**Framework**

#### 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. Intuitions outweigh - since they’re the foundational basis for any argument and theories that contradict our intuitions are most likely false even if we can’t deductively determine why

#### 3. 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 is Innovation**

#### Space Commercialization drives Tech Innovation in the Status Quo – it provides a unique impetus.

Hampson 17 Joshua Hampson 1-25-2017 “The Future of Space Commercialization” <https://republicans-science.house.gov/sites/republicans.science.house.gov/files/documents/TheFutureofSpaceCommercializationFinal.pdf> (Security Studies Fellow at the Niskanen Center)//Elmer

The size of the space economy is far larger than many may think. In 2015 alone, the global market amounted to $323 billion. Commercial infrastructure and systems accounted for 76 percent of that 9 total, with satellite television the largest subsection at $95 billion. The global space launch market’s 10 11 share of that total came in at $6 billion dollars. It can be hard to disaggregate how space benefits 12 particular national economies, but in 2009 (the last available report), the Federal Aviation Administration (FAA) estimated that commercial space transportation and enabled industries generated $208.3 billion in economic activity in the United States alone. Space is not just about 13 satellite television and global transportation; while not commercial, GPS satellites also underpin personal navigation, such as smartphone GPS use, and timing data used for Internet coordination.14 Without that data, there could be problems for a range of Internet and cloud-based services.15 There is also room for growth. The FAA has noted that while the commercial launch sector has not grown dramatically in the last decade, there are indications that there is latent demand. This 16 demand may catalyze an increase in launches and growth of the wider space economy in the next decade. The Satellite Industry Association’s 2015 report highlighted that their section of the space economy outgrew both the American and global economies. The FAA anticipates that growth to 17 continue, with expectations that small payload launch will be a particular industry driver.18 In the future, emerging space industries may contribute even more the American economy. Space tourism and resource recovery—e.g., mining on planets, moons , and asteroids—in particular may become large parts of that industry. Of course, their viability rests on a range of factors, including costs, future regulation, international problems, and assumptions about technological development. However, there is increasing optimism in these areas of economic production. But the space economy is not just about what happens in orbit, or how that alters life on the ground. The growth of this economy can also contribute to new innovations across all walks of life. Technological Innovation Innovation is generally hard to predict; some new technologies seem to come out of nowhere and others only take off when paired with a new application. It is difficult to predict the future, but it is reasonable to expect that a growing space economy would open opportunities for technological and organizational innovation. In terms of technology, the difficult environment of outer space helps incentivize progress along the margins. Because each object launched into orbit costs a significant amount of money—at the moment between $27,000 and $43,000 per pound, though that will likely drop in the future —each 19 reduction in payload size saves money or means more can be launched. At the same time, the ability to fit more capability into a smaller satellite opens outer space to actors that previously were priced out of the market. This is one of the reasons why small, affordable satellites are increasingly pursued by companies or organizations that cannot afford to launch larger traditional satellites. These small 20 satellites also provide non-traditional launchers, such as engineering students or prototypers, the opportunity to learn about satellite production and test new technologies before working on a full-sized satellite. That expansion of developers, experimenters, and testers cannot but help increase innovation opportunities. Technological developments from outer space have been applied to terrestrial life since the earliest days of space exploration. The National Aeronautics and Space Administration (NASA) maintains a website that lists technologies that have spun off from such research projects. Lightweight 21 nanotubes, useful in protecting astronauts during space exploration, are now being tested for applications in emergency response gear and electrical insulation. The need for certainty about the resiliency of materials used in space led to the development of an analytics tool useful across a range of industries. Temper foam, the material used in memory-foam pillows, was developed for NASA for seat covers. As more companies pursue their own space goals, more innovations will likely come from the commercial sector. Outer space is not just a catalyst for technological development. Satellite constellations and their unique line-of-sight vantage point can provide new perspectives to old industries. Deploying satellites into low-Earth orbit, as Facebook wants to do, can connect large, previously-unreached swathes of 22 humanity to the Internet. Remote sensing technology could change how whole industries operate, such as crop monitoring, herd management, crisis response, and land evaluation, among others. 23 While satellites cannot provide all essential information for some of these industries, they can fill in some useful gaps and work as part of a wider system of tools. Space infrastructure, in helping to change how people connect and perceive Earth, could help spark innovations on the ground as well. These innovations, changes to global networks, and new opportunities could lead to wider economic growth.

**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 billio**n. 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 atstake**,** 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.

#### Strong Innovation solves Extinction.

Matthews 18 Dylan Matthews 10-26-2018 “How to help people millions of years from now” <https://www.vox.com/future-perfect/2018/10/26/18023366/far-future-effective-altruism-existential-risk-doing-good> (Co-founder of Vox, citing Nick Beckstead @ Rutgers University)//Re-cut by Elmer

If you care about improving human lives, you should overwhelmingly care about those quadrillions of lives rather than the comparatively small number of people alive today. The 7.6 billion people now living, after all, amount to less than 0.003 percent of the population that will live in the future. It’s reasonable to suggest that those quadrillions of future people have, accordingly, hundreds of thousands of times more moral weight than those of us living here today do. That’s the basic argument behind Nick Beckstead’s 2013 Rutgers philosophy dissertation, “On the overwhelming importance of shaping the far future.” It’s a glorious mindfuck of a thesis, not least because Beckstead shows very convincingly that this is a conclusion any plausible moral view would reach. It’s not just something that weird utilitarians have to deal with. And Beckstead, to his considerable credit, walks the walk on this. He works at the Open Philanthropy Project on grants relating to the far future and runs a charitable fund for donors who want to prioritize the far future. And arguments from him and others have turned “long-termism” into a very vibrant, important strand of the effective altruism community. But what does prioritizing the far future even mean? The most literal thing it could mean is preventing human extinction, to ensure that the species persists as long as possible. For the long-term-focused effective altruists I know, that typically means identifying concrete threats to humanity’s continued existence — like unfriendly artificial intelligence, or a pandemic, or global warming/out of control geoengineering — and engaging in activities to prevent that specific eventuality. But in a set of slides he made in 2013, Beckstead makes a compelling case that while that’s certainly part of what caring about the far future entails, approaches that address specific threats to humanity (which he calls “targeted” approaches to the far future) have to complement “broad” approaches, where instead of trying to predict what’s going to kill us all, you just generally try to keep civilization running as best it can, so that it is, as a whole, well-equipped to deal with potential extinction events in the future, not just in 2030 or 2040 but in 3500 or 95000 or even 37 million. In other words, caring about the far future doesn’t mean just paying attention to low-probability risks of total annihilation; it also means acting on pressing needs now. For example: We’re going to be better prepared to prevent extinction from AI or a supervirus or global warming if society as a whole makes a lot of scientific progress. And a significant bottleneck there is that the vast majority of humanity doesn’t get high-enough-quality education to engage in scientific research, if they want to, which reduces the **odds that we have enough trained scientists to come up with the breakthroughs** we need as a civilization to survive and thrive. So maybe one of the best things we can do for the far future is to improve school systems — here and now — to harness the group economist Raj Chetty calls “lost Einsteins” (potential innovators who are thwarted by poverty and inequality in rich countries) and, more importantly, the hundreds of millions of kids in developing countries dealing with even worse education systems than those in depressed communities in the rich world. What if living ethically for the far future means living ethically now? Beckstead mentions some other broad, or very broad, ideas (these are all his descriptions): Help make computers faster so that people everywhere can work more efficiently Change intellectual property law so that technological innovation can happen more quickly Advocate for open borders so that people from poorly governed countries can move to better-governed countries and be more productive Meta-research: improve incentives and norms in academic work to better advance human knowledge Improve education Advocate for political party X to make future people have values more like political party X ”If you look at these areas (economic growth and technological progress, access to information, individual capability, social coordination, motives) a lot of everyday good works contribute,” Beckstead writes. “An implication of this is that a lot of everyday good works are good from a broad perspective, even though hardly anyone thinks explicitly in terms of far future standards.” Look at those examples again: It’s just a list of what normal altruistically motivated people, not effective altruism folks, generally do. Charities in the US love talking about the lost opportunities for innovation that poverty creates. Lots of smart people who want to make a difference become scientists, or try to work as teachers or on improving education policy, and lord knows there are plenty of people who become political party operatives out of a conviction that the moral consequences of the party’s platform are good. All of which is to say: Maybe effective altruists aren’t that special, or at least maybe we don’t have access to that many specific and weird conclusions about how best to help the world. If the far future is what matters, and generally trying to make the world work better is among the best ways to help the far future, then effective altruism just becomes plain ol’ do-goodery.

**Climate Change leads to extinction**

**Specktor 19.** Brandon Specktor. June 04 2019. LiveScience. “Human Civilization Will Crumble by 2050 If We Don't Stop Climate Change Now, New Paper Claims.” https://www.livescience.com/65633-climate-change-dooms-humans-by-2050.html. – Livingston RB

It seems every week there's a scary new report about how man-made climate change is going to cause the [collapse of the world's ice sheets](https://www.livescience.com/65524-antarctica-ice-unstable.html), result in the extinction of up to [1 million animal species](https://www.livescience.com/65314-human-influence-species-extinction.html) and — if that wasn't bad enough — make our [beer very, very expensive](https://www.livescience.com/63832-climate-change-will-ruin-beer.html). This week, a new policy paper from an Australian think tank claims that those other reports are slightly off; the risks of climate change are actually much, much worse than anyone can imagine.[According to the paper](https://docs.wixstatic.com/ugd/148cb0_b2c0c79dc4344b279bcf2365336ff23b.pdf), **climate change poses a**"near- to mid-term **existential threat to human civilization**," **and there's a good chance society could collapse as soon as 2050 if serious mitigation actions aren't taken in the next decade**. **Published by the Breakthrough National Centre for Climate Restoration in Melbourne (an independent think tank focused on climate policy) and authored by a climate researcher and a former fossil fuel executive,** the paper's central thesis is that climate scientists are too restrained in their predictions of how climate change will affect the planet in the near future. [[Top 9 Ways the World Could End](https://www.livescience.com/36999-top-scientists-world-enders.html)] The current climate crisis, they say, is larger and more complex than any humans have ever dealt with before. General climate models — like the one that the [United Nations' Panel on Climate Change](https://www.ipcc.ch/sr15/) (IPCC) used in 2018 to predict that a global temperature increase of 3.6 degrees Fahrenheit (2 degrees Celsius) could put hundreds of millions of people at risk — fail to account for the sheer complexity of Earth's many interlinked geological processes; as such, they fail to adequately predict the scale of the potential consequences. The truth, the authors wrote, is probably far worse than any models can fathom. How the world ends What might an accurate worst-case picture of the planet's climate-addled future actually look like, then? The authors provide one particularly grim scenario that begins with world governments "politely ignoring" the advice of scientists and the will of the public to decarbonize the economy (finding alternative energy sources), resulting in a global temperature increase 5.4 F (3 C) by the year 2050. At this point, the world's **ice sheets vanish; brutal droughts kill**many of the **trees** in the [Amazon rainforest](https://www.livescience.com/57266-amazon-river.html) (removing one of the world's largest carbon offsets); and the **planet**plunges **into a feedback loop of ever-hotter, ever-deadlier conditions.** "Thirty-five percent of the global land area, and **55 percent of the** global **population**, are **subject to** more than 20 days a year of [**lethal heat conditions**](https://www.livescience.com/55129-how-heat-waves-kill-so-quickly.html)**, beyond**the threshold of **human survivability**," the authors hypothesized. Meanwhile, droughts, floods and wildfires regularly ravage the land. Nearly one-third of the world's land surface turns to desert. Entire **ecosystems collapse**, beginning with the planet's coral reefs, the rainforest and the Arctic ice sheets. The world's **tropics are hit** hardest by these new climate extremes, destroying the region's agriculture and turning more than **1 billion** people into **refugees**. This mass movement of refugees — coupled with [shrinking coastlines](https://www.livescience.com/51990-sea-level-rise-unknowns.html) and severe drops in food and water availability — begin to **stress the fabric of the world's largest nations,** including the United States. **Armed conflicts over resources**, perhaps culminating in nuclear war, are likely. The result, according to the new paper, is "**outright chaos**" and perhaps "**the end of human global civilization as we know it."** How can this catastrophic vision of the future be prevented? Only with the people of the world accepting climate change for the emergency it is and getting to work — immediately. According to the paper's authors, **the human race has about one decade left to mount a global movement to transition the world economy to a zero-carbon-emissions system**. (Achieving zero-carbon emissions requires either not emitting carbon or balancing carbon emissions with carbon removal.) The effort required to do so "would be akin in scale to the [World War II](https://www.livescience.com/65025-nazi-massacre-site-artifacts.html) emergency mobilization," the authors wrote. The new policy paper was endorsed with a foreword by Adm. Chris Barrie, a retired Australian defense chief and senior royal navy commander who has testified before the Australian Senate about the devastating possibilities climate change poses to national security and overall human well-being. "I told the [Senate] Inquiry that, after [nuclear war](https://www.livescience.com/65603-doomsday-plane-can-survive-nuclear-attack.html), human-induced global warming is the greatest threat to human life on the planet," Barrie wrote in the new paper. "Human life on Earth may be on the

**Warming harms minority groups, and especially the least well off the most.**

**Paddinson 21** Laura Paddison, 21-10-2021, "How the rich are driving climate change," No Publication, https://www.bbc.com/future/article/20211025-climate-how-to-make-the-rich-pay-for-their-carbon-emissions

In 2018, Stefan Gössling and his team spent months scouring the social media profiles of some of the richest celebrities, from Paris Hilton to Oprah Winfrey. The tourism professor from Linnaeus University in Sweden was looking for evidence of how much they were flying.  The answer was a lot. Bill Gates, one of the world's most high-profile environmental advocates, took 59 flights in 2017, according to Gössling's [calculations](https://www.sciencedirect.com/science/article/abs/pii/S016073831930132X?via%3Dihub), covering a distance of around 343,500km (213,000 miles) – more than eight times around the world – generating more than 1,600 tonnes of greenhouse gases (that's equivalent to the [average yearly emissions of 105 Americans](https://data.worldbank.org/indicator/EN.ATM.CO2E.PC?locations=US)).  Gössling's aim was to try to uncover **the individual consumption levels of the mega rich**, whose lifestyles **are often shrouded in secrecy**. His research coincided with a growing environmental movement, spearheaded by Greta Thunberg, which put a spotlight on personal accountability. Flying, one of the most carbon-intensive forms of consumption, became a symbol of this new accountability.  "**The bigger your carbon footprint, the bigger your moral duty,**" Thunberg [wrote in the Guardian](https://www.theguardian.com/environment/2019/jan/25/our-house-is-on-fire-greta-thunberg16-urges-leaders-to-act-on-climate) in 2019.  The last few decades have shone a spotlight on global inequality. From the 2008 financial crisis, to the pandemic and the [increasingly severe impacts of climate change](https://www.bbc.com/future/article/20200618-climate-change-who-is-to-blame-and-why-does-it-matter) – disruptive events tend to hit the poorest first and hardest.But in debates about how to solve inequality, over-consumption is often overlooked. "Each unit you overshoot means someone has to give [something] up," says Lewis Akenji, managing director of Hot or Cool Institute, a Berlin-based think tank. As a result, the outsized carbon footprints of society's richest entrench inequality and threaten the world's ability to stave off catastrophic climate change. The statistics are startling. **The world's wealthiest 10% were responsible for around half of global emissions in 2015, according to a 2020**[**report**](https://www.sei.org/wp-content/uploads/2020/09/research-report-carbon-inequality-era.pdf) from Oxfam and the Stockholm Environment Institute. **The top 1% were responsible for**15% of emissions, **nearly twice as much as the world's poorest 50%,** **who** were responsible for just 7% and **will feel the brunt of climate impacts despite bearing the least responsibility for causing them.**

**Contention 2 is the Economy**

**The private sector in space is growing and investors have poured hundreds of millions into the industry based on projected growth – the aff reverses that and crashes investment**

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Space is hot. **The billionaire “space barons**” — Elon Musk, Jeff Bezos and Richard Branson — [**have given the industry a cachet**](https://www.washingtonpost.com/technology/2020/11/11/nasa-spacex-crew1-launch-space-station/?itid=lk_inline_manual_3)**not seen since the Apollo era of the 1960s and ’70s**, **with** Branson and Bezos flying to the edge of space on their own spacecraft and Musk’s **SpaceX becoming the dominant supplier of people and cargo to the International Space Station.** **Investors are fearful of missing out.** **That’s turned out to be great news for the space companies hoping to get a piece of the satellite-launch business.**But it’s also caused analysts to warn that space is still a nascent and risky business, one rocket explosion away from disaster. **Hundreds of millions of dollars are now flowing to an industry long viewed as too risky for serious investment. New start-ups are blossoming in an explosion reminiscent of the early days of tech,** when money poured into Silicon Valley start-ups at the beginning of the Internet age. Gen. John “Jay” Raymond, the chief of space operations for the U.S. Space Force, even predicted during a recent speech that investment in the commercial space sector would drive “a second Golden Age of space.” **Over the past decade, investors pumped $200 billion into 1,500 space companies around the world**, according to an analysis done by [Space Capital, a space investment firm](https://www.spacecapital.com/). **Investment in start-up space companies reached $7.6 billion last year, a 16 percent increase from 2019**, [according to Bryce Space and Technology](https://brycetech.com/download.php?f=Bryce_Start_Up_Space_2021.pdf), a consulting firm. “**This level of investment is consistent with the 6-year trend beginning in 2015 of unprecedented levels of venture capital driven investment flowing into the space industry**,” the company said. **That has helped drive a $447 billion global space economy that grew 4.4 percent last year**, [according to the Space Foundation](https://spacefoundation.org/), an advocacy group. Over the past 10 years, **the space economy has grown 55 percent,** according to the Foundation, which said**the commercial space products and services market is valued at $219 billion.** In addition to those investments, **several space ventures have gone public over the past year through special purpose acquisition companies, or SPACs. Branson’s Virgin Galactic space tourism company**[**was one of the first high-profile space ventures**](https://www.washingtonpost.com/business/2019/07/09/virgin-galactic-announces-plans-become-first-publicly-listed-space-company/?itid=lk_inline_manual_16)**to go public through a SPAC when it merged with a New York hedge fund in 2019. Since then, SPACs have “exploded in popularity**,”[according to a report by analysts at Avascent and Jefferies](https://www.avascent.com/news-insights/avascent-apogee/space-spacs-valuation-in-zero-g/), a financial advisory firm specializing in aerospace, which found that the **mergers across all industries raised $83 billion in 2020 compared to $14 billion the year before**. But the stocks can be volatile. In the last couple of weeks, for example, the stocks of two space companies took hits when they suffered problems. Shares of Virgin Galactic dipped after the Federal Aviation Administration said it was investigating the company after its flight, with Branson on board, went off course. The probe was first reported by the [New Yorker](https://www.newyorker.com/news/news-desk/the-red-warning-light-on-richard-bransons-space-flight). Astra, a start-up rocket company based outside of San Francisco, saw its stock drop after a launch attempt failed to reach orbit last month. Still, more than a dozen companies have gone public, or announced they would in recent months. They include Planet, which has built a constellation of satellites to take images of the Earth, and Astra. [Rocket Lab, which has launched dozens of small satellites](https://www.washingtonpost.com/news/innovations/wp/2017/11/09/ready-to-book-your-satellite-launch-online-the-rocket-industry-looks-to-run-more-like-an-airline/?itid=lk_inline_manual_21) on its Electron rocket, started trading on the Nasdaq last month. And Virgin Orbit, [which “air launches” a rocket](https://www.washingtonpost.com/technology/2021/01/17/richard-branson-virgin-orbit-launch-success/?itid=lk_inline_manual_21) designed to fly satellites by dropping it from the wing of a 747 airplane, announced that it would go public through a SPAC and that it had raised $100 million in another funding round backed by Boeing and AE Industrial Partners. **International** **companies also are driving growth**, analysts said. “Going forward, I would expect to see it becoming increasingly international,” said Nickolas Boensch, a program manager at Bryce. “China, Japan, the U.K. have been huge players here, and there is something attractive to having a domestic capability.”

**The future of the economy is based on the private-sector driven success of space exploration**

**Clark 20**– President of U.S. Chamber of Commerce with an MBA from Georgetown University. [Suzanne, “Space is our new economic frontier. The US can’t afford to lose out”, CNN Business, 3/02/20, [https://www.cnn.com/2020/03/02/perspectives/space-economic-frontier/index.html]//AV](https://www.cnn.com/2020/03/02/perspectives/space-economic-frontier/index.html%5d/AV)

President Trump's budget, which was released last month, outlines several moonshots that are unlikely to pass a divided Congress. But there's one in particular that both Republicans and Democrats should support wholeheartedly: the $25.2 billion request to fund NASA, a 12% boost [over the prior year](https://www.cnn.com/2020/02/10/tech/nasa-budget-moon-landing-artemis-scn/index.html). **The future of our economy depends on the vigorous pursuit of space exploration.**And with NASA leading the way, the potential for growth — like space itself — has no limits. Since NASA's launch, American space exploration has always been a bipartisan venture. It was President Kennedy who announced our goal of going to the moon, but it was President Nixon who brought that goal to fruition. Reaching the next milestone in interplanetary travel requires a commitment from our leaders that spans political parties and administrations. And with a new space race getting underway — one that could prove even more consequential than the last — NASA needs bipartisan support from Congress today more than ever. **Space is the most promising industry to arise since the birth of the tech sector, with growth projected to skyrocket in the coming years led by companies such as Boeing and Northrop Grumman, and new entrants, such as Virgin Galactic, SpaceX and Blue Origin**. [According to US Chamber of Commerce economists](https://www.uschamber.com/series/above-the-fold/the-space-economy-industry-takes)**, the industry will be worth at least $1.5 trillion by 2040. While no one can fully grasp what our economy will look like 20 years from now, one thing is certain: the private sector space industry will transform how societies across the globe live, communicate and do business.**In fact, it already has. Nearly **every company depends on space-enabled technologies for day-to-day operations — whether they use satellite communications, remote sensing or location-based services.** **Businesses across multiple sectors are leveraging these and other technologies to stake their claim in this new economic frontier.**Pharmaceutical companies such as Merck and Sanofi, for example, are conducting experiments in low-Earth orbit [aboard the International Space Station](https://www.issnationallab.org/research-on-the-iss/areas-of-research/life-sciences/) to evaluate the potential advantages of microgravity in developing new drug treatments that will help people live longer, healthier lives. Companies, such as Bigelow, are committed to making [off-Earth habitation](https://www.cnn.com/2016/05/05/tech/way-up-there-where-will-we-live-space/index.html) a reality. Even retailers are getting in on the action, with companies like Target [funding research](https://www.iss-casis.org/cottonsustainabilitychallenge/) on the International Space Station to produce more sustainable forms of cotton. Lunar colonies, asteroid mining and interplanetary travel — once the stuff of science fiction — could become a reality. But for any of that to happen, we need sustained and meaningful action from members of Congress. They can start by meeting the president's request for NASA funding. Included in the White House budget is [$12.4 billion](https://www.cnn.com/2020/02/10/tech/nasa-budget-moon-landing-artemis-scn/index.html) specifically for lunar exploration that would include landing systems, continued development of the Space Launch System (SLS) and the Orion crew module. These spacecraft will allow us to shuttle people and equipment to the moon and back. They will take us not only beyond Earth's orbit but also into the next phase of **commercial space development**. Most importantly, they **will ensure that the United States continues to outpace competitors like China and Russia in the space race**. Our country must be the vanguard in exploring these new economic frontiers. **Planting the American flag in the private sector space industry will help create the jobs of the future and allow the United States to lead the formation of best practices that will govern the industry for decades to come.** Some might ask if returning to the moon is worth the expense. The answer is undeniably yes. Providing NASA with the resources it needs to succeed is a small investment that will yield tremendous dividends over time. To start**, it would help secure American commercial dominance in a fast-growing industry. It also would be a catalyst for innovation and scientific discovery, with salutary effects that would benefit the entire economy.**

**Econ decline results in nuclear war.**

**Tønnesson 15** [Tønnesson is a research professor at the Peace Research Institute Oslo (PRIO) in Norway and the leader of the East Asia Peace program at Uppsala University in Sweden.] “Deterrence, interdependence and Sino–US peace.” International Area Studies Review, volume 18, number 3, pgs. 297-311. 2015.

Several recent works on China and Sino–US relations have made substantial contributions to the current understanding of how and under what circumstances **a combination of nuclear deterrence and economic interdependence may reduce the risk of war between major powers.** At least four conclusions can be drawn from the review above: **first, those who say that interdependence may both inhibit and drive conflict are right. Interdependence raises the cost of conflict for all sides but asymmetrical or unbalanced dependencies and negative trade expectations may generate tensions leading to trade wars among inter-dependent states that in turn increase the risk of military conflict** (Copeland, 2015: 1, 14, 437; Roach, 2014). **The risk may increase if one of the interdependent countries is governed by an inward-looking socio-economic coalition** (Solingen, 2015); **second, the risk of war between China and the US should not just be analysed bilaterally but include their allies and partners. Third party countries could drag China or the US into confrontation; third, in this context it is of some comfort that the three main economic powers in Northeast Asia** (China, Japan and South Korea) **are all deeply integrated economically through production networks within a global system of trade and finance** (Ravenhill, 2014; Yoshimatsu, 2014: 576); and **fourth, decisions for war and peace are taken by very few people, who act on the basis of their future expectations.** International relations theory must be supplemented by foreign policy analysis in order to assess the value attributed by national decision-makers to economic development and their assessments of risks and opportunities. **If leaders on either side of the Atlantic begin to seriously fear or anticipate their own nation’s decline then they may blame this on external dependence, appeal to anti-foreign sentiments, contemplate the use of force to gain respect or credibility, adopt protectionist policies, and ultimately refuse to be deterred by either nuclear arms or prospects of socioeconomic calamities. Such a dangerous shift could happen abruptly, i.e. under the instigation of actions by a third party – or against a third party.** Yet as long as there is both nuclear deterrence and interdependence, the tensions in East Asia are unlikely to escalate to war. As Chan (2013) says, all states in the region are aware that they cannot count on support from either China or the US if they make provocative moves. T**he greatest risk is not that a territorial dispute leads to war under present circumstances but that changes in the world economy alter those circumstances in ways that render inter-state peace more precarious. If China and the US fail to rebalance their financial and trading relations** (Roach, 2014) **then a trade war could result, interrupting transnational production networks, provoking social distress, and exacerbating nationalist emotions. This could have unforeseen consequences in the field of security, with nuclear deterrence remaining the only factor to protect the world from Armageddon, and unreliably so. Deterrence could lose its credibility: one of the two great powers might gamble that the other yield in a cyber-war or conventional limited war, or third party countries might engage in conflict with each other, with a view to obliging Washington or Beijing to intervene.**