# NC

### 1

#### The standard is maximizing expected wellbeing. Prefer it:

#### Extinction comes first – it’s the worst of all evils

Baum and Barrett 18 - Seth D. Baum & Anthony M. Barrett, Global Catastrophic Risk Institute. 2018. “Global Catastrophes: The Most Extreme Risks.” Risk in Extreme Environments: Preparing, Avoiding, Mitigating, and Managing, edited by Vicki Bier, Routledge, pp. 174–184.

What Is GCR And Why Is It Important? Taken literally, a global catastrophe can be any event that is in some way catastrophic across the globe. This suggests a rather low threshold for what counts as a global catastrophe. An event causing just one death on each continent (say, from a jet-setting assassin) could rate as a global catastrophe, because surely these deaths would be catastrophic for the deceased and their loved ones. However, in common usage, a global catastrophe would be catastrophic for a significant portion of the globe. Minimum thresholds have variously been set around ten thousand to ten million deaths or $10 billion to $10 trillion in damages (Bostrom and Ćirković 2008), or death of one quarter of the human population (Atkinson 1999; Hempsell 2004). Others have emphasized catastrophes that cause long-term declines in the trajectory of human civilization (Beckstead 2013), that human civilization does not recover from (Maher and Baum 2013), that drastically reduce humanity’s potential for future achievements (Bostrom 2002, using the term “existential risk”), or that result in human extinction (Matheny 2007; Posner 2004). A common theme across all these treatments of GCR is that some catastrophes are vastly more important than others. Carl Sagan was perhaps the first to recognize this, in his commentary on nuclear winter (Sagan 1983). Without nuclear winter, a global nuclear war might kill several hundred million people. This is obviously a major catastrophe, but humanity would presumably carry on. However, with nuclear winter, per Sagan, humanity could go extinct. The loss would be not just an additional four billion or so deaths, but the loss of all future generations. To paraphrase Sagan, the loss would be billions and billions of lives, or even more. Sagan estimated 500 trillion lives, assuming humanity would continue for ten million more years, which he cited as typical for a successful species. Sagan’s 500 trillion number may even be an underestimate. The analysis here takes an adventurous turn, hinging on the evolution of the human species and the long-term fate of the universe. On these long time scales, the descendants of contemporary humans may no longer be recognizably “human”. The issue then is whether the descendants are still worth caring about, whatever they are. If they are, then it begs the question of how many of them there will be. Barring major global catastrophe, Earth will remain habitable for about one billion more years 2 until the Sun gets too warm and large. The rest of the Solar System, Milky Way galaxy, universe, and (if it exists) the multiverse will remain habitable for a lot longer than that (Adams and Laughlin 1997), should our descendants gain the capacity to migrate there. An open question in astronomy is whether it is possible for the descendants of humanity to continue living for an infinite length of time or instead merely an astronomically large but finite length of time (see e.g. Ćirković 2002; Kaku 2005). Either way, the stakes with global catastrophes could be much larger than the loss of 500 trillion lives. Debates about the infinite vs. the merely astronomical are of theoretical interest (Ng 1991; Bossert et al. 2007), but they have limited practical significance. This can be seen when evaluating GCRs from a standard risk-equals-probability-times-magnitude framework. Using Sagan’s 500 trillion lives estimate, it follows that reducing the probability of global catastrophe by a mere one-in-500-trillion chance is of the same significance as saving one human life. Phrased differently, society should try 500 trillion times harder to prevent a global catastrophe than it should to save a person’s life. Or, preventing one million deaths is equivalent to a one-in500-million reduction in the probability of global catastrophe. This suggests society should make extremely large investment in GCR reduction, at the expense of virtually all other objectives. Judge and legal scholar Richard Posner made a similar point in monetary terms (Posner 2004). Posner used $50,000 as the value of a statistical human life (VSL) and 12 billion humans as the total loss of life (double the 2004 world population); he describes both figures as significant underestimates. Multiplying them gives $600 trillion as an underestimate of the value of preventing global catastrophe. For comparison, the United States government typically uses a VSL of around one to ten million dollars (Robinson 2007). Multiplying a $10 million VSL with 500 trillion lives gives $5x1021 as the value of preventing global catastrophe. But even using “just" $600 trillion, society should be willing to spend at least that much to prevent a global catastrophe, which converts to being willing to spend at least $1 million for a one-in-500-million reduction in the probability of global catastrophe. Thus while reasonable disagreement exists on how large of a VSL to use and how much to count future generations, even low-end positions suggest vast resource allocations should be redirected to reducing GCR. This conclusion is only strengthened when considering the astronomical size of the stakes, but the same point holds either way. The bottom line is that, as long as something along the lines of the standard riskequals-probability-times-magnitude framework is being used, then even tiny GCR reductions merit significant effort. This point holds especially strongly for risks of catastrophes that would cause permanent harm to global human civilization. The discussion thus far has assumed that all human lives are valued equally. This assumption is not universally held. People often value some people more than others, favoring themselves, their family and friends, their compatriots, their generation, or others whom they identify with. Great debates rage on across moral philosophy, economics, and other fields about how much people should value others who are distant in space, time, or social relation, as well as the unborn members of future generations. This debate is crucial for all valuations of risk, including GCR. Indeed, if each of us only cares about our immediate selves, then global catastrophes may not be especially important, and we probably have better things to do with our time than worry about them. While everyone has the right to their own views and feelings, we find that the strongest arguments are for the widely held position that all human lives should be valued equally. This position is succinctly stated in the United States Declaration of Independence, updated in the 1848 Declaration of Sentiments: “We hold these truths to be self-evident: that all men and 3 women are created equal”. Philosophers speak of an agent-neutral, objective “view from nowhere” (Nagel 1986) or a “veil of ignorance” (Rawls 1971) in which each person considers what is best for society irrespective of which member of society they happen to be. Such a perspective suggests valuing everyone equally, regardless of who they are or where or when they live. This in turn suggests a very high value for reducing GCR, or a high degree of priority for GCR reduction efforts.

#### Non util ethics are impossible

Greene 07 – Joshua, Associate Professor of Social science in the Department of Psychology at Harvard University (The Secret Joke of Kant’s Soul published in Moral Psychology: Historical and Contemporary Readings, accessed: <https://www.gwern.net/docs/philosophy/ethics/2007-greene.pdf>, pages 47-50)

**What turn-of-the-millennium science** **is telling us is that human moral judgment is not a pristine rational enterprise**, that our **moral judgments are driven by a hodgepodge of emotional dispositions, which themselves were shaped by a hodgepodge of evolutionary forces, both biological and cultural**. **Because of this, it is exceedingly unlikely that there is any rationally coherent normative moral theory that can accommodate our moral intuitions**. Moreover, **anyone who claims to have such a theory**, or even part of one, **almost certainly doesn't**. Instead, what that person probably has is a moral rationalization. It seems then, that we have somehow crossed the infamous "is"-"ought" divide. How did this happen? Didn't Hume (Hume, 1978) and Moore (Moore, 1966) warn us against trying to derive an "ought" from and "is?" How did we go from descriptive scientific theories concerning moral psychology to skepticism about a whole class of normative moral theories? The answer is that we did not, as Hume and Moore anticipated, attempt to derive an "ought" from and "is." That is, our method has been inductive rather than deductive. We have inferred on the basis of the available evidence that the phenomenon of rationalist deontological philosophy is best explained as a rationalization of evolved emotional intuition (Harman, 1977). Missing the Deontological Point I suspect that **rationalist deontologists will remain unmoved by the arguments presented here**. Instead, I suspect, **they** **will insist that I have simply misunderstood what** Kant and like-minded **deontologists are all about**. **Deontology, they will say, isn't about this intuition or that intuition**. It's not defined by its normative differences with consequentialism. **Rather, deontology is about taking humanity seriously**. Above all else, it's about respect for persons. It's about treating others as fellow rational creatures rather than as mere objects, about acting for reasons rational beings can share. And so on (Korsgaard, 1996a; Korsgaard, 1996b). **This is, no doubt, how many deontologists see deontology. But this insider's view**, as I've suggested, **may be misleading**. **The problem**, more specifically, **is that it defines deontology in terms of values that are not distinctively deontological**, though they may appear to be from the inside. **Consider the following analogy with religion. When one asks a religious person to explain the essence of his religion, one often gets an answer like this: "It's about love**, really. It's about looking out for other people, looking beyond oneself. It's about community, being part of something larger than oneself." **This sort of answer accurately captures the phenomenology of many people's religion, but it's nevertheless inadequate for distinguishing religion from other things**. This is because many, if not most, non-religious people aspire to love deeply, look out for other people, avoid self-absorption, have a sense of a community, and be connected to things larger than themselves. In other words, secular humanists and atheists can assent to most of what many religious people think religion is all about. From a secular humanist's point of view, in contrast, what's distinctive about religion is its commitment to the existence of supernatural entities as well as formal religious institutions and doctrines. And they're right. These things really do distinguish religious from non-religious practices, though they may appear to be secondary to many people operating from within a religious point of view. In the same way, I believe that most of **the standard deontological/Kantian self-characterizatons fail to distinguish deontology from other approaches to ethics**. (See also Kagan (Kagan, 1997, pp. 70-78.) on the difficulty of defining deontology.) It seems to me that **consequentialists**, as much as anyone else, **have respect for persons**, **are against treating people as mere objects,** **wish to act for reasons that rational creatures can share, etc**. **A consequentialist respects other persons, and refrains from treating them as mere objects, by counting every person's well-being in the decision-making process**. **Likewise, a consequentialist attempts to act according to reasons that rational creatures can share by acting according to principles that give equal weight to everyone's interests, i.e. that are impartial**. This is not to say that consequentialists and deontologists don't differ. They do. It's just that the real differences may not be what deontologists often take them to be. What, then, distinguishes deontology from other kinds of moral thought? A good strategy for answering this question is to start with concrete disagreements between deontologists and others (such as consequentialists) and then work backward in search of deeper principles. This is what I've attempted to do with the trolley and footbridge cases, and other instances in which deontologists and consequentialists disagree. **If you ask a deontologically-minded person why it's wrong to push someone in front of speeding trolley in order to save five others, you will get** characteristically deontological **answers**. Some **will be tautological**: **"Because it's murder!"** **Others will be more sophisticated: "The ends don't justify the means**." "You have to respect people's rights." **But**, as we know, **these answers don't really explain anything**, because **if you give the same people** (on different occasions) **the trolley case** or the loop case (See above), **they'll make the opposite judgment**, even though their initial explanation concerning the footbridge case applies equally well to one or both of these cases. **Talk about rights, respect for persons, and reasons we can share are natural attempts to explain, in "cognitive" terms, what we feel when we find ourselves having emotionally driven intuitions that are odds with the cold calculus of consequentialism**. Although these explanations are inevitably incomplete, **there seems to be "something deeply right" about them because they give voice to powerful moral emotions**. **But, as with many religious people's accounts of what's essential to religion, they don't really explain what's distinctive about the philosophy in question**.

#### That justifies util – it’s impartial, specific to public actors, and resolves infinite regress which explains all value.

Greene 15 — (Joshua Greene, Professor of Psychology @ Harvard, being interviewed by Russ Roberts, “Joshua Greene on Moral Tribes, Moral Dilemmas, and Utilitarianism”, The Library of Economics and Liberty, 1-5-15, Available Online at <https://www.econtalk.org/joshua-greene-on-moral-tribes-moral-dilemmas-and-utilitarianism/#audio-highlights>, accessed 5-17-20, HKR-AM) \*\*NB: Guest = Greene, and only his lines are highlighted/underlined

Guest: Okay. So, I think utilitarianism is very much misunderstood. And this is part of the reason why we shouldn't even call it utilitarianism at all. We should call it what I call 'deep pragmatism', which I think better captures what I think utilitarianism is really like, if you really apply it in real life, in light of an understanding of human nature. But, we can come back to that. The idea, going back to the tragedy of common-sense morality is you've got all these different tribes with all of these different values based on their different ways of life. What can they do to get along? And I think that the best answer that we have is--well, let's back up. In order to resolve any kind of tradeoff, you have to have some kind of common metric. You have to have some kind of common currency. And I think that what utilitarianism, whether it's the moral truth or not, is provide a kind of common currency. So, what is utilitarianism? It's basically the idea that--it's really two ideas put together. One is the idea of impartiality. That is, at least as social decision makers, we should regard everybody's interests as of equal worth. Everybody counts the same. And then you might say, 'Well, but okay, what does it mean to count everybody the same? What is it that really matters for you and for me and for everybody else?' And there the utilitarian's answer is what is sometimes called, somewhat accurately and somewhat misleadingly, happiness. But it's not really happiness in the sense of cherries on sundaes, things that make you smile. It's really the quality of conscious experience. So, the idea is that if you start with anything that you value, and say, 'Why do you care about that?' and keep asking, 'Why do you care about that?' or 'Why do you care about that?' you ultimately come down to the quality of someone's conscious experience. So if I were to say, 'Why did you go to work today?' you'd say, 'Well, I need to make money; and I also enjoy my work.' 'Well, what do you need your money for?' 'Well, I need to have a place to live; it costs money.' 'Well, why can't you just live outside?' 'Well, I need a place to sleep; it's cold at night.' 'Well, what's wrong with being cold?' 'Well, it's uncomfortable.' 'What's wrong with being uncomfortable?' 'It's just bad.' Right? At some point if you keep asking why, why, why, it's going to come down to the conscious experience--in Bentham's terms, again somewhat misleading, the pleasure and pain of either you or somebody else that you care about. So the utilitarian idea is to say, Okay, we all have our pleasures and pains, and as a moral philosophy we should all count equally. And so a good standard for resolving public disagreements is to say we should go with whatever option is going to produce the best overall experience for the people who are affected. Which you can think of as shorthand as maximizing happiness--although I think that that's somewhat misleading. And the solution has a lot of merit to it. But it also has endured a couple of centuries of legitimate criticism. And one of the biggest criticisms--and now we're getting back to the Trolley cases, is that utilitarianism doesn't adequately account for people's rights. So, take the footbridge case. It seems that it's wrong to push that guy off the footbridge. Even if you stipulate that you can save more people's lives. And so anyone who is going to defend utilitarianism as a meta-morality--that is, a solution to the tragedy of common sense morality, as a moral system to adjudicate among competing tribal moral systems--if you are going to defend it in that way, as I do, you have to face up to these philosophical challenges: is it okay to kill on person to save five people in this kind of situation? So I spend a lot of the book trying to understand the psychology of cases like the footbridge case. And you mention these being kind of unrealistic and weird cases. That's actually part of my defense.

#### On their Santos card -

#### A] Their historical examples aren't utilitarian - nazis, slave owners, etc. never claimed to be utilitarian and the philosophical timeline makes that clean ridiculous. The pain those affected went through would also severely outweigh

#### B] Impartiality solves - treats all people are equal which prevents genocidal exclusion logic - we obviously agree stuff like market colonialism is bad we just disagree with their method

#### C] doesn't apply to us - we read a climate change impact which disparetly affects the third world and a disad about agency tradeoffs which is completely divorced from quote unquote sacrificial logic - that specificity comes first because all their examples don't say util in the abstract is bad but that it's occasionally applied badly, we apply it well

### 2

#### The appropriation of outer space by private entities except for asteroid mining is unjust.

#### The private sector is essential for asteroid mining – competition is key and government development is not effective, efficient, or cheap enough. Thiessen 21:

Marc Thiessen, 6-1, 21, Washington Post, Opinion: SpaceX’s success is one small step for man, one giant leap for capitalism, https://www.washingtonpost.com/opinions/2020/06/01/spacexs-success-is-one-small-step-man-one-giant-leap-capitalism/

It was one small step for man, one giant leap for capitalism. Only three countries have ever launched human beings into orbit. This past weekend, SpaceX became the first private company ever to do so, when it sent its Crew Dragon capsule into space aboard its Falcon 9 rocket and docked with the International Space Station. This was accomplished by a company Elon Musk started in 2002 in a California strip mall warehouse with just a dozen employees and a mariachi band. At a time when our nation is debating the merits of socialism, SpaceX has given us an **incredible testament to the power of American free enterprise.** While the left is advocating unprecedented government intervention in almost every sector of the U.S. economy, from health care to energy, **today Americans are celebrating the successful privatization of space travel.** If you want to see the difference between what government and private enterprise can do, consider: It took a private company to give us the first space vehicle with touch-screen controls instead of antiquated knobs and buttons. It took a private company to give us a capsule that can fly entirely autonomously from launch to landing — including docking — without any participation by its human crew. It also took a private company to invent a reusable rocket that can not only take off but land as well. When the Apollo 11 crew reached the moon on July 20, 1969, Neil Armstrong declared “the Eagle has landed.” On Saturday, SpaceX was able to declare that the Falcon had landed when its rocket settled down on a barge in the Atlantic Ocean — ready to be used again. That last development will save the taxpayers incredible amounts of money. The cost to NASA for launching a man into space on the space shuttle orbiter was $170 million per seat, compared with just $60 million to $67 million on the Dragon capsule. The cost for the space shuttle to send a kilogram of cargo into to space was $54,500; with the Falcon rocket, the cost is just $2,720 — a decrease of 95 percent. And while the space shuttle cost $27.4 billion to develop, the Crew Dragon was designed and built for just $1.7 billion — making it the lowest-cost spacecraft developed in six decades. SpaceX did it in six years — far faster than the time it took to develop the space shuttle. ***The private sector does it better, cheaper, faster and more efficiently than government***. Why? Competition. Today, SpaceX has to compete with a constellation of private companies — including legacy aerospace firms such as Orbital ATK and United Launch Alliance and innovative start-ups such as Blue Origin (which is designing a Mars lander and whose owner, Jeff Bezos, also owns The Post) and Virgin Orbit (which is developing rockets than can launch satellites into space from the underside of a 747, avoiding the kinds of weather that delayed the Dragon launch). In the race to put the first privately launched man into orbit, upstart SpaceX had to beat aerospace behemoth Boeing and its Starliner capsule to the punch. It did so — for more than $1 billion less than its competitor. **That spirit of competition and innovation will revolutionize space travel in the years ahead.** Indeed, Musk has his sights set far beyond Earth orbit. Already, SpaceX is working on a much larger version of the Falcon 9 reusable rocket called Super Heavy that will carry a deep-space capsule named Starship capable of carrying up to 100 people to the moon and eventually to Mars. Musk’s goal — the reason he founded SpaceX — is to colonize Mars and make humanity a multiplanetary species. He has set a goal of founding a million-person city on Mars by 2050 complete with iron foundries and pizza joints. Can it be done? Who knows. But this much is certain: **Private-sector innovation is opening the door to a new era of space exploration**. Wouldn’t it be ironic if, just as capitalism is allowing us to explore the farthest reaches of our solar system, Americans decided to embrace socialism back here on Earth?

#### Asteroid mining can happen with private sector innovation and is key to solve a laundry list of impacts--climate change, economic decline and asteroid collisions. Taylor 19

Chris Taylor [journalist], 19 - ("How asteroid mining will save the Earth — and mint trillionaires," Mashable, 2019, accessed 12-13-2021, https://mashable.com/feature/asteroid-mining-space-economy)//ML

How much, exactly? We’re only just beginning to guess. [Asterank](http://www.asterank.com/" \t "_blank), a service that keeps track of some 6,000 asteroids in NASA’s database, prices out the estimated mineral content in each one in the current world market. More than 500 are listed as “>$100 trillion.” The estimated profit on just the top 10 asteroids judged “most cost effective” — that is, the easiest to reach and to mine, subtracting rocket fuel and other operating costs, is around $1.5 trillion.¶ Is it ours for the taking? Well, here’s the thing — we’re taking it already, and have been doing so since we started mining metals thousands of years ago. Asteroid strikes are the only reason rare metals exist in the Earth’s crust; the native ones were all sucked into our planet’s merciless iron core millions of years ago. Why not go to the source?¶ As a side project, space mining can grab water from the rocks and comets — water which, with a little processing makes rocket fuel. Which in turn makes even more currently unimaginable space operations possible, including ones that could give the planet all the energy it needs to avert climate catastrophe. Cislunar space — the bit around us and the moon, the local neighborhood, basically — is about to get very interesting.¶ It’s hard, even for the most asteroid-minded visionaries, to truly believe the full scope of this future space economy right now. Just as hard as it would have been in 1945, when an engineer named Vannevar Bush first proposed [a vast library of shared knowledge that people the world over would access via personal computers](https://en.wikipedia.org/wiki/Memex), to see that mushroom into a global network of streaming movies and grandmas posting photos and trolls and spies who move the needle on presidential elections. ¶ No technology’s pioneer can predict its second-order effects.¶ The space vision thing is particularly difficult in 2019. Not only do we have plenty of urgent problems with democracy and justice to keep us occupied, but the only two companies on the planet to have gone public with asteroid-mining business plans, startups that seemed to be going strong and had launched satellites already, were just bought by larger companies that are, shall we say, less comfortable executing on long-term visions.¶ Planetary Resources was founded in 2012 in a blaze of publicity. Its funding came from, among others, Larry Page, Eric Schmidt, Ross Perot, and the country of Luxembourg. It had inked an orbital launch deal with Virgin Galactic. And it was sold last October to a blockchain software company. (To 21st century readers, this paragraph would look like I’m playing tech world mad libs.)¶ In January, the other company, Deep Space Industries, also partly funded by Luxembourg (way to get in the space race, Luxembourg!), was sold to Bradford Space, owned by a U.S. investment group called the American Industrial Acquisition Corporation. Maybe these new overlords plan on continuing their acquisitions' asteroid mining endeavors rather than stripping the companies for parts. Both companies have been notably silent on the subject. “The asteroid mining bubble has burst,” [declared The Space Review](http://www.thespacereview.com/article/3633/1), one of the few online publications to even pay attention.¶ That’s also to be expected. After all, anyone trying to build Google in 1945 would go bankrupt. Just as the internet needed a half-dozen major leaps forward in computing before it could even exist, space industry needs its launch infrastructure.¶ Currently, the world’s richest person and its most well-known entrepreneur, Jeff Bezos and Elon Musk, respectively, are working on the relatively cheap reusable rockets asteroid pioneers will need. (As I was writing this, Bezos announced in an email blast that one of his New Shepherd rockets had flown to space and back five times like it was nothing, delivering 38 payloads for various customers while remaining entirely intact.) ¶ Meanwhile, quietly, Earth’s scientists are laying the groundwork of research the space economy needs. Japan’s Hayabusa 2 spacecraft has been in orbit around asteroid Ryugu for the last year and a half, learning everything it can. (Ryugu, worth $30 billion according to Asterank, is the website's #1 most cost-effective target.) The craft dropped [tiny hopping robot rovers](https://www.space.com/41941-hayabusa2-asteroid-rovers-hopping-tech.html) and a [small bomb](https://www.space.com/japan-hayabusa2-asteroid-bomb-video.html) on its target; pictures of the small crater that resulted were released afterwards.¶ Officially, the mission is to help us figure out how the solar system formed. Unofficially, it will help us understand whether all those useful metals clump together at the heart of an asteroid, as some theorize. If so, it’s game on for asteroid prospectors. If not, we can still get at the metals with other techniques, such as optical mining (which basically involves sticking an asteroid in a bag and drilling with sunlight; sounds nuts to us, but [NASA has proved it in the lab](https://www.nasa.gov/directorates/spacetech/niac/2017_Phase_I_Phase_II/Sustainable_Human_Exploration/)). It’ll just take more time.¶ Effectively, we’ve just made our first mark at the base of the first space mineshaft. And there’s more to come in 2020 when Hayabusa 2 returns to Earth bearing samples. If its buckets of sand contain a modicum of gold dust, tiny chunks of platinum or pebbles of compressed carbon — aka diamonds — then the Duchy of Luxembourg won’t be the only deep-pocketed investor to sit up and take notice.¶ The possibility of private missions to asteroids, with or without a human crew, is almost here. The next step in the process that takes us from here to where you are? Tell us an inspiring story about it, one that makes people believe, and start to imagine themselves mining in space. How would you explain the world-changing nature of the internet to 1945? How would you persuade them that there was gold to be mined in Vannevar Bush’s idea? You’d let the new economy and its benefits play out in the form of a novel.¶ As Hayabusa dropped a bomb on Ryugu, Daniel Suarez was making the exact same asteroid the target of his fiction. Suarez is a tech consultant and developer turned New York Times bestselling author. His novels thus far have been techno-thrillers: his debut, [Daemon](https://www.amazon.com/dp/B003QP4NPE/ref=dp-kindle-redirect?_encoding=UTF8&btkr=1), a novel of Silicon Valley’s worst nightmare, AI run rampant, made more than a million dollars.¶ So it was a telling shift in cultural mood that Suarez’s latest thriller is also a very in-depth description of — and thinly-disguised advocacy for — asteroid mining. In [Delta-v](https://www.amazon.com/Delta-v-Daniel-Suarez-ebook/dp/B07FLX8V84/ref=sr_1_1?crid=UMNUUSR3NCBX&keywords=delta-v&qid=1556930756&s=digital-text&sprefix=delta-v%2Cdigital-text%2C204&sr=1-1), published in April, a billionaire in the 2030s named Nathan Joyce recruits a team of adventurers who know nothing about space — a world-renowned cave-diver, a world-renowned mountaineer — for the first crewed asteroid mission.¶ Elon Musk fans might expect this to be Joyce’s tale, but he soon fades into the background. The asteroid-nauts are the true heroes of Delta-v. Not only are they offered a massive payday — $6 million each for four years’ work — they also have agency in key decisions in the distant enterprise. Suarez deliberately based them on present-day heroes. The mission is essential, Joyce declares, to save Earth from its major problems. First of all, the fictional billionaire wheels in a fictional Nobel economist to demonstrate the actual truth that the entire global economy is sitting on a [mountain of debt](https://www.washingtonpost.com/opinions/the-247-trillion-global-debt-bomb/2018/07/15/64c5bbaa-86c2-11e8-8f6c-46cb43e3f306_story.html?noredirect=on&utm_term=.5fb3ff1155d9). It has to keep growing or it will implode, so we might as well take the majority of the industrial growth off-world where it can’t do any more harm to the biosphere.¶ Secondly, there’s the climate change fix. Suarez sees asteroid mining as the only way we’re going to build [solar power satellites](https://en.wikipedia.org/wiki/Space-based_solar_power). Which, as you probably know, is a form of uninterrupted solar power collection that is theoretically more effective, inch for inch, than any solar panels on Earth at high noon, but operating 24/7. (In space, basically, it’s always double high noon). ¶ The power collected is beamed back to large receptors on Earth with large, low-power microwaves, which researchers think will be harmless enough to let humans and animals pass through the beam. A space solar power array like [the one China is said to be working on](https://www.forbes.com/sites/scottsnowden/2019/03/12/solar-power-stations-in-space-could-supply-the-world-with-limitless-energy/#2d3f78a54386) could reliably supply 2,000 gigawatts — or over 1,000 times more power than the largest solar farm currently in existence. ¶ “We're looking at a 20-year window to completely replace human civilization's power infrastructure,” Suarez told me, citing the report of the Intergovernmental Panel on Climate Change on the coming catastrophe. Solar satellite technology “has existed since the 1970s. What we were missing is millions of tons of construction materials in orbit. Asteroid mining can place it there.”¶ The Earth-centric early 21st century can’t really wrap its brain around this, but the idea is not to bring all that building material and precious metals down into our gravity well. Far better to create a whole new commodities exchange in space. You mine the useful stuff of asteroids both near to Earth and far, thousands of them taking less energy to reach than the moon. That’s something else we’re still grasping, how relatively easy it is to ship stuff in zero-G environments. ¶ Robot craft can move 10-meter boulders like they’re nothing. You bring it all back to sell to companies that will refine and synthesize it in orbit for a myriad of purposes. Big pharma, to take one controversial industry, would [benefit by taking its manufacturing off-world](https://medium.com/fitch-blog/why-is-big-pharma-interested-in-the-space-economy-c078ac1bf67c). The molecular structure of many chemicals grows better in microgravity.¶ The expectation is that a lot of these space businesses — and all the orbital infrastructure designed to support them — will be automated, controlled remotely via telepresence, and monitored by AI. But Suarez is adamant that thousands if not millions of actual human workers will thrive in the space economy, even as robots take their jobs in old industries back on Earth.¶ “Our initial expansion into space will most likely be unsettled and experimental. Human beings excel in such environments,” he says. “Humans can improvise and figure things out as we go. Robots must be purpose-built, and it's going to take time and experience for us to design and build them.”¶ Which is another way startups back on Earth will get rich in the new economy: designing and building those robots, the nearest thing to selling picks and shovels to prospectors in the space gold rush. Thousands of humans in space at any one time will also require the design and construction of stations that spin to create artificial gravity. Again, this isn’t a great stretch: Using centrifugal force to simulate gravity in space was first proposed by scientists in the 19th century. NASA has had workable designs for spinning cislunar habitats called [O’Neill cylinders](https://en.wikipedia.org/wiki/O%27Neill_cylinder) since the 1970s. We just haven’t funded them. ¶ But the trillionaires clearly will.¶ In short, Suarez has carefully laid out a vision of the orbital economy that offers something for everyone in our divided society. For Green New Deal Millennials, there’s the prospect of removing our reliance on fossil fuels at a stroke and literally lifting dirty industries off the face of the planet. For libertarians and other rugged individualists, there’s a whole new frontier to be developed, largely beyond the reach of government. ¶ For those who worry about asteroids that could wipe out civilization — though luckily, [this isn't likely to happen any time soon](https://mashable.com/article/armageddon-asteroid-threat) — here is a way for humanity to get proficient in moving them out of the way, fast. Indeed, the National Space Society has offered [a proposal](https://space.nss.org/technologies-for-asteroid-capture-into-earth-orbit/) to capture the asteroid Aphosis (which is set to miss Earth in the year 2029, but [not by a very comfortable margin](https://www.space.com/asteroid-apophis-2029-flyby-planetary-defense.html)), keep it in orbit, and turn it into 150 small solar-power satellites, as a proof of concept. ¶ For the woke folks who care about the bloody history of diamond production, there’s the likelihood that space mining would wipe out Earth’s entire diamond industry. “They will be found in quantities unattainable on Earth,” claims Suarez, with good reason. We are starting to discover that there is more crystalized carbon in the cosmos than we ever suspected. Astronomers have identified one [distant planet made entirely of diamond](https://www.nationalgeographic.com/science/phenomena/2014/06/24/diamond-the-size-of-earth/); there may be more, but they are, ironically, hard to see. ¶ We don’t have diamond planets in our solar system (and we can’t do interstellar missions), but we do have diamond-studded asteroids. Mine them for long enough and you will wear diamonds on the soles of your shoes.¶ For investors and entrepreneurs, there is the thrill of racing to be the first member of the four-comma club. ([Neil deGrasse Tyson believes that the first trillionaire will be an asteroid mining mogul](https://www.nbcnews.com/science/space/neil-degrasse-tyson-says-space-ventures-will-spawn-first-trillionaire-n352271); Suarez isn’t sure whether they’ll be the first, but he suspects that asteroid mining “will mint more trillionaires than any industry in history.”) ¶ For the regular guy or gal with a 401K, there’ll be a fast-rising stock market — inflated not by financial shenanigans this time, but an actual increase in what the world counts as wealth.¶ For workers, there is the promise of sharing in the untold riches, both legally and otherwise. It would be hard to stop miners attaining mineral wealth beyond their paycheck, under the table, when your bosses are millions of miles away. Then there’s the likelihood of rapid advancement in this new economy, where the miners fast gain the knowledge necessary to become moguls.¶ “After several tours in space working for others, perhaps on six-month or year-long contracts, it's likely that some workers will partner to set up their own businesses there,” says Suarez. “Either serving the needs of increasing numbers of workers and businesses in space, marketing services to Earth, or launching asteroid mining startups themselves.” All in all, it’s starting to sound a damn sight more beneficial to the human race than the internet economy is. Not a moment too soon. I’ve written encouragingly about asteroid mining several times before, each time touting the massive potential wealth that seems likely to be made. And each time there’s been a sense of disquiet among my readers, a sense that we’re taking our rapacious capitalist ways and exploiting space.¶ Whereas the truth is, this is exactly the version of capitalism humanity has needed all along: the kind where there is no ecosystem to destroy, no marginalized group to make miserable. A safe, dead space where capitalism’s most enthusiastic pioneers can go nuts to their hearts’ content, so long as they clean up their space junk. ¶ ([Space junk](https://mashable.com/category/space-junk) is a real problem in orbital space because it has thousands of vulnerable satellites clustered closely together around our little blue rock. The vast emptiness of cislunar space, not so much.)¶ And because they’re up there making all the wealth on their commodities market, we down here on Earth can certainly afford to focus less on growing our stock market. Maybe even, whisper it low, we can afford a fully functioning social safety net, plus free healthcare and free education for everyone on the planet.¶ It’s also clearly the area where we should have focused space exploration all along. If we settle on Mars, we may disturb as-yet-undiscovered native bacteria — and as the character Nathan Joyce shouts at a group of “Mars-obsessed” entrepreneurs in Delta-V, Mars is basically filled with toxic sand and is thus looking increasingly impossible to colonize. (Sorry, Mark Watney from The Martian, those potatoes would probably kill you.)

#### Warming causes extinction.

Bill McKibben 19, Schumann Distinguished Scholar at Middlebury College; fellow of the American Academy of Arts and Sciences; holds honorary degrees from 18 colleges and universities; Foreign Policy named him to their inaugural list of the world’s 100 most important global thinkers. "This Is How Human Extinction Could Play Out." Rolling Stone. 4-9-2019. https://www.rollingstone.com/politics/politics-features/bill-mckibben-falter-climate-change-817310/

Oh, it could get very bad. In 2015, a study in the Journal of Mathematical Biology pointed out that if the world’s oceans kept warming, by 2100 they might become hot enough to “stop oxygen production by phyto-plankton by disrupting the process of photosynthesis.” Given that two-thirds of the Earth’s oxygen comes from phytoplankton, that would “likely result in the mass mortality of animals and humans.” A year later, above the Arctic Circle, in Siberia, a heat wave thawed a reindeer carcass that had been trapped in the permafrost. The exposed body released anthrax into nearby water and soil, infecting two thousand reindeer grazing nearby, and they in turn infected some humans; a twelve-year-old boy died. As it turns out, permafrost is a “very good preserver of microbes and viruses, because it is cold, there is no oxygen, and it is dark” — scientists have managed to revive an eight-million-year-old bacterium they found beneath the surface of a glacier. Researchers believe there are fragments of the Spanish flu virus, smallpox, and bubonic plague buried in Siberia and Alaska. Or consider this: as ice sheets melt, they take weight off land, and that can trigger earthquakes — seismic activity is already increasing in Greenland and Alaska. Meanwhile, the added weight of the new seawater starts to bend the Earth’s crust. “That will give you a massive increase in volcanic activity. It’ll activate faults to create earthquakes, submarine landslides, tsunamis, the whole lot,” explained the director of University College London’s Hazard Centre. Such a landslide happened in Scandinavia about eight thousand years ago, as the last Ice Age retreated and a Kentucky-size section of Norway’s continental shelf gave way, “plummeting down to the abyssal plain and creating a series of titanic waves that roared forth with a vengeance,” wiping all signs of life from coastal Norway to Greenland and “drowning the Wales-sized landmass that once connected Britain to the Netherlands, Denmark, and Germany.” When the waves hit the Shetlands, they were sixty-five feet high. There’s even this: if we keep raising carbon dioxide levels, we may not be able to think straight anymore. At a thousand parts per million (which is within the realm of possibility for 2100), human cognitive ability falls 21 percent. “The largest effects were seen for Crisis Response, Information Usage, and Strategy,” a Harvard study reported, which is too bad, as those skills are what we seem to need most. I could, in other words, do my best to scare you silly. I’m not opposed on principle — changing something as fundamental as the composition of the atmosphere, and hence the heat balance of the planet, is certain to trigger all manner of horror, and we shouldn’t shy away from it. The dramatic uncertainty that lies ahead may be the most frightening development of all; the physical world is going from backdrop to foreground. (It’s like the contrast between politics in the old days, when you could forget about Washington for weeks at a time, and politics in the Trump era, when the president is always jumping out from behind a tree to yell at you.) But let’s try to occupy ourselves with the most likely scenarios, because they are more than disturbing enough. Long before we get to tidal waves or smallpox, long before we choke to death or stop thinking clearly, we will need to concentrate on the most mundane and basic facts: everyone needs to eat every day, and an awful lot of us live near the ocean. FOOD SUPPLY first. We’ve had an amazing run since the end of World War II, with crop yields growing fast enough to keep ahead of a fast-rising population. It’s come at great human cost — displaced peasant farmers fill many of the planet’s vast slums — but in terms of sheer volume, the Green Revolution’s fertilizers, pesticides, and machinery managed to push output sharply upward. That climb, however, now seems to be running into the brute facts of heat and drought. There are studies to demonstrate the dire effects of warming on coffee, cacao, chickpeas, and champagne, but it is cereals that we really need to worry about, given that they supply most of the planet’s calories: corn, wheat, and rice all evolved as crops in the climate of the last ten thousand years, and though plant breeders can change them, there are limits to those changes. You can move a person from Hanoi to Edmonton, and she might decide to open a Vietnamese restaurant. But if you move a rice plant, it will die. A 2017 study in Australia, home to some of the world’s highest-tech farming, found that “wheat productivity has flatlined as a direct result of climate change.” After tripling between 1900 and 1990, wheat yields had stagnated since, as temperatures increased a degree and rainfall declined by nearly a third. “The chance of that just being variable climate without the underlying factor [of climate change] is less than one in a hundred billion,” the researchers said, and it meant that despite all the expensive new technology farmers kept introducing, “they have succeeded only in standing still, not in moving forward.” Assuming the same trends continued, yields would actually start to decline inside of two decades, they reported. In June 2018, researchers found that a two-degree Celsius rise in temperature — which, recall, is what the Paris accords are now aiming for — could cut U.S. corn yields by 18 percent. A four-degree increase — which is where our current trajectory will take us — would cut the crop almost in half. The United States is the world’s largest producer of corn, which in turn is the planet’s most widely grown crop. Corn is vulnerable because even a week of high temperatures at the key moment can keep it from fertilizing. (“You only get one chance to pollinate a quadrillion kernels of corn,” the head of a commodity consulting firm explained.) But even the hardiest crops are susceptible. Sorghum, for instance, which is a staple for half a billion humans, is particularly hardy in dry conditions because it has big, fibrous roots that reach far down into the earth. Even it has limits, though, and they are being reached. Thirty years of data from the American Midwest show that heat waves affect the “vapor pressure deficit,” the difference between the water vapor in the sorghum leaf’s interior and that in the surrounding air. Hotter weather means the sorghum releases more moisture into the atmosphere. Warm the planet’s temperature by two degrees Celsius — which is, again, now the world’s goal — and sorghum yields drop 17 percent. Warm it five degrees Celsius (nine degrees Fahrenheit), and yields drop almost 60 percent. It’s hard to imagine a topic duller than sorghum yields. It’s the precise opposite of clickbait. But people have to eat; in the human game, the single most important question is probably “What’s for dinner?” And when the answer is “Not much,” things deteriorate fast. In 2010 a severe heat wave hit Russia, and it wrecked the grain harvest, which led the Kremlin to ban exports. The global price of wheat spiked, and that helped trigger the Arab Spring — Egypt at the time was the largest wheat importer on the planet. That experience set academics and insurers to work gaming out what the next food shock might look like. In 2017 one team imagined a vigorous El Niño, with the attendant floods and droughts — for a season, in their scenario, corn and soy yields declined by 10 percent, and wheat and rice by 7 percent. The result was chaos: “quadrupled commodity prices, civil unrest, significant negative humanitarian consequences . . . Food riots break out in urban areas across the Middle East, North Africa, and Latin America. The euro weakens and the main European stock markets lose ten percent.” At about the same time, a team of British researchers released a study demonstrating that even if you can grow plenty of food, the transportation system that distributes it runs through just fourteen major choke-points, and those are vulnerable to — you guessed it — massive disruption from climate change. For instance, U.S. rivers and canals carry a third of the world’s corn and soy, and they’ve been frequently shut down or crimped by flooding and drought in recent years. Brazil accounts for 17 percent of the world’s grain exports, but heavy rainfall in 2017 stranded three thousand trucks. “It’s the glide path to a perfect storm,” said one of the report’s authors. Five weeks after that, another report raised an even deeper question. What if you can figure out how to grow plenty of food, and you can figure out how to guarantee its distribution, but the food itself has lost much of its value? The paper, in the journal Environmental Research, said that rising carbon dioxide levels, by speeding plant growth, seem to have reduced the amount of protein in basic staple crops, a finding so startling that, for many years, agronomists had overlooked hints that it was happening. But it seems to be true: when researchers grow grain at the carbon dioxide levels we expect for later this century, they find that minerals such as calcium and iron drop by 8 percent, and protein by about the same amount. In the developing world, where people rely on plants for their protein, that means huge reductions in nutrition: India alone could lose 5 percent of the protein in its total diet, putting 53 million people at new risk for protein deficiency. The loss of zinc, essential for maternal and infant health, could endanger 138 million people around the world. In 2018, rice researchers found “significantly less protein” when they grew eighteen varieties of rice in high–carbon dioxide test plots. “The idea that food became less nutritious was a surprise,” said one researcher. “It’s not intuitive. But I think we should continue to expect surprises. We are completely altering the biophysical conditions that underpin our food system.” And not just ours. People don’t depend on goldenrod, for instance, but bees do. When scientists looked at samples of goldenrod in the Smithsonian that dated back to 1842, they found that the protein content of its pollen had “declined by a third since the industrial revolution — and the change closely tracks with the rise in carbon dioxide.” Bees help crops, obviously, so that’s scary news. But in August 2018, a massive new study found something just as frightening: crop pests were thriving in the new heat. “It gets better and better for them,” said one University of Colorado researcher. Even if we hit the UN target of limiting temperature rise to two degrees Celsius, pests should cut wheat yields by 46 percent, corn by 31 percent, and rice by 19 percent. “Warmer temperatures accelerate the metabolism of insect pests like aphids and corn borers at a predictable rate,” the researchers found. “That makes them hungrier[,] and warmer temperatures also speed up their reproduction.” Even fossilized plants from fifty million years ago make the point: “Plant damage from insects correlated with rising and falling temperatures, reaching a maximum during the warmest periods.”

## CASE

### Offense

1. **Space debris is hype---there are thousands of satellites and only 15 debris collisions ever**

Mark **Albrecht 16**, Chairman of the board of USSpace LLC & fmr. head of the National Space Council, “Congested space is a serious problem solved by hard work, not hysteria, 5/9/16, https://spacenews.com/op-ed-congested-space-is-a-serious-problem-solved-by-hard-work-not-hysteria/

There are over a half million pieces of human-made material in orbit around our planet. Some are the size of school buses, some the size of BB gun pellets. They all had a function at some point, but now most are simply space debris littered from 100 to 22,000 miles above the Earth. Yet, all behave perfectly according to the laws of physics. Many in the space community have called the collision hazard caused by space debris a crisis.

Popular culture has embraced the risks of collisions in space in films like Gravity. Some participants have dramatized the issue by producing graphics of Earth and its satellites, which make our planet look like a fuzzy marble, almost obscured by a dense cloud of white pellets meant to conceptualize space congestion.

Unfortunately, for the sake of a good visual, satellites are depicted as if they were hundreds of miles wide, like the state of Pennsylvania (for the record, there are no space objects the size of Pennsylvania in orbit). Unfortunately, this is the rule, not the exception, and almost all of these articles, movies, graphics, and simulations are **exaggerated and misleading**. Space debris and collision risk is real, but it **certainly** is **not a crisis.**

So what are the facts?

On the positive side, space is **empty** and it is **vast**. At the altitude of the International Space Station, **one half a degree** of Earth longitude is almost **40 miles long**. That same one half a degree at geostationary orbit, some 22,000 miles up is over 230 miles long. Generally, we don’t intentionally put satellites closer together than one-half degree. That means at geostationary orbit, they are no closer than 11 times as far as the eye can see on flat ground or on the sea: That’s the horizon over the horizon 10 times over. In addition, other than minute forces like solar winds and sparse bits of atmosphere that still exist 500 miles up, **nothing gets in the way of orbiting objects** and **they behave quite predictably**. The location of the smallest spacecraft can be predicated within a 1,000 feet, 24 hours in advance.

Since we first started placing objects into space there have been 11 known low Earth orbit collisions, and three known collisions at geostationary orbit. Think of it: 135 space shuttle flights, all of the Apollo, Gemini and Mercury flights, **hundreds** of telecommunications satellites, **1,300 functioning satellites** on orbit today, **half a million** total objects in space larger than a marble, and **fewer than 15 known collisions**. **Why** do people **worry?**

#### Private entities working with governments resolves the link and better address the symptoms of capitalism by collaborating to solve climate change.

Maanas **Sharma, 21** - ("The Space Review: The privatized frontier: the ethical implications and role of private companies in space exploration," No Publication, 9-7-2021, 12-6-2021https://www.thespacereview.com/article/4238/1)//AW

In recent years, private companies have taken on a larger role in the space exploration system. With lower costs and faster production times, they have displaced some functions of government space agencies. Though many have levied criticism against privatized space exploration, it also allows room for more altruistic actions by government space agencies and the benefits from increased space exploration as a whole. Thus, we should encourage this development, as the process is net ethical in the end. Especially if performed in conjunction with adequate government action on the topic, private space exploration can overcome possible shortcomings in its risky and capitalistic nature and ensure a positive contribution to the general public on Earth. Critics contend that companies must answer to their shareholders and justify their profits. This contributes to a larger overall psyche that prioritizes cost and speed above all else, resulting in significantly increased risks The implications of commercial space exploration have been thrust into the limelight with the successes and failures of billionaire Elon Musk’s company SpaceX. While private companies are not new to space exploration, their prominence in American space exploration efforts has increased rapidly in recent years, fueled by technological innovations, reductions in cost, and readily available funding from government and private sources.[1] In May 2020, SpaceX brought American astronauts to space from American soil for the first time in almost 10 years.[2] Recognizing the greatly reduced costs of space exploration in private companies, NASA’s budget has shifted to significantly relying on private companies.[3] However, private space companies are unique from government space agencies in the way they experience unique sets of market pressures that influence their decision-making process. Hence, the expansion of private control in the space sector turns into a multifaceted contestation of its ethicality. The most obvious ethical concern is the loss of human life. Critics contend that companies must answer to their shareholders and justify their profits. This contributes to a larger overall psyche that prioritizes cost and speed above all else, resulting in significantly increased risks.[4] However, the possible increase in mishaps is largely overstated. Companies recognize the need for safety aboard their expeditions themselves.[5] After all, the potential backlash from a mishap could destroy the company’s reputation and significantly harm their prospects. According to Dr. Nayef Al-Rodhan, Head of the Geneva Centre for Security Policy’s Geopolitics and Global Futures Programme, “because there were no alternatives to government space programs, accidents were seen to some degree as par for the course… By comparison, private companies actually have a far more difficult set of issues to face in the case of a mishap. In a worst case scenario, a private company could make an easy scapegoat.” [6] Another large ethical concern is the prominence capitalism may have in the future of private space exploration and the impacts thereof. The growth of private space companies in recent years has been closely intertwined with capitalism. Companies have largely focused on the most profitable projects, such as space travel and the business of space.[7] Many companies are funded by individual billionaires, such as dearMoon, SpaceX’s upcoming mission to the Moon.[8] Congress has also passed multiple acts for the purpose of reducing regulations on private space companies and securing private access to space. From this, many immediately jump to the conclusion that capitalism in space will recreate the same conditions in outer space that plague Earth today, especially with the increasing push to create a “space-for-space” economy, such as space tourism and new technologies to mine the Moon and asteroids. Critics, such as Jordan Pearson of VICE, believe that promises of “virtually unlimited resources” are only for the rich, and will perpetuate the growing wealth inequality that plagues the world today.[9] However, others contend that just because private space exploration has some capitalist elements, it is by no means an embodiment of unrestricted capitalism. A healthy balance of restricted capitalism—for example, private space companies working through contracts with government agencies or independently under monitoring and regulation by national and international agreements—will avoid the pitfalls that capitalist colonialism faced down here on Earth. Even those who are generally against excessive government regulation should see the benefits of them in space. Lacking any consensus on definitions and rights in space will create undue competition between corporations as well as governments that will harm everyone rather than helping anyone. To create a conducive environment for new space-for-space exploration, one without confrontation but with protection for corporate astronauts, infrastructure, and other interests, governments must create key policies such as a framework for property rights on asteroids, the Moon, and Mars.[7,10] hough 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. 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.

#### Asteroid mining makes post-scarcity possible. Elvis 2021

Elvis, July 19, 2021, Martin Elvisis a senior astrophysicist at the Center for Astrophysics | Harvard & Smithsonian. He is the author of Asteroids: How Love, Fear, and Greed Will Determine Our Future in Space (2021), Riches in space: Asteroids could pay for so much space exploration, <https://aeon.co/essays/asteroid-mining-could-pay-for-space-exploration-and-adventure>

**These vast material supplies could make for an era that people call ‘post-scarcity’, where there’s plenty for everyone, just as there is in the 23rd century of the Star Trek science fiction franchise. The starship crew on Star Trek don’t work to keep themselves fed and housed, that’s taken for granted. They work for adventure and exploration. Asteroid wealth could help all of us take a step towards that happy state.**

#### On Heron, if they’re right that they solve for or cause extinction, this is a double turn with their util bad card. Their util bard card is also just about calculations, which they also do, considering this entire aff is consequentialist and why the magnitude of colonial violence and lung cancer is something we should be concerned with

### Method

#### ROB : Vote for the better debate only – anything else is self-serving, arbitrary, unpredictable, and impact justified

#### Vote neg on presumption –

#### [1] Process turn – using debate as a mode of advocacy ensures the failure of hauntology– competition means debaters ally themselves with individuals who vote for them and alienate those who are positioned with the burden of rejoinder and forced to negate – at worst you vote negative on presumption because they don’t use debate as a stepping stone for their advocacy outside the space and don’t have a net benefit to affirming the 1ac

#### [2] Academia turn – the 1ac is a regurgitation of knowledge that already exists within academia which proves they aren’t a departure from the status quo and voting aff is not intrinsic to affirming hauntology

**[3] Using haunting as a method reinscribes colonial relations- turns the aff**

**Cameron 08**

**(Cultural geographies essay: Indigenous spectrality and the politics of postcolonial ghost stories Emilie Cameron cultural geographies Vol 15, Issue 3, pp. 383 - 393 First Published July 1, 2008)**

The very slipperiness and indeterminacy of haunting makes it amenable to a great variety of invocations and seems to capture something of the unfinished, contested nature of colonial and postcolonial geographies, but in this essay I ask what risks are involved in deploying a ‘spectrogeographical’ lens in studies of the colonial and postcolonial, and particularly in figuring Indigenous bodies, voices, and histories in ghostly terms. If, as Haraway notes, we inevitably read the world through tropes, we can still choose ‘less-deadly version[s] for moral discourse’,11 and at a time when spectral metaphors are proliferating, it seems crucial to interrogate the ‘deadliness’ of this particular line of thought. I would like to make a contribution along these lines by drawing attention to the longer history of haunting tropes in Canada and their re-emergence in the past decade or so in, among other places, a wilderness park in southwestern British Columbia. My intent is to draw points of connection between past and present hauntologies and interrogate the positionality of those who figure Indigenous peoples in ghostly terms. I will argue that allegorical representations of Indigenous peoples as ghosts haunting the Canadian state reinscribe colonial relations even as they are characterized as ‘post’ colonial expressions of recognition and redress, raising questions about the politics of postcolonial ghost stories. In a recent review of the proliferation of haunting metaphors in Canadian cultural production, Goldman and Saul cite Canadian settler-author Catherine Parr Traill’s declaration that ‘ghosts or spirits… appear totally banished from Canada. This is too matter-of-fact a country for such supernaturals to visit’.12 Traill made this claim in 1833, but it was echoed by poet and critic Earle Birney in 1947 when he stated that ‘it’s only by our lack of ghosts we’re haunted’.13 Birney was referring to certain Canadians’ preoccupation with their apparent ‘lack’ of history in comparison to their American neighbours, a matter of particular nationalist concern that has defined Canadian cultural production for decades. Such claims to ‘ghostlessness’, however, are more the exception than the rule. Northey14 argues that, in fact, ghosts have been at the center of nation-building projects in Canada for a long while, beginning in the nineteenth century. In particular, and of relevance to this essay, Bentley15 argues that ghosts have been instrumental figures in efforts to connect Aboriginality with settler history, creating an aesthetic link between the ‘Indian past’ and the settler present. The Aboriginal ghost has been used to evoke a generalized sense of history in the Canadian landscape, but always with a sense of linearity and succession. It is assumed that Aboriginal ghosts are all that remains of the ‘disappearing Indian’, and that settler-Canadians have inherited this rich land from those who have now ‘passed’.

#### [4] Haunting fails and reinforces colonial power because it requires an AFFECT of indigenous death- calls for material change solve better

Cameron 08

(Cultural geographies essay: Indigenous spectrality and the politics of postcolonial ghost stories Emilie Cameron cultural geographies Vol 15, Issue 3, pp. 383 - 393 First Published July 1, 2008)

What does it mean, then, to be ‘haunted’ in a decolonizing settler colony like British Columbia? Who is haunted in these stories, and who or what is doing the haunting? What kind of future might these hauntings demand? Do they signal, as Derrida intended, a recognition of the always unfinished and unfinishable in our relation to the present and past and, by extension, a sense of generosity and hospitality towards ghosts? Or do they, as Sarah Ahmed55 has argued in relation to white guilt in postcolonial Australia, constitute yet another self-referential engagement with the colonial past, in which the experiences and desires of the settler occlude consideration of other desires and possibilities? This is the reason for my wariness in the face of haunting tropes, for I fear that postcolonial ghost stories risk perpetuating a kind of endless ‘dancing around a wound’56 that Daniel David Moses identifies among liberal, left-leaning Canadians, anxiously replaying their complicity in an ugly colonial past while neglecting to mobilize effectively for change in the present. The ghosts of the Stein do not seem to me to represent the Nlaka’pamux with very much dignity or agency, and surely any postcolonial trope we might mobilize ought at the very least to figure Indigenous peoples with dignity. In Haraway’s terms, it seems to me that ‘haunting’ has the potential to function as a particularly ‘deadly’ trope, one that requires the death and immateriality of Indigenous peoples to make an e/affective claim on non-Indigenous British Columbians. It is a trope within which today’s living descendents of the generalized ‘spirits’ haunting the Stein, people like Chiefs Leonard Andrew and Ruby Dunstan, seem to have no place: As the direct descendents of those aboriginal peoples who have inhabited, shared, sustained, and been sustained by the Stein Valley for tens of thousands of years down to the present, our authority in this watershed is inescapable… Under the cooperative authority of our two bands we will maintain the Stein Valley as a wilderness in perpetuity for the enjoyment and enlightenment of all peoples.57 And so, at a time when (primarily non-Aboriginal) geographers, among others, seem to have taken an interest in ghostly matters, it seems critical to acknowledge that ghostliness is a politicized state of being. Many scholars have interpreted these politics as a function of visibility – that is, they suggest that the uncovering and exposure of the ghosts of the past is an emancipatory act. In many cases this may be true, but I would suggest that there is also a politics of vision involved in these hauntologies. Those who see and imagine ghosts are as deserving of interrogation as the ghosts themselves, and the ghosts of the Stein are profoundly self-referential. And so while the spectral does seem to offer a means of conceptualizing that which we cannot easily see, even of giving some voice to colonial traumas, confining the Indigenous to the ghostly also has the potential to re-inscribe the interests of the powerful upon the meanings and memories of place. Further, while in this essay I have bracketed out the possibility that non-Aboriginal hikers truly are connecting with a complex spiritual world in the Stein, I think Métis scholar Warren Cariou’s comments on postcolonial ghosts are worth considering. In contrast to the horror, anxiety, and sense of punishment or revenge conveyed by Indigenous ghosts in settler literatures, Cariou points out that for Native readers and writers, there is no reason that … Indigenous ghosts or spirits should be frightening. Native people already have plenty of evidence in their daily lives of how the legacies of colonialism have been passed down through the generations; they do not need to summon specters to fulfill that function. But Native writers do represent spirits in their work nonetheless; it is just that these spirits are not necessarily figures of uncanny terror. They may be malevolent beings such as the wihtiko or the skeleton-spirit Pahkakos, but they may also be figures of healing, ceremony, or political action. Or they may simply be ancestors. And while many such spirits do seem to address the transgressions of the colonial past, they usually do so as part of a call for some kind of redress or change in the present.58 Haunting need not be about forgetting, avenging, and lurking; richer understandings of time, place, and materiality are available to us, and I would suggest that geographers might reconsider the political potential of haunting tropes in their accounts of the colonial and postcolonial.

5] The aff doesn’t “do” hauntology. They pass a plan. We have solvency too—we do the same affect. There’s no difference in whether the aff or neg wins to do with using hauntology for what the aff claims.

#### [6] testing proves that truth claims can exist independent of their construction

**Bauerlein 1** – English Professor at Emory (Mark, Social Constructionism, Partisan Review 68.2, http://www.bu.edu/partisanreview/archive/2001/2/bauerlein.html)

The weakness of social constructionism as an epistemology lies in the fact that one can agree with the bare premise that knowledge is a construct, but disagree with the conclusion that objectivity is impossible and that the contents of knowledge are dependent upon the social conditions of the knower. Of course, knowledge is constructed. It must be expressed in language, composed methodically, conceived through mental views, all of which are historically derived. Constructionists extend the fact that knowledge materializes in cognitive and linguistic structures which have social determinants into the belief that knowledge has no claim to transcend them. That knowledge cannot transcend the conditions of its origination stems from the notion that cognition is never innocent, that cognition has designs and desires shaping its knowledge-building process, that knowing always has an instrumental purpose. This human dimension is local and situational, constructionists argue, a historical context for knowledge outside of which the knowledge has no general warrant. Even the most ahistorical kinds of knowledge, the principles of logic, mathematics, and science, have a social basis, one obscured by thinkers who have abstracted that knowledge from its rightful setting and used it for purposes of their own. Thus Martin Heidegger claims in a well-known illustration, "Before Newton’s laws were discovered, they were not ‘true’. . . .Through Newton the laws became true" (Being and Time). We only think the laws preceded Newton’s conception because, Heidegger explains, that is how entities "show themselves." But even though Newton’s laws arose at a particular historical moment, in one man’s mind, why assume that the laws are inextricable

from that moment? There is abundant evidence for believing that the truth of Newton’s laws is independent of Newton’s mind, language, class, education, etc. The simple fact that persons of different languages and cultures implement those laws effectively implies their transhistorical and cross-cultural capacity. Engineers and physicists confirm the laws daily without any knowledge of Newton’s circumstances. Three hundred years of experimentation and theory have altered Newton’s laws only by restricting their physical purview. In short, Newton’s laws have been justified in vastly different times and places. Yes, scientists and engineers have de-historicized Newtonian knowledge, pared it down to a few set principles (nobody actually reads the Principia). But though abstract and expedient, the laws of Newtonian physics still have a truth-value, and that value is related not to Newton’s world, but to how well the laws predict outcomes, how reliably they stand up to testing, how useful they are in physical domains. To think otherwise is to deny the distinction between the contents of knowledge and the context of their emergence. This is an old logical mistake, namely, the genetic fallacy: the confusion of a theory’s discovery with its justification. Social constructionists overlook this distinction between discovery (the circumstances of a theory’s origin) and justification (the establishment of its truth).

#### [7] Discourse isn’t the primary shaper of reality --- material change from the plan outweighs --- internal link turns reps

Thierry Balzacq 5, Professor of Political Science and IR @ Namar University, “The Three Faces of Securitization: Political Agency, Audience and Context” European Journal of International Relations, London: Jun 2005, Volume 11, Issue 2

However, despite important insights, this position remains highly disputable. The reason behind this qualification is not hard to understand. With great trepidation my contention is that one of the main distinctions we need to take into account while examining securitization is that between 'institutional' and 'brute' threats. In its attempts to follow a more radical approach to security problems wherein threats are institutional, that is, mere products of communicative relations between agents, the CS has neglected the importance of 'external or brute threats', that is, threats that do not depend on language mediation to be what they are - hazards for human life. In methodological terms, however, any framework over-emphasizing either institutional or brute threat risks losing sight of important aspects of a multifaceted phenomenon. Indeed, securitization, as suggested earlier, is successful when the securitizing agent and the audience reach a common structured perception of an ominous development. In this scheme, there is no security problem except through the language game. Therefore, how problems are 'out there' is exclusively contingent upon how we linguistically depict them. This is not always true. For one, language does not construct reality; at best, it shapes our perception of it. Moreover, it is not theoretically useful nor is it empirically credible to hold that what we say about a problem would determine its essence. For instance, what I say about a typhoon would not change its essence. The consequence of this position, which would require a deeper articulation, is that some security problems are the attribute of the development itself. In short, threats are not only institutional; some of them can actually wreck entire political communities regardless of the use of language. Analyzing security problems then becomes a matter of understanding how external contexts, including external objective developments, affect securitization. Thus, far from being a departure from constructivist approaches to security, external developments are central to it.

#### 8] Hauntology *lock-in privilege* and *do violence to subjects*. Futurity is net better and doesn’t dooms violence against the other now

¶ Manalansan ‘15¶ Martin F. Manalansan IV - Associate Professor of all of the following at The University of Illinois: Gender and Women's Studies, Asian American Studies, Anthropology, Latin American and Caribbean Studies, LAS Global Studies, Center for East Asian and Pacific Studies, and Center for Global Studies. The author holds a Ph.D. in Social Anthropology from The University of Rochester and studied philosophy, Asian Studies and anthropology at the University of the Philippines. As part of claims about futurity, the author references lived excahnges with queer trans women of color. The author also references concurring professional exchanges with David L. Eng, Professor of English at the University of Pennsylvania; Gayatri Gopinath, who is an associate professor of Social and Cultural Analysis and director of Asian/Pacific/American Studies at New York University.; Roderick Ferguson, who is a professor of African American and Gender and Women's Studies in the African American Studies Department at the University of Illinois, Chicago; Chandan Reddy, who is an Associate Professor of Gender, Women & Sexuality Studies at the University of Washington; and the late José Esteban Muñoz, was an American academic in the fields of performance studies, visual culture, queer theory, cultural studies, and critical theory; “A Question from Bruno Latour” This article is part of the series Queer Futures. Fieldsights - Theorizing the Contemporary, Cultural Anthropology Online, July 21, 2015 - <https://www.culanth.org/fieldsights/703-a-question-from-bruno-latour>

My response to the question of “no future” comes from my encounters, engagements, and conversations with colleagues under the aegis of queer-of-color critique, scholars like David Eng, Gayatri Gopinath, Roderick Ferguson, Chandan Reddy, and the late José Esteban Muñoz, among others. We appreciate the renegade antireproductive stance of the “no future” camp, which states that we should not subscribe to a future that is entrenched in heteropatriarchal dreams of marriage and procreation. However, there was a general sense among us that the issue of “no future” comes from a vantage point and a comfortable perch of privilege. As a scholar invested and immersed in the plight of queers of color, futurity is not just a possibility but a necessity. To paraphrase my queer-of-color critique colleagues, we cannot **not** think of a future—it is the very fuel of existence, the pivot that animates and propels energies, performances, feelings, and other bodily capacities. The promise and peril of queer, both as a stance and as a field of study, is precisely in its anticipatory and hopeful dimensions. Queer is constituted by a yearning and a longing for something better than what is here right now. It is, as Muñoz would say, a horizon that we are drawn to and which is not yet here. Consider the group of undocumented immigrant queers of color in New York City whose lives I have been following for years. Dwelling in cramped domiciles and working in contingent jobs, there is very little to witness in their lives that suggests a kind of gay/lesbian triumphalism or the bright markers of the new normal. In fact, they live in precarious conditions but—a very important caveat—they live in moments that showcase fleeting gestures and images of fabulosity set amidst the squalor and mess of their lives. These moments, while fleeting, provide some way for them to think of another day, giving them a brief glimpse of a time and a place where there are sequined gowns, plush salons, and many sparkling things. While this might be called naïve hopefulness, thinking of a future that is an alternative to the present is a potent way to think beyond and against the status quo—to plant the seed for social transformation. In other words, there is a political potential to queer futurity. Or, to put it another way, we need to complicate and unravel the negativity inherent in the “no future” stance and to be open to the various alternative ways a future or futures can be imagined, particularly by those in the margins. Otherwise, we can all just pack our bags, go back home, put on some makeup, close the door, and hide under the bedcovers.

#### 9] Earth mining kills the environment.

Williams 19 Matthew S Williams 8-1-2019 “Asteroid Mining: What Will It Involve and Is This the Future of Wealth?” <https://interestingengineering.com/asteroid-mining-what-will-it-involve-and-is-this-the-future-of-wealth> (writer at Universe Today)//Elmer

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 a great idea. And while it is certainly true than Earth-based mining is far cheaper than going to space would be, that may not be the case indefinitely. Aside from the fact that off-world minerals and ices would be of considerable value to Earth's economy, there is also the way that growing consumption is leading our reserves to become slowly exhausted. In fact, according to some estimates, it is possible that our planet will run out of key elements that are needed for modern industry and food production within the next 50 to 60 years. This alone is a pretty good incentive to tap the virtually inexhaustible supply of elements located off-world. Plus, there are a lot of benefits to expanding humanity's resource base beyond Earth. Here on Earth, mining takes a considerable toll on the natural environment. In fact, depending on the methods used, it can result in erosion, sinkholes, habitat destruction, and the destruction of native animal and plant life. There's also the dangers of toxic runoff and the contamination of soil, groundwater, and surface water, which is a danger to humans, as well as to wildlife and the natural environment. As for smelting, machining, and manufacturing, the environmental damage that results is well-documented. Combined with power generation, these industrial processes are one of the leading contributors to air, water, and pollution. By shifting these burdens off-world, humanity could dramatically-reduce the impact it has on the natural environment.

#### 10] Hauntology’s focus on resolving trauma inevitably binds that trauma to us-that’s especially bad for queer bodies. Also turns the case-focus on resolving past trauma means we can never think outside of them and plan our liberation within the same systems that oppressed us.

O'Rourke and Mulhall 14 [Micheal, and Anne. "In a Queer Time and Space: Slowly, Closely, Over Reading Elizabeth Freeman's Time BindsSocial Text." Social Text. N.p., 10 July 2014. Web. 15 Oct. 2016.]

The folds and unfoldings of “queer time” have been a dominant strand in queer theory over the last decade, to the extent that one could speak of a “temporality turn” in which Freeman’s work has been one fulcrum, both in some of the essays collected in Time Binds and in her curation of the important 2005 GLQroundtable, ‘Theorizing Queer Temporalities’. [[4]](http://socialtextjournal.org/periscope_article/in-a-queer-time-and-space-slowly-closely-over-reading-elizabeth-freemans-time-binds/#note-4910-4) In her most recent book (and subsequent essays), Freeman addresses a number of ways in which this **attention to temporality has inflected discussions of queer subjectivity, desire, identity and queer historiography.** [[5]](http://socialtextjournal.org/periscope_article/in-a-queer-time-and-space-slowly-closely-over-reading-elizabeth-freemans-time-binds/#note-4910-5) **Outlining ‘a dialectic between time and history’** in queer theory – **the conflicts and abrasions between deconstructive and Marxist critical and political commitments** – Freeman notes the key text in the queer temporal turn, Derrida’s Specters of Marx. [[6]](http://socialtextjournal.org/periscope_article/in-a-queer-time-and-space-slowly-closely-over-reading-elizabeth-freemans-time-binds/#note-4910-6) While **Derrida’s hauntology has brought** “to queer theory **the idea that time can produce new social relations and even new forms of justice that counter the chrononormative and chronobiological**” through an attention to the “sensate”– to the uncanny and braided effects of enfleshment and affect – Freeman notes that even **this liberatory synthesis is always already predicated on a valorization of pain, trauma, and unpleasurable ruptures**: “none of these formulations engages with what might be called vulgar physical pleasure.” (10) **The modern subject arises in the interstices where “chrononormativity” and “chronobiopolitics” meet: the binding of “flesh into bodies” through the implantation of particular temporal modes (7) and the installation of such time-bound bodies within the temporal rhythms and trajectories of the nation-state, capitalist production and “even non-nationalist cultural belonging”** (xi). The “sexual dissident,” Freeman notes, is to a degree “produced by” this “sense of modern temporality” (7). However, **within the regimes of “modern” temporality**, Freeman avers, and particularly as inflected by the uncanny temporalities of the Freudian unconscious and its influential “queering” in Judith Butler’s account of melancholy gender, **the queer subject emerges as particularly bound to trauma and loss; to a stuttering in the oedipal structure, a melancholic refusal to relinquish traumatic identifications across the thresholds of the body, of history, of death. Within queer theory,** then, **the subject’s emergence as a ‘wounded morphology’ opens out into** (while simultaneously exceeding, not being wholly captured within) **a collective bound together by a socio-historical “skin” likewise limned as a wounded morphology.** **Why**, Freeman asks, **this monolithic insistence on pain and trauma as that which binds the queer subject and queer transhistorical identifications and collectivities**? **What**, on the other hand, **would** an attention to **a hauntology that focused on erotic pleasure**, on bliss, **unfold in the oscillating warp and weft of queer temporalities and the subjects that such queer times traverse, bind and undo?** In her analyses of literature and film, Freeman demonstrates what emerges through an attention to the erotic conjunctions of bodies across temporal thresholds rather than to the dynamics of loss and lack that inform a focus on desire as the vector of cross-temporal longing and belonging, and how **such queer temporalities might begin to undo the givenness of our governing regimes of the chrononormative and the chronobiopolitical**. In this Periscope Dossier, the respondents pay close attention to and expand on aspects of Freeman’s groundbreaking work with a particular focus on the innovative forms of queer critique and textual analysis that her book and its conceptual and critical frames opens out.