solar and wind are only one piece of the technological puzzle here. For one thing, you need to store energy for when the sun isn’t shining and the wind isn’t blowing — not just from day to night, but from summer to winter. Normal lithium-ion batteries work great for the short term and have come down in cost enormously, but they won’t cut it for the longer-term stuff. But as David Roberts explains, some new longer-term storage technologies like Form Energy’s iron-based batteries may already be **competitive** with gas plants for firming up the grid in some markets.

Meanwhile, electricity and transportation only account for a little over half of emissions. But **technology is pressing ahead on every front**! Industrial processes need heat; so we’ll use **hydrogen** to store energy from renewable sources and burn it for heat. Steel requires carbon to make, but we have an increasing array of **new technologies** to address that too. Same for cement. And as for retrofitting buildings cheaply to use electricity instead of gas, I know of some very promising developments in that area as well (more to come on that later).

The point here is that we don’t have to depend on any one magical deus ex machina technology to come and save us. There is no single such technology. Instead, **everywhere you look**, scientists and **engineers are inventing new technologies to maintain our industrial society** while eliminating greenhouse emissions. And everywhere you look, companies are **eager** to both develop and purchase these technologies, promising to bring them down in cost the way solar and batteries have fallen in cost.

And a new report from the Institute for New Economic thinking suggests that this flurry of technological innovation has already changed the game in a fundamental way. In “Empirically grounded technology forecasts and the energy transition”, INET’s team notes that **we’ve consistently underestimated progress in renewable technology**. They argue that realistic forecasts mean that green energy will be so cheap that even businesses that don’t care about climate at all will now find it worth their while to **ditch fossil fuels**:

Here we take a new approach based on probabilistic cost forecasting methods that made reliable predictions when they were empirically tested on more than 50 technologies. We use these methods to estimate future energy system costs and find that, compared to continuing with a fossil-fuel-based system, a rapid green energy transition will likely result in overall net savings of many trillions of dollars - even without accounting for climate damages or co-benefits of climate policy. We show that if solar photovoltaics, wind, batteries and hydrogen electrolyzers continue to follow their current exponentially increasing deployment trends for another decade, **we achieve a near-net-zero emissions energy system within twenty-five years**. In contrast, a slower transition…is far more expensive. If non-energy sources of carbon emissions such as agriculture are brought under control, our analysis indicates that a rapid green energy transition would likely generate considerable economic savings while also meeting the 1.5 degrees Paris Agreement target. (emphasis mine).

Cheap renewable energy means that we **don’t have to convince everyone** in the world **to sacrifice** for the climate. **Every selfish businessperson** out there trying to make a buck now **has an incentive to switch** from coal to solar, just because it’s cheaper. (Note that **this completely blows degrowth arguments out of the water**, at least as regards climate change.)

And you can already see this start to materialize. The governments of **India and China** have been pushing back against emissions targets for years, arguing that their economies need to use fossil fuels in order to eliminate poverty. But thanks to the valiant efforts of the people pushing renewable technologies forward, these countries are now starting to **decarbonize out of pure self-interest**. India has been canceling coal plants left and right. China just announced that it’s canceling the financing of all new coal plants overseas, suggesting that Xi Jinping might have the political clout to take on the entrenched, hugely powerful coal industry. This would never have happened if technological innovation hadn’t made decarbonization an attractive economic prospect in its own right.

**Even** America’s **Republicans may be starting to come around**; despite controlling the Presidency and the Senate, they put significant climate provisions in the December Covid relief bill.

In other words, though we haven’t managed to convince the general public to make deep material sacrifices to fight climate change, we have managed to convince several key segments of society to join the fight in a highly effective manner. **The effort to invent green technologies has been broad, consistent, sustained, and vigorous**. And it’s pretty clear at this point — in a way that it wasn’t clear a decade ago — that **the effort is going to be successful**. That is what “optimism of the will” gets us; that is what it means to fight ourselves out of a tough situation.

The energy of optimism

This does not mean that the fight is won, and that we can kick back and watch technology stop climate change for us. As the INET report indicates, even optimistic technological scenarios still require strong government action on non-energy sources of emissions such as agriculture and land use. Moreover, technology might make decarbonization cheap, but the fossil fuel lobby is still incredibly powerful, especially in the United States — coal is dead, but oil and gas support tons of jobs and have the ear of the GOP and some Democrats as well. Innovation has opened the door to an emissions-free future, but activism will be needed to push us through that door.

That’s where optimism comes in. Activists need to realize that even though projections have worsened and the 1.5C target will probably be missed, technology has flipped what would otherwise be a truly hopeless situation into a very winnable battle. 10 years ago it looked like in order to stop climate change, activists would have to convince the world to make huge material sacrifices. But now, **there’s no need to embrace degrowth**, or demand that people live ascetic lives, **or abolish capitalism**, or any of that stuff. Economic logic is on the activists’ side now. All that’s needed is to overcome the entrenched political power of the lobbies of sunset industries, and their culture warrior allies. Those are powerful enemies, but they’re **fundamentally beatable** ones.

* 1. Climate activists will thus benefit from both a change in attitude and a change in tone. Optimism of the will — the determination to fight our way out of the hole we’ve dug for ourselves — is a reason to get up in the morning. And it also makes for a damn good message. Instead of histrionics, or increasingly shrill and despairing portents of doom, or insistence that **capitalism must end** NOW NOW NOW OR THE PLANET DIES — all of **which alienate more people** than they convert — climate activists can deliver a positive, optimistic, can-do message. Climate change is beatable. We can even **make money while beating it**! **Human ingenuity and will can triumph** over the brute elemental forces that would destroy us. Must triumph, in fact.
  2. **Transition wars go nuclear**
  3. **Milne 17** [Drew Milne and John Kinsella, \* Staff Fellow and Director of Studies in English, Cambridge, \*\* Professor of English at Kenyon College in the United States, a Fellow of Churchill College, Cambridge University, and Adjunct Professor to Edith Cowan University, “Nuclear theory degree zero, with two cheers for Derrida,” 2017, *Angelaki*, Vol. 22, Issue 3, https://www.tandfonline.com/doi/full/10.1080/0969725X.2017.1387358 – potentially triggering words censored]
  4. Another version of the “accelerationist” argument captures some of the ideological workings of the term. In Marxist circles, an “accelerationist” is someone who thinks that the collapse of capitalism will be hastened by allowing reactionary forces to speed up capitalism’s self-destruction. There are occasions when such an argument has validity: nothing about the form of the argument makes it inherently or structurally wrong. There are revolutionary moments when allowing capitalism to collapse in order to rebuild a socialist society is a better path than propping up a failing capitalist regime. The judgement is political rather than philosophical. In most contexts, however, the accelerationist argument, especially as a political principle, is deeply dangerous. It would be better, for example, to preserve a failing US capitalist regime while building social forces to take it over, than to allow the nuclear weapons of the United States to **fall into the hands** of a ~~suicidal~~ **military rearguard** or some **counter-revolutionary terrorist organisation**. Preserving the possibility of human life might involve **propping up collapsing capitalist institutions**, not least the nuclear safety inspectorate, rather than allowing humanity to be **swallowed up by some death spiral of presidential dictators** in fear of being toppled. These are critical judgements that could arise at any moment, with real risks that poor judgements will **hasten** a **nuclear confrontation** that leads to mutually assured **annihilation**. The formal shape of an accelerationist argument needs to be understood strategically and politically if it is to address nuclear questions.
  5. The accelerationist view that the deepening of capitalism could hasten its self-destructive tendencies and lead to its collapse is not inherently ~~suicidal~~, but consideration of what the collapse of capitalism might mean for the global stock of nuclear weapons and nuclear power stations indicates dangers. Amid the collapse of capitalism, securing the safety of nuclear resources is a fundamental priority, and preparing a decelerationist strategy is an essential political position for any radical formation serious about nuclear safety. Against the horizon of nuclear crisis, we rely on workers to know how to manage and decommission nuclear weapons, silos and power stations. This requires “good” science and ongoing struggles to control the decision making around weapons and energy systems. Concrete consideration of what happens to ageing nuclear systems in an imploding political system has been **tested** in the fall of the **Soviet Union.** Imagine the retrenchment of **reactionary forces** around nuclear installations threatening ~~suicidal~~ **political terrorism** on a global scale. The risks of a collapsing capitalist system taking the world down with it are clear. Chernobyl and Fukushima, moreover, stand as metonyms of the risks involved in systems that were apparently functional and yet spiralled out of control even in what might be called peacetime. The risks of the US or the Chinese nuclear androids imploding involve different decisions. Again, the need is for nuanced political judgements and strategies, involving scientific expertise along with solidarity between scientists, workers and new social formations.

**Turn–appropriation solves inequality**

**Reinstein 99** Ezra J. Reinstein (JD, Associate at Kirkland & Ellis), Owning Outer Space, 20 Nw. J. Int’l L. & Bus. 59 (1999). JDN. <https://scholarlycommons.law.northwestern.edu/njilb/vol20/iss1/7>

Except, perhaps, that it may severely disadvantage the lower‑tech nations in future. De‑ veloping nations fear that by the time they gain the wealth and technology necessary to become players in the space game, the most readily available resources will have al‑ ready been claimed as private property and be under sovereign control of other nations. The developing nations argue that they will again be left in the economic lurch. This argument against a right‑of‑grab‑based system gains salience when one considers that the reason the developing nations are not yet space‑capable may well be attributable to past wrongs the developed nations inflicted on them. The perpetuation of past wrongs thus makes the right of grab doubly objectionable in the eyes of developing nations. There are two short answers to this concern. First, the universe, for practical purposes, is not finite. Whenever developing nations become space‑capable, there will be plenty of available unused space real estate. Second, corporations based in space‑incapable nations could, of course, contract out to a space launch company from a space‑capable nation. Developing nations can take advantage of space development without them‑ selves being space‑capable. Perhaps less straightforward is the notion that ownership rights, by incentivizing the development of outer space, would fund intense R&D of launch technology. Launches would become more reliable and cheaper. In this way, ownership rights might hasten the day that developing nations are able to afford hiring a launch company, or even to have their own space