# 1.Extra T

### Extra-T

#### Interpretation – the affirmative must defend that the appropriation of outer space by private entities is unjust.

#### US Code defines private entities

US Code 6 U.S. Code § 1501 – Definitions, <https://www.law.cornell.edu/uscode/text/6/1501#15_A>, 2015 RE

(15)Private entity

(A)In general

Except as otherwise provided in this paragraph, the term “private entity” means any person or private group, organization, proprietorship, partnership, trust, cooperative, corporation, or other commercial or nonprofit entity, including an officer, employee, or agent thereof.

(B)Inclusion

The term “private entity” includes a State, tribal, or local government performing utility services, such as electric, natural gas, or water services.

(C)Exclusion

The term “private entity” does not include a foreign power as defined in section 1801 of title 50.

#### Violation – they also defend public appropriation is unjust

#### Extra-T is a voting issue for fairness and education it makes being negative impossible

#### A) Infinitely regressive – they can attach literally anything onto the resolution – that lets them fiat out of Kritik links and any disad by attaching as many words onto the plan as they want.

#### B) Predictable limits – infinite options means we can’t predict advantage areas – this leads to terrible debates where we’re forced to go for generics – that crushes topic education

#### C) Clash – they circumvent clash by justifying adding on anything onto the resolution – its not what they do its what they justify – clash is the most portable skill in debate because it’s the only unique advantage to the activity that can’t be solved anywhere else. Our interp is key to third and fourth level testing of the aff which results in more rigorous and nuanced debates even if they win K v K debates good our model means link and alt debating gets much more specific.

#### Topical version of the aff solves all of their offense – And thus we affirm: the private appropriation of outer space is unjust. We are a symbolic act of solidarity with the queer body, forcing an interruption to heteronormativity. It solves all of their offense – they get to discuss the public/private distinction, masculine colonization of celestial bodies and the way that corporations have moved beyond the capacity for states to control through transnational corporations and global dominance. This creates the best possible debates because we get to read offense focused on private appropriation. We get specific counter plans and specific K links whereas their model of debate lets them predict our arguments in advance and utilize the plan text to circumvent clash.

# 2.Util

**We offer an alternate rotb.**

**My standard is maximizing expected well-being.**

**1. Reducing existential risks is the top priority in any coherent moral theory**

**Plummer, PhD, 15**

(Theron, Philosophy @St. Andrews http://blog.practicalethics.ox.ac.uk/2015/05/moral-agreement-on-saving-the-world/)

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.** W**hat 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)

**2. Science proves non util ethics are impossible and our version of util solves all aff offense**

**Greene 10** – 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: www.fed.cuhk.edu.hk/~lchang/material/Evolutionary/Developmental/Greene-KantSoul.pdf)

**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**.

**3. Uncertainty and social contract require governments use util**

**Gooden, 1995 (**Robert, philsopher at the Research School of the Social Sciences, Utilitarianism as Public Philosophy. P. 62-63)

Consider, first, the argument from necessity. Public officials are obliged to make their choices under uncertainty, and uncertainty of a very special sort at that. All choices—public and private alike—are made under some degree of uncertainty, of course. But in the nature of things, private individuals will usually have more complete information on the peculiarities of their own circumstances and on the ramifications that alternative possible choices might have on them. Public officials, in contrast, are relatively poorly informed as to the effects that their choices will have on individuals, one by one. What they typically do know are generalities: averages and aggregates. They know what will happen most often to most people as a result of their various possible choices. But that is all. That is enough to allow public policy-makers to use the utilitarian calculus—if they want to use it at all—to choose general rules of conduct. Knowing aggregates and averages, they can proceed to calculate the utility payoffs from adopting each alternative possible general rules.

4. **Disregarding foreseeable harm reifies structures of domination**

**McCluskey 12** – JSD @ Columbia, Professor of Law @ SUNY-Buffalo

(Martha, “How the "Unintended Consequences" Story Promotes Unjust Intent and Impact,” Berkeley La Raza, doi: dx.doi.org/doi:10.15779/Z381664)

**By similarly making structures of inequality appear beyond the reach of law** reform, **the "unintended consequences" message helps update and reinforce the narrowing of protections against intentional racial harm. Justice is centrally a question of whose** interests and whose **harms should count**, in what context and in what form and to whom. **Power is centrally about being able to act without having to take harm to others into account. This power to gain by harming others is strongest when it operates through** systems and **structures that make disregarding that harm appear** routine, rational, and beneficial or at least **acceptable** or perhaps inevitable. By portraying law's unequal harms as the "side effects" of systems and structures with unquestionable "main effects," **the** "**unintended consequences" story helps affirm the resulting harm** even as it seems to offer sympathy and technical assistance. In considering solutions to the financial market problems, the policy puzzle is not that struggling homeowners' interests are overwhelmingly complex or uncertain. Instead, the bigger problem is that overwhelmingly powerful interests and ideologies are actively resisting systemic changes that would make those interests count. The failure to criminally prosecute or otherwise severely penalize high-level financial industry fraud is not primarily the result of uncertainty about the harmful effects of that fraudulent behavior, but because the political and justice systems are skewed to protect the gains and unaccountability of wealthy executives despite the clear harms to hosts of others. **The unequal effects of** the prevailing **policy** response to the crisis **are foreseeable and obvious, not accidental or surprising**. It would not take advanced knowledge of economics to readily predict that modest-income homeowners would tend to be far worse off than bank executives by a policy approach that failed to provide substantial mortgage forgiveness and foreclosure protections for modest-income homeowners but instead provided massive subsidized credit and other protections for Wall Street. Many policy actions likely to alleviate the unequal harm of the crisis similarly are impeded not because consumer advocates, low-income homeowners, or racial justice advocates hesitate to risk major changes in existing systems, or are divided about the technical design of alternative programs or more effective mechanisms for enforcing laws against fraud and racial discrimination. Instead, the problem is that these voices pressing for effective change are often excluded, drowned out or distorted in Congress and in federal agencies such as the Treasury Department and the Federal Reserve, or in the media, in the mainstream economics profession, and to a large extent in legal scholarship about financial markets. More generally, those diverse voices from the bottom have been largely absent or marginalized in the dominant theoretical framework that constructs widespread and severe inequality as unforeseeable and largely inevitable, or even beneficial. Moreover, **justice requires careful attention to both harmful intent and to complex harmful effects**. But **the concept of "unintended consequences" inverts justice by suggesting that the best way to care** for those at the bottom **is to not care to make law more attentive** to the bottom. "**Unintended consequences" arguments promote a simplistic moral message in the guise of sophisticated intellectual critique**-the message that those who lack power should not seek it because the desire for more power is what hurts most. Further, **like Ayn Rand's overt philosophy of selfishness, that message promotes the theme that those who have power to ignore** their **harmful effects on others need not-indeed should not-be induced by law to care about this harm**, because this caring is what is harmful. One right-wing think tank has recently made this moral message more explicit with an economic values campaign suggesting that the intentional pursuit of economic equality is a problem of the immoral envy of those whose economic success proves they are more deserving.169 **Legal scholars and advocates who intend to put intellectual rigor and justice ahead of service to** financial **elites should reject stories of "unintended consequences" and instead scrutinize the power and laws that have so effectively achieved the intention of making devastating losses to so many of us seem natural, inevitable, and beneficial**.

#### 5. Predictions are possible and useful

**Mearsheimer, 01** (John, professor of political science at the University of Chicago, The Tragedy of Great Power Politics, 2001 p. 8, googleprint)

As a result, all political forecasting is bound to include some error. Those who venture to predict, as I do here, should therefore proceed with humility, take care not to exhibit unwarranted confidence, and admit that hindsight is likely to reveal surprises and mistakes. Despite these hazards, social scientists should nevertheless use their theories to make predictions about the future. Making predictions helps inform policy discourse, because it helps make sense of events unfolding in the world around us. And by clarifying points of disagreement, making explicit forecasts helps those with contradictory views to frame their own ideas more clearly. Furthermore, trying to anticipate new events is a good way to test social science theories, because theorists do not have the benefit of hindsight and therefore cannot adjust their claims to fit the evidence (because it is not yet available). In short, the world can be used as a laboratory to decide which theories best explain international politics. In that spirit I employ offensive realism to peer into the future, mindful of both the benefits and the hazards of trying to predict events.

# 3.NASA DA

#### NASA is preserving resources by leveraging private partnerships

Miriam Kramer 21, author of Space, “NASA's plans for the future hinge on the success of private companies,” Axios, 12-7-2021, https://www.axios.com/nasa-private-spaceflight-plans-5a5710e6-5223-4da3-8c5d-5a712e1d862e.html

The private space players who will drive NASA's plans for the coming decade are declaring themselves and defining the stakes. Why it matters: NASA plans to focus on getting people to Mars and the Moon, and its deep space exploration ambitions hinge on the agency being able to successfully hand over major operations in low-Earth orbit to private companies. The space agency hopes companies will build private space stations that its astronauts can use and to continue to buy space on private rockets for launching its satellites and other payloads to orbit and beyond. NASA's "big experiment" right now is to test where these commercial partnerships work, the Planetary Society's Casey Dreier told Axios. What's happening: Last week, NASA announced it would award multimillion-dollar contracts to three teams of commercial space companies to start designing and building privately operated space stations.

#### Plan forces spending trade-offs that crush effective Earth sciences --- risks catastrophic climate change

Haymet 7 (Tony, Director of the Scripps Institution of Oceanography – University of California, San Diego, Mark Abbott, Dean of the College of Oceanic and Atmospheric Science – Oregon State University, and Jim Luyten, Acting Director – Woods Hole Oceanographic Institution, “The Planet NASA Needs to Explore”, Washington Post, 5-10, [http://www.washingtonpost.com/wp-dyn/content/article/2007/05/09/AR2007050902451.html](http://www.lexis.com/research/retrieve))

Decades ago, a shift in NASA priorities sidelined progress in human space exploration. As momentum gathers to reinvigorate human space missions to the moon and Mars, we risk hurting ourselves, and Earth, in the long run. Our planet -- not the moon or Mars -- is under significant threat from the consequences of rapid climate change. Yet the changing NASA priorities will threaten exploration here at home.

NASA not only launches shuttles and builds space stations, it also builds and operates our nation's satellites that observe and monitor the Earth. These satellites collect crucial global data on winds, ice and oceans. They help us forecast hurricanes, track the loss of Arctic sea ice and the rise of sea levels, and understand and prepare for climate changes.

NASA's budget for science missions has declined 30 percent in the past six years, and that trend is expected to continue. As more dollars are reallocated to prepare for missions back to the moon and Mars, sophisticated new satellites to observe the Earth will be delayed, harming Earth sciences.

The National Academy of Sciences has noted that the Landsat satellite system, which takes important measurements of global vegetation, is in its fourth decade of operation and could fail without a clear plan for continuation. The same is true for the QuikSCAT satellite, which provides critical wind data used in forecasting hurricanes and El Niño effects.

In January, a partnership of university and NASA scientists demonstrated that climate change and higher ocean temperatures were reducing the growth of microscopic plants and animals at the heart of the marine food web.

Their analysis was based on nearly a decade of NASA satellite measurements of ocean color, which unfortunately are at risk of being interrupted for several years.

Sea levels are rising, and the Arctic Ocean may be ice-free in summer. The buildup of carbon dioxide in the oceans threatens to make them more acidic, which may in turn hinder the ability of some types of marine life, including corals, to build their shells and skeletons. We must learn as much as we can to assess these threats and develop solutions.

Satellites provide coverage of vast, remote regions of our planet that would otherwise remain unseen, especially the oceans, which play an important role in climate change. Without accurate data on such fundamentals as sea surface height, temperatures and biomass, as well as glacier heights and snowpack thickness, we will not be able to understand the likelihood of dangers such as more severe hurricanes along the Gulf Coast or more frequent forest fires in the Pacific Northwest.

Climate change is the most critical problem the Earth has ever faced.

Government agencies and the private sector, as well as individual citizens, need to better grasp the risks and potential paths of global climate change. Mitigating these risks and preparing for the effects of warming will require scientific understanding of how our complex planet operates, how it is changing, and how that change will affect the environment and human society.

John F. Kennedy's brilliant call to put a man on the moon by the end of the 1960s set an arbitrary deadline, but the deadline we face today is set by nature. NASA must continue to play a vital role in helping find ways to protect our planet for (and perhaps from) its intelligent life. Exploration of space is a noble quest. But we can't afford to be so starry-eyed that we overlook our own planet.

#### NASA Earth Science is crucial to climate adaptation:

#### 1 – Their satellites collect data on sea level rise and tracking sea rise that is crucial to adapting communities to the impacts of climate change – that’s Haymet

#### 2 – They monitor coastal waters and crop stress to maximize water usage and crop growth

Andrea Thompson 17, Associate Editor, Sustainability at Science American, 3-31-2017, "‘Critical’ NASA Climate Missions Targeted in Budget Cuts," Climate Central, https://www.climatecentral.org/news/critical-nasa-climate-missions-budget-cuts-21299

In a budget otherwise scant on specifics, four climate-related NASA satellite missions were proposed for termination, including one already in orbit. Those missions are aimed not only at helping scientists learn more about key parts of the climate system and how global warming is changing them, but also at practical matters such as monitoring the health of the nation’s coastal waters and providing earlier warnings of drought stress in crops. The proposed cancellations mesh with statements made by Trump, administration officials and some members of Congress who have argued that NASA should be focused on outer space and leave the job of observing Earth to other agencies. But NASA’s unparalleled experience and expertise in developing new observational technologies and launching satellites makes it a crucial part of the Earth science enterprise, many experts say. “I don’t see anybody else who could fill that gap,” Adam Sobel, a Columbia University climate scientist, said. While the budget outline is not the final say, as Congress ultimately controls the purse strings, the proposed cuts are indicative of an “undeclared war on climate,” as David Titley, director of the Center for Solutions to Weather and Climate Risk at Penn State and a retired rear admiral in the Navy, put it. Eliminating the proposed missions and other climate science funding to save even a few hundred million dollars is short-sighted, given the long tails of climate change’s expected impacts in the U.S. and around the world, several scientists said.

#### 3 – They improve weather forecasting and natural disaster prediction and relief

Anusuya Datta 16, Executive Editor, Geospatial Media & Communications, 11-23-2016, "Trump may hit NASA’s earth science mission," Geospatial World, https://www.geospatialworld.net/blogs/trump-nasas-earth-science-climate-change-missions-hang-balance/

#### The very idea that NASA is only all about deep space is a flawed one. The agency was always supposed to look close to our planet as well in deep space. In fact, the National Aeronautics and Space Act of 1958 specifies the NASA agenda as focus on “phenomena in the atmosphere and space.” Over the years, NASA, with its long range of earth observation and weather satellites, has vastly improved weather forecasting and natural disaster prediction and relief. A mission that started way back in 1959 with the launch of first weather satellite – Vanguard 2 – continues unabated as the agency launched the multi-billion-dollar weather satellite GOES-R into space as recently as November 19. The joint program with NOAA is set to gradually replace the very successful GOES or Geostationary Operational Environmental Satellite’ mission. NASA is the only federal agency in the world that is capable of studying the impacts of global warming from orbit. It has 17 space missions collecting climate data, contributing to reports on everything from the state of the atmosphere to rising sea levels. Its scientists offer some of the government’s most cited analyses of the extent of climate change

#### Warming is inevitable but adjusting government policy can address the worst effects – specifically, for sea level rise. US responses are modeled globally.

**Economist 17**, "How government policy exacerbates hurricanes like Harvey," Economist, https://www.economist.com/news/leaders/21727898-if-global-warming-were-not-enough-threat-poor-planning-and-unwise-subsidies-make-floods

THE extent of the devastation will become clear only when the floodwater recedes, leaving ruined cars, filthy mud-choked houses and the bloated corpses of the drowned. But as we went to press, with the rain pounding South Texas for the sixth day, Hurricane Harvey had already set records as America’s most severe deluge (see Briefing). In Houston it drenched Harris County in over 4.5trn litres of water in just 100 hours—enough rainfall to cover an eight-year-old child. The fate of America’s fourth-largest city holds the world’s attention, but it is hardly alone. In India, Bangladesh and Nepal, at least 1,200 people have died and millions have been left homeless by this year’s monsoon floods. Last month torrential rains caused a mudslide in Sierra Leone that killed over 1,000—though the exact toll will never be known. Around the world, governments are grappling with the threat from floods. This will ultimately be about dealing with climate change. Just as important, is correcting short-sighted government policy and the perverse incentives that make flooding worse. Judgment day The overwhelming good news is that storms and flooding have caused far fewer deaths in recent decades, thanks to better warning systems and the construction of levees, ditches and shelters. The cyclone that struck Bangladesh in 1970 killed 300,000-500,000 people; the most recent severe one, in 2007, killed 4,234. The bad news is that storms and floods still account for almost three-quarters of weather-related disasters, and they are becoming more common. According to the Munich Re, a reinsurer, their number around the world has increased from about 200 in 1980 to over 600 last year. Harvey was the third “500-year” storm to strike Houston since 1979. At the same time, floods and storms are also becoming more costly. By one estimate, three times as many people were living in houses threatened by hurricanes in 2010 as in 1970, and the number is expected to grow as still more people move to coastal cities. The UN reckons that, in the 20 years to 2015, storms and floods caused $1.7trn of destruction; the World Health Organisation estimates that, in real terms, the global cost of hurricane damage is rising by 6% a year. Flood losses in Europe are predicted to increase fivefold by 2050. One cause is global warming. The frequency and severity of hurricanes vary naturally—America has seen unusually few in the past decade. Yet the underlying global trend is what you would expect from climate change. Warmer seas evaporate faster and warmer air can hold more water vapour, which releases energy when it condenses inside a weather system, feeding the violence of storms and the intensity of deluges. Rising sea levels, predicted to be especially marked in the Gulf of Mexico, exacerbate storm surges, adding to the flooding. Harvey was unusually devastating because it suddenly gained strength before it made landfall on Friday; it then stayed put, dumping its rain on Houston before returning to the Gulf. Again, that is consistent with models of a warmer world. Poor planning bears even more blame. Houston, which has almost no restrictions on land-use, is an extreme example of what can go wrong. Although a light touch has enabled developers to cater to the city’s rapid growth—1.8m extra inhabitants since 2000—it has also led to concrete being laid over vast areas of coastal prairie that used to absorb the rain. According to the Texas Tribune and ProPublica, a charity that finances investigative journalism, since 2010 Harris County has allowed more than 8,600 buildings to be put up inside 100-year floodplains, where floods have a 1% chance of occurring in any year. Developers are supposed to build ponds to hold run-off water that would have soaked into undeveloped land, but the rules are poorly enforced. Because the maps are not kept up to date, properties supposedly outside the 100-year floodplain are being flooded repeatedly. Government failure adds to the harm. Developing countries are underinsured against natural disasters. Swiss Re, a reinsurer, says that of the $50bn or so of losses to floods, cyclones and other disasters in Asia in 2014, only 8% were covered. The Bank of International Settlements calculates that the worst natural catastrophes typically permanently lower the afflicted country’s GDP by almost 2%. America has the opposite problem—the federal government subsidises the insurance premiums of vulnerable houses. The National Flood Insurance Programme (NFIP) has been forced to borrow because it fails to charge enough to cover its risk of losses. Underpricing encourages the building of new houses and discourages existing owners from renovating or moving out. According to the Federal Emergency Management Agency, houses that repeatedly flood account for 1% of NFIP’s properties but 25-30% of its claims. Five states, Texas among them, have more than 10,000 such households and, nationwide, their number has been going up by around 5,000 each year. Insurance is meant to provide a signal about risk; in this case, it stifles it. Mend the roof while the sun shines What to do? Flooding strengthens the case for minimising climate change, which threatens to make wet places wetter and storms stormier. Even those who doubt the science would do well to see action as an insurance policy that pays out if the case is proven. However, that will not happen fast, even if all countries, including America, sign up to international agreements. More immediately, therefore, politicians can learn from Houston. Cities need to protect flood defences and catchment areas, such as the wetlands around Kolkata and the lakes in and around Pokhara in Nepal, whose value is becoming clear. Flood maps need to be up to date. Civil engineers, often starved of funds and strangled by bureaucracy, should be building and reinforcing levees and reservoirs now, before it is too late. The NFIP should start to charge market premiums and developing countries should sell catastrophe bonds. All this is a test of government, of foresight and the ability to withstand the lobbying of homeowners and developers. But politicians and officials who fail the test need to realise that, sooner or later, they will wake up to a Hurricane Harvey of their own.

#### The impact’s global war

Eric **Holthaus 15**, editor at rollingstone magazine citing James Hansen, former NASA climatologist, "The Point of No Return: Climate Change Nightmares Are Here," Rolling Stone, accessed 10-23-2016, http://www.rollingstone.com/politics/news/the-point-of-no-return-climate-change-nightmares-are-already-here-20150805

On July 20th, James Hansen, the former NASA climatologist who brought climate change to the public's attention in the summer of 1988, issued a bombshell: He and a team of climate scientists had identified a newly important feedback mechanism off the coast of Antarctica that suggests mean sea levels could rise 10 times faster than previously predicted: 10 feet by 2065. The authors included this chilling warning: If emissions aren't cut, "We conclude that multi-meter sea-level rise would become practically unavoidable. Social disruption and economic consequences of such large sea-level rise could be devastating. It is not difficult to imagine that conflicts arising from forced migrations and economic collapse might make the planet ungovernable, threatening the fabric of civilization."

# 4.Innovation DA

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#### Strong commercial space catalyzes tech innovation – progress at the margins and spinoff tech change global information networks

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

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.

#### Short innovation cycles mean every contract counts

John J. Klein 19, Senior Fellow and Strategist at Falcon Research Inc. and adjunct professor at the George Washington University Space Policy Institute, 1-15-2019, "Rethinking Requirements and Risk in the New Space Age," Center for a New American Security, https://www.cnas.org/publications/reports/rethinking-requirements-and-risk-in-the-new-space-age

Unfortunately, these variances in models between the MDAP’s lengthy development cycle and the commercial space sector’s 18-month innovation cycle are a result of stark differences in thinking about requirements and risk. Requirements and risk for MDAPs commonly focus on ensuring critical mission capabilities at a given cost. In contrast, the commercial space sector tends to focus more on providing innovation quickly using economies of scale. The commercial sector understands that time dynamically shapes decisions related to requirements and risk because of the relatively short innovation cycle. In a highly competitive space sector with tight profit margins, those unable to innovate quickly will likely be out of business soon. Alternatively, space systems with mission assurance requirements – where failures are detrimental to national security and military operations – often drive DoD’s timelines. Program managers of critical national security space systems commonly require additional time to test and verify that satellites can perform missions with a very low probability of failure.

#### Tech innovation solves every existential threat – cumulative extinction events outweigh the aff

Dylan **Matthews 18**. Co-founder of Vox, citing Nick Beckstead @ Rutgers University. 10-26-2018. "How to help people millions of years from now." Vox. https://www.vox.com/future-perfect/2018/10/26/18023366/far-future-effective-altruism-existential-risk-doing-good

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.\*