# FW

#### The standard is maximizing expected well-being.

#### 1. Death is bad and outweighs – agents can’t act if they fear for their bodily security which constrains every ethical theory

#### 2. Extinction outweighs -

Pummer 15 [Theron, Junior Research Fellow in Philosophy at St. Anne's College, University of Oxford. “Moral Agreement on Saving the World” Practical Ethics, University of Oxford. May 18, 2015] AT

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

# Contention 1: Global Warming

#### Mining Industry destroying itself.

David Oni, Space analyst at Space in Africa, writes in 2019:

David Oni 19 (David Oni, Space industry and technology analyst at Space in Africa, Graduate of Mining Engineering from the Federal University of Technology Akure.) The Effect of Asteroid Mining On Mining Activities in Africa 9-24-2019 Space in Africa https://africanews.space/the-effect-of-asteroid-mining-on-mining-activities-in-africa/ //DebateDrills TJ

The earth, as we have come to know, is enriched with a vast array of mineral resources. But these resources are nonrenewable and hence, constant growing consumption in developing and developed countries, with the rising need for more resources to keep driving the fourth industrial revolution, will ultimately lead to a depletion in a couple of years to come. Experts say that elements needed for modern industry and food production could be exhausted on Earth within 50–60 years.

In terms of mineral resources, Africa has the most abundant of reserves. Currently, Africa hosts 30% of the world’s mineral reserve, 55% of the world’s diamond comes from Botswana and Congo, 60% of the mining in Africa is gold mining but to mention a few.

Given that the mining industry is consistently rising across sub-Saharan Africa, it is good news for the African mining sector as mining companies are beginning to expand operations, countries are already looking into improving regulatory frameworks that will enhance activities and also attract more investors.

But recent breakthroughs in space technology have led to many space scientists and engineers looking to explore alternatives to sustaining the earth while generating massive revenue and improving life generally. Currently, there are various comprehensive research documents on the Space Mining market, with detailed insights on growth factors and strategies. With the current advances and cutting edge technologies developed in preparation for the first stages of asteroid mining, one might want to ask if it is indeed good news for the African continent.

Apart from the environmental impacts, major mining activities are largely hindered in Africa by a handful of other factors such as access to energy, health and safety volatility of commodity prices, etc. Other issues such as political uncertainty, economic instability, religious and tribal wars, industrial unrest, and the fickle nature of regulatory bodies have also rendered foreign direct investment increasingly unattractive to global investors. Furthermore, most African countries have a relatively undeveloped infrastructure for exploiting resources effectively.

At the moment, Asteroid mining poses no threat to terrestrial mining; however, this will not hold for long. The space industry is progressing at such a rapid pace, and the prospects are unequivocally mouth-watering. The big question is, will asteroid mining lure away investors in Africa? The planetary resources company estimates that a single 30-m asteroid may contain 30 billion dollars in platinum alone and a 500m rock could contain half the entire world resources of PGM. Considering the abundance of minerals in asteroids, once asteroid mining materialises, it will severely affect the precious metals market, usurp the prices of rare earth minerals, and a whole lot more because minerals that are usually somewhat scarce on earth will be easily accessible on asteroids.

While foreign investors run the majority of the large-scale mining activities in the region, reports say that many African countries are dangerously dependent on mining activities. For some African countries, despite massive mineral wealth, their mining sectors are underdeveloped, and this is as a result of much focus on oil resources and a couple of other challenges. The million-dollar question is, what will become of the mining activities in Africa?

#### Asteroid mining provides the necessary precious metals

Matthew Williams, Journalist for Universe Today, writes in 2020:

Matthew S. Williams 20 (Matthew S. Williams, writer for Universe Today, and the curator of their Guide to Space section, Articles have been featured in Phys.org, HeroX, Popular Mechanics, Business Insider, Gizmodo, and IO9, ScienceAlert, Knowridge Science Report, and Real Clear Science,) Asteroid Mining to Shape the Future of Our Wealth 11-6-2020 No Publication https://interestingengineering.com/asteroid-mining-to-shape-the-future-of-our-wealth //DebateDrills TJ

The argument in favor of asteroid mining is simple: within the Solar System, there are countless bodies that could contain a wealth of minerals, ores, and volatile elements that are essential to Earth's economy.

Asteroids, as we saw above, are believed to be the material left over from the formation of the Solar System. As such, many asteroids are thought to have compositions that are similar to that of Earth and the other rocky planets (Mercury, Venus, and Mars).

All told, there are thought to be more than 150 million asteroids in the inner Solar System alone, and that's only the ones that measure 100 meters (330 ft) or more in diameter.

These can be divided into three main groups: C-type, S-type, and M-type, which correspond to asteroids composed, respectively, largely of clay and silicates, silicates and nickel-iron, and metals. About 75% fall into the category of C-type; S-types account for 17%; while M-type and other types make up the remainder.

These latter two groups are thought to contain abundant minerals, including gold, platinum, cobalt, zinc, tin, lead, indium, silver, copper, iron, and various rare-Earth metals. For millennia, these metals have been mined from the Earth's crust and have been essential to economic and technological progress.

In addition, there are thought to be many asteroids and comets that contain water ice and other volatiles (ammonia, methane, etc.). Water ice could be harvested to satisfy a growing demand for freshwater on Earth, for everything from drinking to irrigation and sanitation.

Volatile materials could also be used as a source of chemical propellant like hydrazine, thus facilitating further exploration and mining ventures. In fact, Planetary Resources indicates that there are roughly 2.2 trillion US tons (2 trillion metric tons) of water ice in the Solar System.

Of course, this raises the obvious question: wouldn't it be really expensive to do all this mining? Why not simply continue to rely on Earth for sources of precious metals and resources and simply learn to use them better?

To put it simply, we are running out of resources. To be clear, learning to use our resources better and more sustainably is always the most important idea. And while it is certainly true that Earth-based mining is far cheaper than going to space would be, that may not be the case indefinitely.

#### Private sector mining is coming now – new tech and precious resources create concrete incentives.

Christian Davenport from the Washington Post writes in 2020

Davenport 20 Davenport, Christian. [Reporter covering NASA and the space industry, Education: Colby College, B.A., American Studies]“A Dollar Can't Buy You a Cup of Coffee but That's What NASA Intends to Pay for Some Moon Rocks.” *The Washington Post*, WP Company, 3 Dec. 2020, https://www.washingtonpost.com/technology/2020/12/03/moon-mining-contracts-named/. //Debatedrills AS

NASA announced Thursday that several companies had won contracts to mine the moon and turn over small samples to the space agency for a small fee. In one case, a company called Lunar Outpost bid $1 for the work, a price NASA jumped at after deciding the Colorado-based robotics firm had the technical ability to deliver.

“You’d be surprised at what a dollar can buy you in space,” Mike Gold, NASA’s acting associate administrator for international and interagency relations, said in a call with reporters.

But the modest financial incentives are not the [driver of the program](https://www.washingtonpost.com/technology/2020/09/10/moon-mining-nasa-search/?itid=lk_inline_manual_6). Nor to a large extent is the actual lunar soil. NASA is asking for only small amounts — between 50 and 500 grams (or 1.8 ounces to about 18 ounces). While there would be scientific benefits to the mission, it’s really a technology development program, allowing companies to practice extracting resources from the lunar surface and then selling them.

It would also establish a legal precedent that would pave the way for companies to mine celestial bodies in an effort blessed by the U.S. government to help build a sustainable presence on the moon and elsewhere.

To do that, NASA says it needs its astronauts, like the western pioneers, to “live off the land,” using the resources in space instead of hauling them from Earth. The moon, for example, has plenty of water in the form of ice. That’s not only key to sustaining human life, but the hydrogen and oxygen in water could also be used as rocket fuel, making the moon a potential gas station in space that could help explorers reach farther into the solar system.

Asteroids also have significant resources, particularly precious metals that could be used for in-space manufacturing. While the prospect of large mining and manufacturing facilities in orbit is still many years away, NASA wants to use the mining program as a small step toward that goal.

NASA is now trying to return astronauts to the moon under its Artemis program for the first time since 1972. Unlike its predecessor, Apollo, where the astronauts visited the lunar surface for a short while before coming home, the Artemis program would create a permanent presence on and around the moon.

“The ability to extract and utilize space resources is the key to achieving this objective of sustainability,” Gold said. “We must learn to generate our own water, air and even fuel. Living off the land will enable ambitious exploration activities that will result in awe-inspiring science and unprecedented discoveries.”

In 2015, then-President Barack Obama signed a law that allowed private companies the right to own the resources they mined in space. Under the program announced Thursday, NASA said the materials would be transferred from the private companies to NASA.

The effort would not violate the 1967 Outer Space Treaty, NASA officials have said, which prohibits nations from claiming sovereignty over a celestial body. NASA Administrator Jim Bridenstine previously likened the policy to the rules governing the seas.

**“We do believe we can extract and utilize the resources of the moon, just as we can extract and utilize tuna from the ocean,” he said earlier this year.**

As part of its lunar exploration mission, NASA has been working to get countries around the world to adopt what it calls the Artemis Accords, a legal framework that would govern behavior in space and on celestial bodies such as the moon.

The rules would allow private companies to extract lunar resources and create safety zones to prevent conflict and ensure that countries act transparently about their plans in space, while sharing their scientific discoveries.

The mining announcement came during the same week that China landed a spacecraft on the moon, extracted resources and then lifted off from the lunar surface in an effort to return the sample to Earth.

Instead of developing and sustaining a big government sample-return mission, NASA is taking another approach by partnering with the private sector. “If you step back and think about how really amazing it is that NASA can essentially piggyback on the private-sector space capabilities to perform this mission, it would not have been possible 10 years ago,” said Phil McAlister, the director of NASA’s commercial spaceflight division.

In addition to Lunar Outpost, the other companies chosen for NASA’s program are: ispace Japan and Europe, which would each charge $5,000 for the material; and Masten Space Systems of California, would charge $15,000.

All of the companies would already be on the moon, according to NASA, conducting other missions. McAlister said Lunar Outpost would be ferried to the moon by the lunar lander known as Blue Moon being developed by Jeff Bezos’s Blue Origin. (Bezos owns The Washington Post.) The company later clarified that it was looking at a number of landers to get it to the lunar surface, and not just Blue Origin’s. The ispace companies would fly on a Japanese lander, McAlister said, and Masten, already part of another NASA lunar contract, would use its own Masten XL-1 lander.

#### Dwindling precious metals are key to innovation.

Jeremy Hsu, Author for Popular Science, writes in 2012:

Jeremy Hsu 12 (Jeremy Hsu, Masters in Science Journalism from NYU, written in publications such as Popular Science, Scientific American Mind and Reader's Digest Asia.) Shortage of Rare Metals Could Threaten High-Tech Innovation 1-30-2012 livescience https://www.livescience.com/18167-shortage-rare-metals-threaten-high-tech-innovation-hitchhiker-metals-clean-technologies.html //DebateDrills TJ

A world in need of faster computers, smarter phones and more energy-efficient light bulbs threatens to strain the small supply of rare metals used by the global electronics industry. But limits on the production of such rare metals mean the supply can't easily expand to meet the demand for innovation in both consumer electronics and clean technologies.

Scarce metals such as gallium, indium and selenium — known as "hitchhiker" metals — come only as byproducts of mining major industrial metals such as aluminum, copper and zinc. That makes it hard to simply boost production of hitchhiker metals whenever industries face a shortage, even if the metals have become critical components of everything from high-performance computers to solar panels.

"With respect to metals that are hitchhikers, a higher price isn't going to lead to much more production," said Robert Ayres, a physicist and economist based at the international business school INSEAD in France. "And therefore it's much more important to think in terms of conservation, recycling and substitution."

That sobering message was delivered by Ayres at a Royal Society discussion meeting held in London Jan. 30. He wants both governments and industries to come up with a standard recycling process that could reuse rare metals.

"You produce something, you use it, but you don't just toss it in a landfill; it goes to another stage and another, and eventually the rare materials are recovered," Ayres told InnovationNewsDaily. "At present, hardly any are recovered."

Take gallium as an example. Gallium is a small byproduct of mining bauxite and zinc, but it has become a critical component for technologies such as lasers, energy-efficient LED lighting and solar panels. The metal has also become a replacement for silicon in faster microchips powering the latest generation of smartphones.

U.S. demand for gallium relied upon $66 million of overseas imports in 2011, according to the U.S. Geological Survey. And just one company, in Utah, recovered and refined gallium from scrap metal and impure gallium metal.

Indium has become a crucial ingredient in the liquid crystal displays for smartphones and in some types of solar panels. A third hitchhiker metal, selenium, also forms part of the solar panels containing both gallium and indium.

Ayres worries in particular about rare metal shortages crippling innovation in clean energy technologies such as solar power.

"Tellurium, part of the lowest-cost photovoltaic material, is only available from copper refineries," Ayres pointed out. "And so the quantity available in the world isn't anywhere near enough to satisfy the potential demand for thin-film photovoltaic surfaces (solar panels)."

#### Besides metals, Space Research is key to solving climate change.

Greg Autry, Professor of Space Leadership at Thunderbird School of Global Management, writes in 2019:

Greg Autry 19 (Greg Autry, Clinical Professor of Space Leadership, Policy and Business at Thunderbird School of Global Management, Tech startup founder, Researcher on entrepreneurship, commercial space and economics. Former NASA Presidential Appointee. Writer & regular Forbes contributor, 2021 Space Advocate of the Year.) Space Research Can Save the Planet—Again 7-20-2019 Foreign Policy https://foreignpolicy.com/2019/07/20/space-research-can-save-the-planet-again-climate-change-environment/ //DebateDrills TJ

Indeed, understanding the evolution of other planets’ climates is essential for modeling possible outcomes on Earth. NASA probes revealed how, roughly 4 billion years ago, a runaway greenhouse gas syndrome turned Venus into a hot, hellish, and uninhabitable planet of acid rain. Orbiters, landers, and rovers continue to unravel the processes that transformed a once warm and wet Mars into a frigid, dry dust ball—and scientists even to conceive of future scenarios that might terraform it back into a livable planet. Discovering other worlds’ history and imagining their future offers important visions for climate change mitigation strategies on Earth, such as mining helium from the moon itself for future clean energy.

Spinoff technologies from space research, from GPS to semiconductor solar cells, are already helping to reduce emissions; the efficiency gains of GPS-guided navigation shrink fuel expenditures on sea, land, and air by between 15 and 21 percent—a greater reduction than better engines or fuel changes have so far provided. Modern solar photovoltaic power also owes its existence to space. The first real customer for solar energy was the U.S. space program; applications such as the giant solar wings that power the International Space Station have continually driven improvements in solar cell performance, and NASA first demonstrated the value of the sun for powering communities on Earth by using solar in its own facilities.

Promisingly, space-based solar power stations could overcome the inconvenient truth that wind and solar will never get us anywhere near zero emissions because their output is inherently intermittent and there is, so far, no environmentally acceptable way to store their power at a global scale, even for one night. Orbital solar power stations, on the other hand, would continually face the sun, beaming clean power back through targeted radiation to Earth day or night, regardless of weather. They would also be free from clouds and atmospheric interference and therefore operate with many times the efficiency of current solar technology. Moving solar power generation away from Earth—already possible but held back by the current steep costs of lifting the materials into space—would preserve land and cultural resources from the blight of huge panel farms and save landfills from the growing problem of discarded old solar panels.

Sustainable energy advocates in the U.S. military and the Chinese government are actively pursuing space-based solar power, but just making solar cells damages the environment due to the caustic chemicals employed. Space technology offers the possibility of freeing the Earth’s fragile biosphere and culturally important sites from the otherwise unavoidable damage caused by manufacturing and mining.

The U.S. start-up Made in Space is currently taking the first steps toward manufacturing in orbit. The company’s fiber-optic cable, produced by machinery on the International Space Station, is orders of magnitude more efficient than anything made on Earth, where the heavy gravity creates tiny flaws in the material. Made in Space and others are eventually planning to build large structures, such as solar power stations, in space. As these technologies develop, they will augment each other, bringing costs down dramatically; space manufacturing, for instance, slashes the cost of solar installations in space.

#### Anthropogenic warming causes extinction --- mitigation efforts now are key

Griffin, 15 (David, Professor of Philosophy at Claremont, “The climate is ruined. So can civilization even survive?”, CNN, 4/14/2015, <http://www.cnn.com/2015/01/14/opinion/co2-crisis-griffin/> )

Although most of us worry about other things, climate scientists have become increasingly worried about the survival of civilization. For example, Lonnie Thompson, who received the U.S. National Medal of Science in 2010, said that virtually all climatologists "are now convinced that global warming poses a clear and present danger to civilization." Informed journalists share this concern. The climate crisis "threatens the survival of our civilization," said Pulitzer Prize-winner Ross Gelbspan. Mark Hertsgaard agrees, saying that the continuation of global warming "would create planetary conditions all but certain to end civilization as we know it." These scientists and journalists, moreover, are worried not only about the distant future but about the condition of the planet for their own children and grandchildren. James Hansen, often considered the world's leading climate scientist, entitled his book "Storms of My Grandchildren." The threat to civilization comes primarily from the increase of the level of carbon dioxide (CO2) in the atmosphere, due largely to the burning of fossil fuels. Before the rise of the industrial age, CO2 constituted only 275 ppm (parts per million) of the atmosphere. But it is now above 400 and rising about 2.5 ppm per year. Because of the CO2 increase, the planet's average temperature has increased 0.85 degrees Celsius (1.5 degrees Fahrenheit). Although this increase may not seem much, it has already brought about serious changes. The idea that we will be safe from "dangerous climate change" if we do not exceed a temperature rise of 2C (3.6F) has been widely accepted. But many informed people have rejected this assumption. In the opinion of journalist-turned-activist Bill McKibben, "the one degree we've raised the temperature already has melted the Arctic, so we're fools to find out what two will do." His warning is supported by James Hansen, who declared that "a target of two degrees (Celsius) is actually a prescription for long-term disaster." The burning of coal, oil, and natural gas has made the planet warmer than it had been since the rise of civilization 10,000 years ago. Civilization was made possible by the emergence about 12,000 years ago of the "Holocene" epoch, which turned out to be the Goldilocks zone - not too hot, not too cold. But now, says physicist Stefan Rahmstorf, "We are catapulting ourselves way out of the Holocene." This catapult is dangerous, because we have no evidence civilization can long survive with significantly higher temperatures. And yet, the world is on a trajectory that would lead to an increase of 4C (7F) in this century. In the opinion of many scientists and the World Bank, this could happen as early as the 2060s. What would "a 4C world" be like? According to Kevin Anderson of the Tyndall Centre for Climate Change Research (at the University of East Anglia), "during New York's summer heat waves the warmest days would be around 10-12C (18-21.6F) hotter [than today's]." Moreover, he has said, above an increase of 4C only about 10% of the human population will survive. Believe it or not, some scientists consider Anderson overly optimistic. The main reason for pessimism is the fear that the planet's temperature may be close to a tipping point that would initiate a "low-end runaway greenhouse," involving "out-of-control amplifying feedbacks." This condition would result, says Hansen, if all fossil fuels are burned (which is the intention of all fossil-fuel corporations and many governments). This result "would make most of the planet uninhabitable by humans." Moreover, many scientists believe that runaway global warming could occur much more quickly, because the rising temperature caused by CO2 could release massive amounts of methane (CH4), which is, during its first 20 years, 86 times more powerful than CO2. Warmer weather induces this release from carbon that has been stored in methane hydrates, in which enormous amounts of carbon -- four times as much as that emitted from fossil fuels since 1850 -- has been frozen in the Arctic's permafrost. And yet now the Arctic's temperature is warmer than it had been for 120,000 years -- in other words, more than 10 times longer than civilization has existed. According to Joe Romm, a physicist who created the Climate Progress website, methane release from thawing permafrost in the Arctic "is the most dangerous amplifying feedback in the entire carbon cycle." The amplifying feedback works like this: The warmer temperature releases millions of tons of methane, which then further raise the temperature, which in turn releases more methane. The resulting threat of runaway global warming may not be merely theoretical. Scientists have long been convinced that methane was central to the fastest period of global warming in geological history, which occurred 55 million years ago. Now a group of scientists have accumulated evidence that methane was also central to the greatest extinction of life thus far: the end-Permian extinction about 252 million years ago. Worse yet, whereas it was previously thought that significant amounts of permafrost would not melt, releasing its methane, until the planet's temperature has risen several degrees Celsius, recent studies indicate that a rise of 1.5 degrees would be enough to start the melting. What can be done then? Given the failure of political leaders to deal with the CO2 problem, it is now too late to prevent terrible developments. But it may -- just may -- be possible to keep global warming from bringing about the destruction of civilization. To have a chance, we must, as Hansen says, do everything possible to "keep climate close to the Holocene range" -- which means, mobilize the whole world to replace dirty energy with clean as soon as possible.

**Urgency continues to rise. Passing 2°C leads to extinction.**

**Worland, 20** (Justin Worland, Justin Worland is a Washington D.C.-based senior correspondent for TIME covering climate change and the intersection of policy, politics and society., 7-9-2020, accessed on 12-17-2021, Time, "2020 Is Our Last, Best Chance to Save the Planet", <https://time.com/5864692/climate-change-defining-moment/>) DD//SV

**We’re standing at a climate crossroads: the world has already warmed 1.1°C since the Industrial Revolution. If we pass 2°C, we risk hitting one or more major tipping points, where the effects of climate change go from advancing gradually to changing dramatically overnight, reshaping the planet**. To ensure that we don’t pass that threshold, we need to cut emissions in half by 2030. Climate change has understandably fallen out of the public eye this year as the coronavirus pandemic rages. Nevertheless, this year, or perhaps this year and next, is likely to be the most pivotal yet in the fight against climate change. “We’ve run out of time to build new things in old ways,” says Rob Jackson, an earth system science professor at Stanford University and the chair of the Global Carbon Project. **What we do now will define the fate of the planet–and human life on it–for decades.** The **time frame for effective climate action was always going to be tight, but the coronavirus pandemic has shrunk it further.** Scientists and policymakers expected the green transition to occur over the next decade, but the pandemic has pushed 10 years of anticipated investment in everything from power plants to roads into a monthslong time frame. Countries have already spent $11 trillion to help stem the economic damage from COVID-19. They could spend trillions more. “It’s in this next six months that recovery strategies are likely to be formulated and the path is set,” says Nicholas Stern, a former World Bank chief economist known for his landmark 2006 report warning that **climate change could devastate the global economy**. We don’t know where the chips will fall: Will a newfound respect for science and a fear of future shocks lead us to finally wake up, or will the desire to return to normal overshadow the threats lurking just around the corner? One of Los Angeles’ most crowded highway interchanges was nearly empty during rush hour on April 24. Stuart Palley We find ourselves on the brink of climate catastrophe in large part because of the decisions made during a past crisis. As the world came out of the Great Depression and World War II, the U.S. launched a rapid bid to remake the global economy–running on fossil fuels. In the first postwar years, Americans moved to suburbs and began driving gas-guzzling cars to work, while the federal government built a highway system to connect the country for those vehicles. The single biggest line item in the Marshall Plan, the U.S. government program that funded the European recovery, went to support oil, which ensured that the continent’s economy would also run on that fossil fuel. Meanwhile, plastic, an oil derivative, became the go-to building block for consumer goods after the U.S. had developed production capacity for use in World War II. The underlying philosophy of economic development in this time period was a focus on gross national product, a term developed by U.S. government economists during the Depression, which included consumption as a proxy for prosperity: the more we consume, the better off we are, according to this model, which, in the postwar era, the U.S. assiduously spread abroad. The promise of endless growth also required an endless supply of oil to power factories, automobiles and jet planes. In 1945, President Franklin D. Roosevelt sealed a deal with Ibn Saud, the first King of Saudi Arabia, trading security for access to the country’s vast oil reserves. Every U.S. President since, implicitly or explicitly, has continued that exchange. The coronavirus pandemic is the most significant disruption yet to the postwar fossil-fuel order. The global economy is expected to contract more than 5% this year, according to the International Monetary Fund (IMF). This is a challenge so big that it has also created a once-in-a-lifetime opportunity to change direction. This moment comes just in time. In 2018, a landmark report from the Intergovernmental Panel on Climate Change, the U.N.’s climate-science body, warned that **allowing the planet to warm any more than 2°C above preindustrial levels would drive hundreds of millions of people into poverty, destroy coral reefs and leave some countries unable to adapt.** **A 2019 analysis in the journal Nature identified nine tipping points**–from the collapse of the West Antarctic ice sheet to the thawing of Arctic permafrost–that the planet appears close to reaching, any one of which might very well be triggered if warming exceeds 1.5°C. “**Going beyond 2°C is a very critical step**,” says Johan Rockstrom, director of the Potsdam Institute for Climate Impact Research, “not only in terms of economic and human impact but also **in terms of the stability of the earth**.” To keep temperatures from rising past the 1.5°C goal, we would need to cut global greenhouse-gas emissions 7.6% every year for the next decade, according to a report from the U.N. Environment Programme (UNEP). That’s about the level the COVID-19 pandemic will reduce emissions this year, but virtually no one thinks a deadly pandemic and accompanying unemployment is a sustainable way to halt climate change–and recessions are typically followed by sharp rebounds in emissions. To achieve the 1.5°C goal without creating mass disruption has always meant thoughtfully restructuring the global economy, moving it away from fossil-fuel extraction slowly but surely. Scientists and economists agree this is the last opportunity we have to do so. “If we delay further than 2020,” says Rockstrom, “there’s absolutely no empirical evidence that it can be done in an orderly way.” As of late June, countries had spent some $11 trillion on measures to halt the pandemic and stem its economic impact, according to the IMF. Economists say that’s not enough, and countries and central banks plan to keep doling out money to help the global economy stay afloat. There are lots of things we could be buying with that money that would make our lives better and protect us from climate disaster. In recent months, leading institutions across the spectrum have offered approaches that are varied in their specifics but generally similar in philosophy: invest in greener infrastructure. The International Energy Agency (IEA), for example, calls for an annual $1 trillion investment in clean energy for the next three years. At a cost of about 0.7% of global GDP, this would represent a small portion of the funds spent to combat COVID-19 but could be transformative. Expansion and modernization of electric grids would allow for easier flow of renewable energy. Governments could buy out gas-guzzling vehicles, pushing consumers to go electric. Homes and buildings could be retrofitted to consume less energy. This spending would also help solve the immediate problem of lost jobs and economic stagnation by creating nearly 10 million jobs worldwide and increasing global GDP by 1.1%, meaning it would add more to the economy than it costs. Importantly, **green investment would result in** a slew of “co-benefits.” For example, some rural communities would receive access to electricity for the first time. For another, **air pollution** would **decline all over the world**. “**If governments do not make use of this opportunity, they may miss a very important tool for the economic recovery**,” says Fatih Birol, head of the IEA. But this moment is not just about opportunity; even **maintaining the status quo is dangerous**. **Research from the UNEP released last year shows that if nations stick with current plans to reduce emissions, global temperatures will rise more than 3°C by the end of this century**. For the past five years, climate advocates had positioned 2020 as critical in the fight against climate change. Under the Paris Agreement, countries are required to submit new plans to reduce emissions in 2020, and climate diplomats had planned a series of meetings around the world this year to build momentum, culminating with the U.N. climate conference in Glasgow, in November. The Glasgow event was postponed a year, but the coronavirus pandemic has created a new sort of momentum. Empty city streets have been transformed into pedestrian space with cars banished, and many cities say they’re not going back. The oil industry has faced a reckoning, with the U.S. benchmark price at one point in mid-April dropping into negative territory and investors fleeing the industry; smaller firms filing for bankruptcy; and some of its biggest players writing down assets they say have lost their value. With the writing beginning to appear on the wall, many countries are starting to build a different world. In South Korea, the newly re-elected government has promised a $10 billion Green New Deal to invest in renewable energy and make public buildings energy efficient. In Costa Rica, one of a few developing countries to commit to eliminating their carbon footprint by 2050, leaders have created a new fee on gasoline to fund social-welfare programs and are planning to issue new green bonds to fund the next stage of climate adaptation programs. Rwanda, which has a GDP of roughly $9 billion, has adopted an $11 billion plan to reduce emissions and adapt to climate change, which includes a push for buses, cars and motorcycles to go electric. “We cannot afford to have the same mode of recovery, the same mode of doing business, the same mode of economic activity,” says Juliet Kabera, director general of the Rwanda Environment Management Authority. International institutions are playing a critical role nudging these countries. The IMF, which has said it “stands ready” to use its $1 trillion lending capacity to stave off the effects of the coronavirus pandemic, has made climate resilience a key criterion for its lending. This has already paid dividends: some 50 nations, including dozens of developing countries, committed in late June to address climate change in their coronavirus recovery plans. “It’s a great catalyst to think about building a new world,” says Costa Rican President Carlos Alvarado Quesada. “Whatever we decide as a country or as a global community in the next six or 10 or 12 months is going to determine what happens on the earth for the next decade.” Nowhere will such an approach have as large an impact as in the E.U. When compared with countries, the bloc is the world’s second largest economy and third largest emitter. Its pandemic recovery will help achieve the proposed target of halving its emissions in 10 years by spending $100 billion annually to make homes energy-efficient, $28 billion to build renewable energy capacity and up to $67 billion for zero-emissions trains. The European investment in going green will hurt coal-mining jobs in places like Poland and the Czech Republic, but the European recovery program will pay billions to retrain the workers and transition them to other industries. The measure awaits approval by the member countries, and the details are subject to negotiation, but observers do not expect the direction of the policy to change. **Other major players in the global economy, most notably the U.S. and China, have not made as clear commitments to a green-tinged recovery. Upcoming decisions in both of those countries, which combined are responsible for nearly half of global emissions**, **are urgent**. China is being pulled in two directions as it develops a plan that will set the course of its development–and, by extension, its emissions–for the next half decade. In March, as China’s coronavirus epidemic began to subside, the nation’s powerful Politburo Standing Committee, which is made up of senior leaders of the Communist Party, including President Xi Jinping, endorsed a proposal to expedite $1.4 trillion in spending on so-called “new infrastructure” that includes electric-vehicle charging stations and high-speed rail, as well as 5G technology, which wouldn’t cut emissions per se but would help advance the country’s tech sector rather than its heavy industry, stimulating economic growth with lower emissions.But the degree of commitment to those green recovery measures remains unclear. The Politburo Standing Committee’s push is unfunded, leaving provincial governments to follow through. So far, the evidence on the ground has not been encouraging. Local Chinese governments have approved new coal-fired power plants this year at the fastest clip since 2015–a surefire way to stimulate economic growth and emissions. And the country is reportedly planning to ramp up production of oil and natural gas. Demand has fallen, but cheaper oil and gas typically stimulate the economy. Abroad, China continues to fund emissions-intensive projects through its Belt and Road Initiative. In Africa, for instance, China is financing new coal-fired power plants, even as many international financial institutions have walked away from the energy source. External pressure is likely to force the issue, and the E.U. is trying to offer just that. To push China and others along, the bloc is crafting a new tax on imports from countries that aren’t reducing emissions. Climate and trade are both currently being discussed by officials behind the scenes and were planned to be on the top of the agenda at a now postponed September summit between the E.U. and China. “Europe is a very important market for the Chinese,” says Laurence Tubiana, the CEO of the European Climate Foundation and a key architect of the Paris Agreement. “China can be secured in its potential exports to Europe by understanding that it can secure positive trade relations by increasing its climate ambition.” Still, **when it comes to turning the climate ship around, there’s no substitute for the U.S**., **and the country has already missed opportunities**. For example, before doling out bailout money, France demanded that Air France stop operating emissions-intensive short routes, and Austria forced Austrian Airlines to agree to cut its emissions 30% by 2030. Contrast that with the U.S., where the government decreed that to receive federal dollars, airlines could not drop any of their destinations–even if that meant flying planes empty–and Congress rejected an attempt from several Democratic Senators to attach green strings to the airline bailout.It’s hard to imagine anything substantive so long as Trump is President. He and his GOP allies in Congress have an effective stranglehold on any policy that could push the U.S. to decarbonize, and thus far they have rejected big legislation to address climate change–portraying it as “socialist” and part of the Green New Deal that the progressive wing of the Democratic Party proposed last year to the derision of Republicans. Instead, the Trump Administration is reportedly preparing a $1 trillion infrastructure package focused on roads and bridges. “If we label it green, that would actually probably decrease its chances of being included,” said a Democratic congressional aide who works on energy and climate.So the future of U.S. emissions will likely fall to the winner in the fall. Joe Biden, the former Vice President and presumptive Democratic presidential nominee, is well aware of the role the pandemic recovery will play in shaping emissions. Biden oversaw the last U.S. stimulus a decade ago in the midst of the Great Recession. That package totaled nearly $800 billion, with $90 billion for clean-energy measures, and helped launch many of America’s green advances, including funding Tesla’s transformation from a boutique car company to the world’s most valuable auto manufacturer; funding a program that doubled the fuel efficiency of Daimler Trucks’ Freightliner model; and supporting the weatherization of more than a million homes to reduce residential energy consumption. That package created 900,000 jobs and turned a profit for the government, even as it suffered high-profile failures like the collapse of the Solyndra solar-panel company.Last year, Biden released a proposed Green New Deal, calling for $1.7 trillion in spending over 10 years on everything from electric vehicles to reducing pollution in low-income communities–all in service of the U.S.’s achieving net-zero emissions by the middle of the century. Since the coronavirus pandemic began, Biden has doubled down: he’s touted his Green New Deal and has appointed a committee that includes both longtime Washington climate advocates like former Secretary of State John Kerry and emerging leaders of the Democratic progressive wing like current New York Congresswoman Alexandria Ocasio-Cortez to craft new climate policy. Top congressional Democrats, signaling support for a big climate package, unveiled a 500-page legislative road map on June 30 that includes tax incentives and infrastructure spending to eliminate the country’s carbon footprint by 2050. It won’t become law this year, but it sends a signal that the issue will be on the legislative agenda if Biden wins in the fall.“We’ve got to strike now. We can’t let this go,” Biden said at a League of Conservation Voters virtual event on June 16. “Not because of me but because of the opportunity.” Importantly, Biden has promised to re-engage with the rest of the world on the issue, including by helping fund climate measures in developing countries. China wouldn’t be eligible to receive such funding, but the nation is keeping a close eye on how U.S. climate policy is unfolding. China has delayed several key decisions and signaled its intention to hold off making new climate commitments until after the U.S. presidential election. Even after three years of Trump’s tearing down the U.S.’s global reputation on climate, it turns out the U.S. is still leading the world. In what direction remains to be seen. To many who study climate, the pandemic looks eerily familiar. At first, the new virus seemed distant and inconsequential to most people, so long as you weren’t in the eye of the storm. The rest of the world watched in amazement as China shut down Wuhan. Horror stories of patients dying in hallways in Milan shocked the U.S., but not enough to make the nation prepare. In late February, at the last Democratic primary debate before voting in the critical state of South Carolina, moderators didn’t ask about the issue until one hour and 15 minutes into the discussion, and spent less than five minutes on it.Researchers estimate that by the time the U.S. collectively woke up to the stakes of the pandemic on March 11–the day Tom Hanks said he tested positive, the NBA canceled its season and Trump banned travelers from Europe–thousands of people had already been infected in the country. In the few months since, more than half a million people have died worldwide, including some 100,000 in the U.S., and there’s no sign we’ll be rid of the virus anytime soon. The story of climate change has unfolded over decades, but its trajectory is much the same. For years, we’ve watched as the evidence has grown. We’ve gaped as superstorms have battered the globe from Bangkok to Houston and unprecedented heat waves have popped up, killing a few thousand here and there. As I write this, it’s 100°F in Siberia, and wildfires are raging in an area infamous for its yearlong ice. “These are the warning signs” of cataclysmic climate change, says Gail Whiteman, a professor at Lancaster University who runs an Arctic research program.If Wuhan and Milan offered a preview of what the U.S. is now experiencing with COVID-19, where should the country look for a glimpse of a climate-changed world? Last year, I traveled to Fiji and found that for many of those living on the small Pacific Islands, on the front lines of brutal storms and sea-level rise, climate change is already the defining issue. If a storm destroys a school, students can’t learn. If the sugarcane crops are flooded, farmers lose their jobs. If sea levels rise too much, entire communities disappear. Climate concerns are at the center of their economies and the center of their development plans.“This can’t be the purview of even 25,000 or 40,000 or even 100,000 people,” says Christiana Figueres, who led the U.N. climate-change body during the Paris climate talks. “This has got to permeate through every single corner, every single channel, every single flow of economic development and modernization. It’s got to become the new norm.” That will come one way or another. Every country will be combatting climate change for the foreseeable future; the change in climate we’re experiencing today is in large part the result of emissions that happened more than a decade ago. However, we do have a choice of how bad it will get. If we invest in preserving nature and transitioning our energy system today, we will stave off the worst, giving us the ability to manage the hurricanes and floods as they come. If we wait, we’ll be stuck flat-footed when the worst arrives, watching in dismay as the temperature curve ticks up and up.

## Cap Good

#### Embracing globalism is good and the aff exacerbates climate change significantly—also poverty, violence, and exploitation date back much further than capitalism. Turns every aff impact.

**Karlsson**, PhD, Associate Professor, Department of Political Science, Umeå University, **‘16**

(Rasmus, “The Environmental Risks of Incomplete Globalisation,” Globalizations, August)

While neither xenophobia nor militarism is by any means new in history, what is striking is the **lack of enthusiasm** among contemporary elites and leading academics for accelerating globalisation processes or actively planning for a future of shared prosperity. As climate change has emerged as the defining political issue of our time, the rise of the poor is increasingly treated as a problem rather than a transformative opportunity (Myers & Kent, 2003). What is worse, **cultural perfectionist ideas** about the perceived superficiality of “mass consumption” have been allowed to **blend with protectionist fears of foreign competition** into a **silent acceptance of chronic poverty** abroad, preferably **under the guise of “sustainable livelihoods”** powered by small-scale renewable energy, as a tolerable price for avoiding a climate emergency. According to Paul and Anne Ehrlich, avoiding a collapse of global civilisation will require “widely based cultural change” and dramatic reductions of both “population size and overconsumption” (Ehrlich & Ehrlich, 2013:5). For those subscribing to such views, a delayed or incomplete globalisation is seen as a blessing of sorts as it takes away some of the urgency of climate mitigation. The primary aim of this paper is to show that, far from offering a path to long-term climate stability, such a development may lead policy-makers to **grossly underestimate** the true scope of the climate/energy challenge (Arto et al., 2016) and pursue policies that continue to lock in non-scalable forms of low-carbon technologies. More generally, beyond the formidable human cost of maintaining a divided world, the possibility of incomplete globalisation is likely to make the transition to a “Good Anthropocene” (Ellis, 2014) more difficult, reduce overall resilience, and **divert resources** away from important social and environmental ends. The paper is structured so that it proceeds from a general critique of traditional environmental ideas of intentional localisation through a more specific discussion on the effects of “climate nationalism” towards a normative argument in favour of deliberately, i.e. by political and democratic means, accelerating the transition to a fully integrated high-energy planet as a way of reducing global environmental risks. **None of this comes from facile cornucopian optimism** or any attempt to downplay the existential challenges that humanity is currently facing with regard to the natural environment. It is rather the very urgency of those risks that makes it important to **contest existing discourses** on the relationship between globalisation and the environment, both those discourses that reflect **Malthusian beliefs** (Christoff & Eckersley, 2013) and those who deny the very reality of global environmental problems such as climate change. The transition fallacies of localism One long-running theme in the literature on sustainability **has been the virtues of localism and decentralisation** (Dobson, 2007:95; Goodin, 1992:147). Local economies are thought to be (a) intrinsically more sustainable, (b) better equipped to cope with resources scarcities, and (c) less vulnerable to environmentally catastrophes. As a consequence, the “Transition Town” movement and others have come to see intentional localisation as an appropriate response to climate change and other Anthropocene risks (Barry & Quilley, 2009; North, 2010). While such arguments obviously form part of a much broader discussion on political economy and the future of capitalism, there are many reasons to be **sceptical of this localist discourse**. Starting with the first claim and assuming a basic natural resource point of view, it is clear that different geographical locations have different endowments of everything from soil types to moisture variability. This naturally invites specialisation and **intensification** of production. If each locale were to produce the full range of goods necessary even for meeting **basic human needs**, then **efficiency would be much lower** and **land use much higher** than today. Inefficient modes of production would thus not only require higher inputs of labour, energy, and raw materials but also **leave less room for nature** (Desrochers & Shimizu, 2012). As agricultural production would be pushed into landscapes of increasingly lower productivity (e.g. poorer soils, less favourable climatic conditions, and steeper slopes) the result would be **lower yields yet again**. In a field such as metallurgy, even the most rudimentary processes require inputs that are geographically dispersed. To unthink trade is therefore essentially to unthink modern civilisation. While this may in fact be the explicit goal of some of the most radical voices (Zerzan, 2008) there is very little recognition in localist literature for how much of human welfare that actually depends on economies of scale, specialisation, and exchange. Yet, it simply suffice to consider how little most individuals in advanced economies know of farming, forestry or mining to realise what an enormous loss in productivity and knowledge that would follow if these tasks were to be more broadly shared within local communities. Similarly, the ecological toll that would follow if billions of people would go out in nature in search for food and fuel is clearly **unfathomable**. It is thus not surprising that most advocates of localism **fall short of endorsing autarky** or complete self-reliance. However by romanticising the local and discriminating in favour of it (Woodin & Lucas, 2004:30) these scholars show little appreciation for the enormous gains in welfare, not to mention the formidable progress in science and technology, which have been made possible over the last centuries precisely thanks to specialisation and the integration of markets. Even if pre-modern human history was essentially defined by poverty, social domination, and violent conflict, **it is still common to blame the prevalence of such ills on modernity.** Yet, as many have rightly pointed out, what is difficult to explain is not underdevelopment but that development was at all possible. According to a progressive reading of history, the key driver behind the great acceleration of the last centuries has been the emergence of broad social investments (Lindert, 2004). While both Marxists and libertarians may think otherwise, equality is crucial for modern capitalism to function as it provides both consumers who can afford the goods of industrialism and producers who can create ever more sophisticated things of value to others. Whatever short-term gains that may be obtained through exploitation or other unequal forms of exchange, they are dwarfed by the long-term gains that come with greater measures of equality as clearly illustrated by the resounding economic success of welfare capitalism over the course of the 20th century (Berman, 2006). The same of course holds true in a globalised economy. Rich countries may benefit in the short run from low consumer prices of imported goods but, for every Bangladesh that becomes a South Korea, the value of rising global demand and new export markets is obviously much greater. As for the second claim that localism promotes resilience, there is a strong intuitive argument that if consumption and production are taking place in close proximity, supply chain interruptions can be minimised. Yet, considering how deeply integrated global supply chains have already become, **the opposite may in fact be the case**. This is so because either discrimination in favour of local products (1) rem**ains the kind of boutique concern for environmental elites** that it is in the present and then it will not matter much in a situation of global trade disruption or (2) it forms part of a comprehensive protectionist regime and then it may be the very thing that **triggers the disruption of global trade in the first place**. As a consequence, the best way to mitigate situations of resource scarcity is therefore rather to ensure the existence of a robust world trade system (Deudney, 1990:470) since it not only allows communities to offset immediate local shortages but also gives them more time to come up with substitutes through technological innovation (the costs of which presumably can be shared among a large number of consumers worldwide). Moreover, judging from the history of the 20th century, the existence of an open world trade system is in itself crucial for driving overall growth and making eventual economic convergence possible (Williamson, 1996). Finally, as to the third claim, that decentralised local communities would be better suited to cope with environmental disasters thanks to their **“organic” or “embedded” nature**, **the opposite again seems to be the case**. As the events following the 2004 Boxing Day tsunami clearly illustrate, the existence of cosmopolitan norms of solidarity abroad and the possibility to bring in resources from unaffected, far-away lands offered **much better help than any policy of national isolation**. Likewise, after the super typhoon Haiyan hit in 2013, remittances from people working overseas and the help from international NGOs have been essential for the rebuilding of the city of Tacloban in the Philippines. As these and many other similar cases illustrate, accelerated global integration appears **far more appropriate** in any real-world scenario of environmental catastrophe than traditional environmental visions of **self- sufficiency and communitarianism**.

#### Solves every impact.

### AT Capitalism

#### Space privatization and capitalism is uniquely key to saving lives.

**Sharma 21** [Maanas, “The privatized frontier: the ethical implications and role of private companies in space exploration”, The Space Review. 7 September 2021. https://www.thespacereview.com/article/4238/1] //DebateDrills LC

Another key matter to note is restricted **capitalism in space “could also be our salvation.”[**11] **Private space exploration could reap increased access to resources and other benefits that can be used to solve the very problems on Earth that critics of capitalism identify**. Since governments offset some of their projects to private companies, **government agencies can focus on altruistic projects that otherwise would not fit in the budget before and do not have the immediate commercial use that private companies look for**. Scott Hubbard, an adjunct professor of aeronautics and astronautics at Stanford University, discusses how “this strategy allows the space agency to continue ‘exploring the fringe where there really is no business case’” but still has important impacts on people down on Earth.[12]

Indeed, **this idea is a particularly powerful one when considering the ideal future of private companies in space exploration**. Though there is no one set way governments will interact with companies, the consensus is that they must radically reimagine their main purpose as the role of private space exploration continues to grow. **As governments utilize services from private space companies,** “[i]nstead of being bogged down by the routine application of old research, **NASA can prioritize their limited budget to work more on research of other unknowns and development of new long-term space travel technologies**.”[13] According to the Council on Foreign Relations, **such technologies have far-reaching benefits on Earth as well.** Past **developments obviously include communications satellites**, by themselves a massive benefit to society, but also “**refinements in artificial hearts; improved mammograms; and laser eye surgery**… thermoelectric coolers for microchips; high-temperature lubricants; and a means for mass-producing carbon nanotubes, a material with significant engineering potential; [and h]ousehold products.”[2] **Agencies like NASA are the only actors able to pursue the next game-changing missions**, “where the profit motive is not as evident and where the barriers to entry are still too high for the private sector to really make a compelling business case.”[8] **These technologies have revolutionized millions, if not billions, of lives, demonstrating the remarkable benefits of space exploration.** It follows then that it is net ethical to prioritize these benefits.

# Frontlines

#### NASA is establishing a legal framework to regulate private companies’ behaviors

Davenport 20 Davenport, Christian. [Reporter covering NASA and the space industry, Education: Colby College, B.A., American Studies] “NASA unveils new rules to guide behavior in space and on the lunar surface.” May 15, 2020 https://www.washingtonpost.com/technology/2020/05/15/moon-rules-nasa-artemis/

**NASA** on Friday **unveiled a legal framework that would govern the behavior of countries and companies in space and on the moon**, including the creation of “safety zones” around sites where mining and exploration would take place on the lunar surface. The United States has long held that nations and companies should be allowed to extract and use resources on the moon. The new legal framework, known as the Artemis Accords, comes as the U.S. space agency works to return people to the lunar surface by 2024. NASA would make signing the accords a requirement for allied countries to participate in its lunar exploration program. The proposal, some aspects of which were first reported by Reuters, would “in no way change the 1967 Outer Space Treaty,” which prohibits nations from laying claim to the moon and other celestial bodies, said NASA administrator Jim Bridenstine. Rather, the **series of principles** would follow the tenets of the treaty and “**promote peaceful purposes” that would allow nations “to participate safely in outer space**,” Bridenstine said in an interview. The accords already have run into resistance from the head of Russia’s space agency, Dmitry Rogozin, [who called them an invasion](https://twitter.com/Rogozin/status/1258088165732167681?s=20) that would lead to another “Iraq or Afghanistan.” NASA said it would be “premature to release” the accords ahead of sharing them with allied nations. But a copy obtained by The Washington Post said parties would be required to publicly release “the extent and general nature of operations taking place within” the safety zones “while taking into account appropriate protection of business confidential, national security, and export controlled information.” **Parties would also agree to use** the **zones “in a manner that encourages scientific discovery, technology demonstration, as well as the safe and efficient extraction and utilization of space resources.”** They would also be required to publicly reveal “the extent and general nature of operations taking place within” the zones.

### AT: Private Mining Bad

#### Aff doesn’t solve – public entity mining and private-public partnerships will still exist.

Helmore 20 (Helmore, Edward. “NASA Is Looking for Private Companies to Help Mine the Moon.” The Guardian, Guardian News and Media, 11 Sept. 2020, www.theguardian.com/science/2020/sep/11/nasa-moon-mining-private-companies.) //DebateDrills AY

Nasa has announced it is looking for private companies to go to the moon and collect dust and rocks from the surface and bring them back to Earth. The American space agency would then buy the moon samples in amounts between 50 to 500 grams for between $15,000 to $25,000. The Nasa administrator, Jim Bridenstine, announced on Thursday that the moon material collection would become part of a technology development program that would help astronauts “live off the land” for crewed missions in the future to the moon or elsewhere. Bridenstine wrote that the agency “is buying lunar soil from a commercial provider. It’s time to establish the regulatory certainty to extract and trade space resources.” The collection is part of Nasa’s Artemis lunar exploration program established last year to land US astronauts, including the first woman and the next man, on the moon by 2024. The agency has indicated that missions further afield, to Mars for instance, will require the use of locally mined resources. “We will use what we learn on and around the moon to take the next giant leap – sending astronauts to Mars,” Bridenstine wrote. In a blogpost, Bridenstine said the effort would comply with the Outer Space Treaty of 1967, which says that no country may lay sovereign claim to the moon or other celestial bodies in much the same way that the Antarctic continent is off-limits for territorial conquest. In May, Nasa unveiled a legal framework that would govern the behavior of countries and companies in space and on the moon. The legal framework, known as the Artemis Accords, include the creation of “safety zones” around sites where mining and exploration would take place on the lunar surface. Nasa’s top administrator also told a forum held by the Secure World Foundation that the policies that will govern mining from celestial bodies would be much the same as those that currently exist for the world’s oceans. “We do believe we can extract and utilize the resources of the moon, just as we can extract and utilize tuna from the ocean,” he said, without referring to overfishing and pollution that is rapidly destroying fish stocks in many regions. Unlike fisheries, however, participating celestial mining companies would be required to provide imagery of the material and the location from which it was recovered. Nasa already has a separate program to contract companies to fly science experiments and cargo to the moon ahead of a human landing. Those include Astrobotic, SpaceX, Blue Origin, Sierra Nevada Corp and Lockheed Martin. Bridenstine said he anticipated some of those might also be interested in lunar mining. Casey Dreier, chief advocate & senior space policy adviser at the Planetary Society, wrote on Twitter that the importance of Nasa’s announcement is “not so much the financial incentive (which is tiny) but in establishing the legal precedent that private companies can collect and sell celestial materials (with the explicit blessing of NASA/U.S. gov)”.

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

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

#### America’s public-sector space program recently had a rough couple of weeks that perfectly exemplify why it desperately needs a free-market overhaul. On July 29, the International Space Station (ISS) suffered a serious loss of control after a Russian spacecraft docked with it, accidentally causing the station to make a full 540-degree rotation and a half before coming to a stop upside down, when the astronauts got it under control. Like most NASA programs, the ISS is massively over budget. Costs were initially projected at $12.2 billion, but the bill ultimately reached a stunning $150 billion. American taxpayers paid around 84 percent of that. What happened to the American dream of human space exploration? Put simply, the government happened. NASA devolved into a jobs program to bring home the space bacon. Then, on August 10, NASA’s inspector general released a report deeming plans to send astronauts back to the moon in 2024 unfeasible because of significant delays in developing the mission’s spacesuits. Right now the suits are being built by 27 different companies that successfully lobbied the government for a piece of the action. SpaceX’s Elon Musk has rightly noted that NASA has “too many cooks in the kitchen.” The difference between NASA’s cumbersome designed-by-committee suits and SpaceX’s suits — created by a single contractor — is remarkable, even to the naked eye. The report unconvincingly blames NASA’s failure to develop a new spacesuit over the last 14 years solely on shifting technical requirements. It recommends “ensuring technical requirements for the next-generation suits are solidified before selecting the acquisition strategy to procure suits for the ISS and Artemis programs.” Instead of dealing with the problem, the Biden administration is trying to distract attention from the space agency’s mismanagement by announcing plans to land the first person of color on the moon . . . even though NASA has been incapable of sending astronauts of any color into space under its own power since July 2011. NASA has been reduced to begging the Russians for a ride. The agency’s troubled Constellation program, meant to replace the Space Shuttle fleet, was canceled after tens of billions of dollars had already been spent. But NASA’s troubles are, depressingly, likely to get even worse. In November the James Webb Space Telescope (JWST) will finally launch, after taxpayers have forked over $9.7 billion. It was originally supposed to launch in 2007 on a budget of $500 million. That means the project is over a decade behind schedule and costing almost 20 times its initial budget. Perhaps the telescope, meant to locate potentially habitable planets around other stars and perhaps even extraterrestrial life, could instead search for a calendar . . . or fiscal sanity . . . in the stars? JWST isn’t the first NASA space telescope to suffer cost overruns and setbacks. The Hubble Space Telescope (HST) was originally intended to launch in 1983, but technical issues delayed the launch until 1990 because the main mirror was incorrectly manufactured. JWST is very likely to fail because it is supposed to unfold itself “origami style” in space in an extremely technically complicated process. If difficulties arise, JWST lacks HST’s generous margin for error because of its location far beyond earth’s orbit at the Sun-Earth L2 LaGrange point. NASA currently lacks the capability to send a team of astronauts out that far to fix any problems. Even if NASA could get out to JWST, the telescope doesn’t have a grappling ring for an astronaut to grab onto and thus could potentially kill astronauts attempting to fix it. It is hard to imagine a better example of the private sector’s amazing ability to outcompete government bureaucracy and mismanagement than NASA’s planned Shuttle replacement, the Space Launch System. It is estimated to cost more than $2 billion per flight. That’s on top of the $20 billion and nine years the agency has already spent developing the vehicle. Contrast that with the comparatively inexpensive $300 million spent by SpaceX to develop the Falcon 9 in a little over four years, and the fact that each Falcon 9 costs around $62 million. One SLS launch could pay for over 32 SpaceX launches. Private ventures such as SpaceX are more efficient because they have a lot more incentive to avoid excessive costs and focus on solutions: Their own money is at stake, and people spend their own money more carefully than they spend taxpayer dollars collected from others. Multiple private American space firms are currently pursuing accomplishments beyond those of NASA, and they are more advanced and ambitious than the entire government space programs of China and the European Union combined. So one possible solution to NASA’s woes would be to greatly increase its reliance on commercial launch providers. And one way to do that would be to return to the system that made civil aviation great: prizes to reward private-sector innovation. Charles Lindbergh flew across the Atlantic Ocean in pursuit of the privately funded Orteig prize, valued at almost $395,000 in today’s money. Another famous example was the X Prize, which rewarded Burt Rutan’s company Scaled Composites with over $14 million in today’s money for becoming the first nongovernmental organization to launch a reusable and manned space vehicle, SpaceShipOne. The X Prize succeeded in creating over $100 million in investment by private corporations and individuals. Aerospace experts expect that establishing a $10 billion prize for successfully landing a crew on Mars and returning it safely to earth could very well lead to a successful landing. That’s a bargain compared with the $500 billion cost estimates NASA puts out for the same objective. And of course in the worst-case failure scenario for a prize program, taxpayers would pay nothing until the mission was complete. A system based on private enterprise incentivized by a fixed prize would end government cost overruns and waste. The cause of space exploration is simply too important to leave to the public sector.