### Advantage: climate

#### We’re on the brink of runaway climate change – change needs to happen NOW

**Harvey 8-7**-2021 (Fiona Harvey, environment correspondent, The Guardian, “We’re on the brink of catastrophe, warns Tory climate chief”,” August 7 2021, <https://www.theguardian.com/environment/2021/aug/07/were-on-the-brink-of-catastrophe-warns-tory-climate-chief>) //neth

The world will soon face “catastrophe” from climate breakdown if urgent action is not taken, the British president of vital UN climate talks has warned. Alok Sharma, the UK minister in charge of the Cop26 talks to be held in Glasgow this November, told the Observer that the consequences of failure would be “catastrophic”: “I don’t think there’s any other word for it. You’re seeing on a daily basis what is happening across the world. Last year was the hottest on record, the last decade the hottest decade on record.” But Sharma also insisted the UK could carry on with fossil-fuel projects, in the face of mounting criticism of plans to license new oil and gas fields. He defended the government’s record on plans to reach net zero emissions by 2050, which have been heavily criticised by the UK’s independent Committee on Climate Change, and dismissed controversies over his travel schedule. The Intergovernmental Panel on Climate Change (IPCC), the world’s leading authority on climate science, will publish a comprehensive report on Monday showing how close humanity is to the brink of potentially irreversible disaster caused by extreme weather. “This is going to be the starkest warning yet that human behaviour is alarmingly accelerating global warming and this is why Cop26 has to be the moment we get this right. We can’t afford to wait two years, five years, 10 years – this is the moment,” Sharma warned, in his first major interview since taking charge of the climate talks. “I don’t think we’re out of time but I think we’re getting dangerously close to when we might be out of time. We will see [from the IPCC] a very, very clear warning that unless we act now, we will unfortunately be out of time.” The consequences of global heating were already evident, he said. “We’re seeing the impacts across the world – in the UK or the terrible flooding we’ve seen across Europe and China, or forest fires, the record temperatures that we’ve seen in North America. Every day you will see a new high being recorded in one way or another across the world.” This was not about abstract science but people’s lives, he added. “Ultimately this comes down to the very real human impact this is having across the world. I’ve visited communities that as a result of climate change have literally had to flee their homes and move because of a combination of drought and flooding.” Sharma spoke exclusively to the Observer on the eve of the IPCC report to urge governments, businesses and individuals around the world to take heed, and press for stronger action on greenhouse gas emissions at the Cop26 conference, which he said would be almost the last chance. “This [IPCC report] is going to be a wake-up call for anyone who hasn’t yet understood why this next decade has to be absolutely decisive in terms of climate action. We will also get a pretty clear understanding that human activity is driving climate change at alarming rates,” he said. Disaster was not yet inevitable, and actions now could save lives in the future, he added: “Every fraction of a degree rise [in temperature] makes a difference and that’s why countries have to act now.”

#### Space tourism (ST) harms the atmosphere and contributes to climate change; demand for ST is only increasing

**Pultarova 7-26**-2021 (Teresa Pultarova, space.com, “The rise of space tourism could affect Earth's climate in unforeseen ways, scientists worry,” July 26, 2021, <https://www.space.com/environmental-impact-space-tourism-flights>) //neth

Scientists worry that growing numbers of rocket flights and the rise of space tourism could harm Earth's atmosphere and contribute to climate change. When billionaires Richard Branson and Jeff Bezos soared into space this month aboard their companies' suborbital tourism vehicles, much of the world clapped in awe. But for some scientists, these milestones represented something other than just a technical accomplishment. Achieved after years of delays and despite significant setbacks, the flights marked the potential beginning of a long-awaited era that might see rockets fly through the so-far rather pristine upper layers of the atmosphere far more often than they do today. In the case of SpaceShipTwo, the vehicle operated by Branson's Virgin Galactic, these flights are powered by a hybrid engine that burns rubber and leaves behind a cloud of soot. "Hybrid engines can use different types of fuels, but they always generate a lot of soot," said Filippo Maggi, associate professor of aerospace engineering at Politecnico di Milano, Italy, who researches rocket propulsion technologies and was part of a team that several years ago published an extensive analysis of hybrid rocket engine emissions. "These engines work like a candle, and their burning process creates conditions that are favorable for soot generation." According to Dallas Kasaboski, principal analyst at the space consultancy Northern Sky Research, a single Virgin Galactic suborbital space tourism flight, lasting about an hour and a half, can generate as much pollution as a 10-hour trans-Atlantic flight. Some scientists consider that disconcerting, in light of Virgin Galactic’s ambitions to fly paying tourists to the edge of space several times a day. "Even if the suborbital tourism market is launching at a fraction of the number of launches compared to the rest of the [tourism] industry, each of their flights has a much higher contribution, and that could be a problem," Kasaboski told Space.com. Virgin Galactic's rockets are, of course, not the only culprits. All rocket motors burning hydrocarbon fuels generate soot, Maggi said. Solid rocket engines, such as those used in the past in the boosters of NASA's space shuttle, burn metallic compounds and emit aluminum oxide particles together with hydrochloric acid, both of which have a damaging effect on the atmosphere. The BE-3 engine that powers Blue Origin's New Shepard suborbital vehicle, on the other hand, combines liquid hydrogen and liquid oxygen to create thrust. The BE-3 is not a big polluter compared to other rocket engines, emitting mainly water along with some minor combustion products, experts say. For Karen Rosenlof, senior scientist at the Chemical Sciences Laboratory at the U.S. National Oceanic and Atmospheric Administration (NOAA), the biggest problem is that rockets pollute the higher layers of the atmosphere — the stratosphere, which starts at an altitude of about 6.2 miles (10 kilometers), and the mesosphere, which goes upward from 31 miles (50 km). "You are emitting pollutants in places where you don't normally emit it," Rosenlof told Space.com. "We really need to understand. If we increase these things, what is the potential damage?" So far, the impact of rocket launches on the atmosphere has been negligible, according to Martin Ross, an atmospheric scientist at the Aerospace Corporation who often works with Rosenlof. But that's simply because there have not been that many launches. "The amount of fuel currently burned by the space industry is less than 1% of the fuel burned by aviation," Ross told Space.com. "So there has not been a lot of research, and that makes sense. But things are changing in a way that suggests that we should learn about this in more detail." Northern Sky Research predicts that the number of space tourism flights will skyrocket over the next decade, from maybe 10 a year in the near future to 360 a year by 2030, Kasaboski said. This estimate is still far below the growth rate that space tourism companies like Virgin Galactic and Blue Origin envision for themselves. "Demand for suborbital tourism is extremely high," Kasaboski said. "These companies virtually have customers waiting in a line, and therefore they want to scale up. Ultimately, they would want to fly multiple times a day, just like short-haul aircraft do." The rate of rocket launches delivering satellites into orbit is expected to grow as well. But Kasaboski sees bigger potential for growth in space tourism. "It's like the difference between a cargo flight and a passenger flight," Kasaboski said. "There's a lot more passengers that are looking to fly." The problem is, according to Ross, that the scientific community has no idea and not enough data to tell at what point rocket launches will start having a measurable effect on the planet's climate. At the same time, the stratosphere is already changing as the number of rocket launches sneakily grows.

#### And it’s worsening the ozone hole

**Pultarova 7-26**-2021 (Teresa Pultarova, space.com, “The rise of space tourism could affect Earth's climate in unforeseen ways, scientists worry,” July 26, 2021, <https://www.space.com/environmental-impact-space-tourism-flights>) //neth \*\*brackets in original text

So far, the only direct measurements of the effects of rocket launches on chemical processes in the atmosphere come from the space shuttle era. In the 1990s, as the world was coming together to salvage the damaged ozone layer, NASA, NOAA and the U.S. Air Force put together a campaign that looked at the effects of the emissions from the space shuttle's solid fuel boosters on ozone in the stratosphere. "In the 1990s, there were significant concerns about chlorine from solid rocket motors," Ross said. "Chlorine is the bad guy to ozone in the stratosphere, and there were some models which suggested that ozone depletion from solid rocket motors would be very significant." The scientists used NASA's WB 57 high-altitude aircraft to fly through the plumes generated by the space shuttle rockets in Florida. Reaching altitudes of up to 60,000 feet (19 km), they were able to measure the chemical reactions in the lower stratosphere just after the rockets' passage. "One of the fundamental questions was how much chlorine is being made in these solid rocket motors and in what form," David Fahey, the director of the Chemical Sciences Laboratory at NOAA, who led the study, told Space.com. "We measured it several times and then analyzed the results. At that time, there were not enough space shuttle launches to make a difference globally, but locally one could deplete the ozone layer due to this diffuse plume [left behind by the rocket]." The space shuttle retired 10 years ago, but rockets generating ozone-damaging substances continue launching humans and satellites to space today. In fact, in 2018, in its latest Scientific Assessment of Ozone Depletion, which comes out every four years, the World Meteorological Organization included rockets as a potential future concern. The organization called for more research to be done as the number of launches is expected to increase.

#### The pollution emitted by ST accumulates

**Pultarova 7-26**-2021 (Teresa Pultarova, space.com, “The rise of space tourism could affect Earth's climate in unforeseen ways, scientists worry,” July 26, 2021, <https://www.space.com/environmental-impact-space-tourism-flights>) //neth

"Black carbon in the geoengineering experiment that we did isn't as high as the stuff from these rockets," she said. "The problem is that the higher you go, the longer something lasts. Neither of them is ideal, because either of them would produce heating in places where we don't have heating right now." According to Maggi, the soot particles generated by hybrid rocket engines are extremely small and light-weight. In fact, when he and his colleagues tried to measure the soot output of hybrid rocket engines in a laboratory, they couldn't reliably do it with precision because of the particles' minuscule size. "We were able to measure the particle output from solid rocket motors," Maggi said. "These are about a micron in size, and there [are] a lot of them. But because they are large, they fall to the ground more quickly. In hybrid rocket engines, we were not able to collect the soot from the plume because it's extremely fine, a few nanometres in size." Maggi fears these particles could, in fact, stay in the stratosphere forever. "They have the same size as the carbon emitted by aircrafts," Maggi said. "And we know that there is a layer of carbon in the atmosphere at the flight level of aircrafts which is staying there. It's very likely that particles coming from rocket motors will do the same." The accumulation of these particles over years and decades is what worries the scientists. Just as the current climate crisis started relatively slowly as the amount of carbon released into the atmosphere grew, the pollution in the stratosphere may only start causing harm some years down the road. Rosenlof added that in the long term, injecting pollutants into the stratosphere could alter the polar jet stream, change winter storm patterns or affect average rainfall. "You might go from 25 inches [64 centimeters] a year to 20 inches [51 cm] a year in some places, which maybe doesn't sound like that big of a deal unless you are a farmer trying to grow your wheat right there," Rosenlof said. "Then a subtle change in rainfall can impact your crop yields."

**Warming is linear—every decrease in rising temperatures radically mitigates the risk of existential climate change.**

Xu and Ramanathan 17, Yangyang Xu, Assistant Professor of Atmospheric Sciences at Texas A&M University; and Veerabhadran Ramanathan, Distinguished Professor of Atmospheric and Climate Sciences at the Scripps Institution of Oceanography, University of California, San Diego, 9/26/17, “Well below 2 °C: Mitigation strategies for avoiding dangerous to catastrophic climate changes,” Proceedings of the National Academy of Sciences of the United States of America, Vol. 114, No. 39, p. 10315-10323//recut CHS PK

We are proposing the following extension to the DAI risk categorization: warming greater than 1.5 °C as “dangerous”; warming greater than 3 °C as “catastrophic?”; and warming in excess of 5 °C as “unknown??,” with the understanding that changes of this magnitude, not experienced in the last 20+ million years, pose existential threats to a majority of the population. The question mark denotes the subjective nature of our deduction and the fact that catastrophe can strike at even lower warming levels. The justifications for the proposed extension to risk categorization are given below. From the IPCC burning embers diagram and from the language of the Paris Agreement, we infer that the DAI begins at warming greater than 1.5 °C. Our criteria for extending the risk category beyond DAI include the potential risks of climate change to the physical climate system, the ecosystem, human health, and species extinction. Let us first consider the category of catastrophic (3 to 5 °C warming). The first major concern is the issue of tipping points. Several studies (48, 49) have concluded that 3 to 5 °C global warming is likely to be the threshold for tipping points such as the collapse of the western Antarctic ice sheet, shutdown of deep water circulation in the North Atlantic, dieback of Amazon rainforests as well as boreal forests, and collapse of the West African monsoon, among others. While natural scientists refer to these as abrupt and irreversible climate changes, economists refer to them as catastrophic events (49). Warming of such magnitudes also has catastrophic human health effects. Many recent studies (50, 51) have focused on the direct influence of extreme events such as heat waves on public health by evaluating exposure to heat stress and hyperthermia. It has been estimated that the likelihood of extreme events (defined as 3-sigma events), including heat waves, has increased 10-fold in the recent decades (52). Human beings are extremely sensitive to heat stress. For example, the 2013 European heat wave led to about 70,000 premature mortalities (53). The major finding of a recent study (51) is that, currently, about 13.6% of land area with a population of 30.6% is exposed to deadly heat. The authors of that study defined deadly heat as exceeding a threshold of temperature as well as humidity. The thresholds were determined from numerous heat wave events and data for mortalities attributed to heat waves. According to this study, a 2 °C warming would double the land area subject to deadly heat and expose 48% of the population. A 4 °C warming by 2100 would subject 47% of the land area and almost 74% of the world population to deadly heat, which could pose existential risks to humans and mammals alike unless massive adaptation measures are implemented, such as providing air conditioning to the entire population or a massive relocation of most of the population to safer climates. Climate risks can vary markedly depending on the socioeconomic status and culture of the population, and so we must take up the question of “dangerous to whom?” (54). Our discussion in this study is focused more on people and not on the ecosystem, and even with this limited scope, there are multitudes of categories of people. We will focus on the poorest 3 billion people living mostly in tropical rural areas, who are still relying on 18th-century technologies for meeting basic needs such as cooking and heating. Their contribution to CO2 pollution is roughly 5% compared with the 50% contribution by the wealthiest 1 billion (55). This bottom 3 billion population comprises mostly subsistent farmers, whose livelihood will be severely impacted, if not destroyed, with a one- to five-year megadrought, heat waves, or heavy floods; for those among the bottom 3 billion of the world’s population who are living in coastal areas, a 1- to 2-m rise in sea level (likely with a warming in excess of 3 °C) poses existential threat if they do not relocate or migrate. It has been estimated that several hundred million people would be subject to famine with warming in excess of 4 °C (54). However, there has essentially been no discussion on warming beyond 5 °C. Climate change-induced species extinction is one major concern with warming of such large magnitudes (>5 °C). The current rate of loss of species is ∼1,000-fold the historical rate, due largely to habitat destruction. At this rate, about 25% of species are in danger of extinction in the coming decades (56). Global warming of 6 °C or more (accompanied by increase in ocean acidity due to increased CO2) can act as a major force multiplier and expose as much as 90% of species to the dangers of extinction (57). The bodily harms combined with climate change-forced species destruction, biodiversity loss, and threats to water and food security, as summarized recently (58), motivated us to categorize warming beyond 5 °C as unknown??, implying the possibility of existential threats. Fig. 2 displays these three risk categorizations (vertical dashed lines).

### Solvency

#### Plantext: states should ban the appropriation of outer space by private entities by banning private rocket launches

#### Space tourism and climate action trade off – that means the aff controls the internal link to ALL climate movements

**Diehn 7-20**-2021 (Sonya Diehn, July 20, 2021, “Opinion: We need climate action, not space tourism,” DW.com, <https://www.dw.com/en/opinion-we-need-climate-action-not-space-tourism/a-58312579>) //neth

People's motivation to take action on climate change declines when they see others doing whatever they want, without heed for the consequences. Beyond this demoralization, there is then the actual carbon footprint of space tourism. Look, I'm not against space travel in principle. I'm actually a bit of a science-fiction nerd myself, and get very excited about the possibilities of exploring space. And granted, all tourism — even on Earth — creates carbon emissions. My intention is not to say tourism shouldn't exist. But the problem with space tourism is the proportion. Let's take Richard Branson's Virgin Galactic space flight on July 11. For a suborbital journey of about 100 miles (160 kilometers), the company said the carbon dioxide emissions released were roughly equal to a round-trip trans-Atlantic passenger jet flight. Based on publicly available information, a trip from London to New York City releases about 1.24 metric tons of CO2. To put it another way, that 1 1/2-hour jaunt into space was equivalent to about 3,000 miles (4,800 kilometers) of driving an average passenger car. If Virgin Galactic is adding 3,000 road miles of CO2 emissions to our atmosphere for a single short trip for a mere six people, that devalues efforts — both personal and policy — to protect the climate. The problem could become particularly acute as space tourism ramps up, as it seems could soon be the case: More than 600 people have already made a reservation for a Virgin Galactic space flight, which has a price tag of between $200,000 and $250,000 (€169,000 to €212,000). Branson's Virgin Galactic reportedly focuses on environmental sustainability, although what that entails has not been made clear. I find this to be a very dubious claim, particularly in light of the carbon footprint of such flights. At least billionaire Jeff Bezos gives the environment more than just lip service, by having rockets for his space travel company Blue Origin use hydrogen fuel, which does not produce carbon emissions. But let's please not ignore the fact that hydrogen fuel, though it can be produced using renewable energy, is currently typically produced by — you guessed it — burning fossil fuels.

#### Private space exploration is bad – it risks monopolies and treaty violations – a ban is the only answer

**Ward 2019** (Peter Ward, November 6 2019, “The unintended consequences of privatising space,” sciencefocus.com, <https://www.sciencefocus.com/space/the-unintended-consequences-of-privatising-space/>) //neth

But space tourism companies need to make money, and it’s never going to be cheap to send anyone to space. In the worst-case scenario, the practice becomes another symptom of the world’s massive inequality problem, where the rich pay hundreds of thousands to go into space for a matter of minutes, while the millions on the surface struggle to feed themselves. In the 1990s, the Russians attempted to privatise the Mir space station, but before business took off, they brought the craft crashing down to Earth as the nation cooperated with America on the ISS. There are several companies now looking to establish the world’s first private space station. This would bring obvious benefits – it would open up space as a laboratory to anyone who could pay, and would theoretically bring down the costs of manufacturing in space. But space isn’t the bastion of free-floating freedom some think it is, and it’s ripe for exploitation by monopolies. A space station operator, for example, could decide which fibre optics manufacturer could use its facility and which could not. The fibre optics produced in a zero-gravity environment are much cleaner and more valuable than that produced on Earth, meaning that one company would have a massive advantage, and the space station would decide who had access to the best manufacturing conditions. That’s just one example of a potential monopoly, but if you go further into the future of space exploration, things only get more frightening. Imagine a colony on the Moon or Mars run by a corporation. That one company would control everything the colonists need to survive, from the water to the oxygen to the food. That’s a dangerous amount of power for any company, but it’s a very real scenario. So what stops a major corporation landing on the Moon and setting up a colony? One very old document. The Outer Space Treaty was signed in 1967 by all of the major space-faring nations, and explicitly states nobody can go to another planet or the Moon and claim that territory for their own. It’s a very important document, but it’s flawed. For one thing, the private space sector wasn’t around when the treaty was written so it’s not clear how some of the rules would be applied to private companies. And secondly, given the ambitions of many countries and corporations, there’s no way it’s going to last much longer. Anyone with a plan to land on the Moon or Mars and stay there is going to run into the Outer Space Treaty, and the smart money is on the wealthy and powerful winning out against an old loophole-ridden document. Politicians such as Ted Cruz in the United States have already called for changes to be made to the treaty, and given the increasing amounts of money private space companies spend on lobbying in the United States, more such attempts will follow. It’s imperative that the space community as a whole takes this issue on to ensure the needs of all, and not just the private sector, are taken into account should any alterations be made. The further we look into the future of humans in space, the more reality resembles science fiction. That’s why it’s difficult to make people take the issues which could potentially arise seriously. But now is the time to consider the problems that could arise from a commercially-led space race, and take the necessary small steps now to avoid potentially disastrous consequences in the future.

#### Banning private space travel prevents climate-disaster space accidents and solves legal concerns

**Oduntan 2016** (George Oduntan, September 12, 2016, The Conversation, “SpaceX explosion shows why we must slow down private space exploration until we rewrite law,” <https://theconversation.com/spacex-explosion-shows-why-we-must-slow-down-private-space-exploration-until-we-rewrite-law-65019>) //neth

It is only a matter of time time before we see more than just launch explosions. The risk of serious space accidents will increase as the number of space objects in orbit extends into thousands. The advent of private activities will also exacerbate the problem of space debris, perhaps as private commercial use of the seas has polluted international maritime spaces. The collision of the satellites Iridium 33 and Kosmos 2251 over Siberia in 2009 is a clear example of what may become a common occurrence. Then there are the 100 to 150 tonnes of man-made space objects that re-enter Earth’s atmosphere annually. Lots of these simply burn up, but some do manage to cause damage to private property. Again, it’s only a matter of time before the first human life or limb is lost to this kind of incident. Launches of rockets and payloads are fraught with danger and quite frequently go wrong. But launch accidents appear to affect different countries in different ways. The costs involved in engaging in space station activities are mind boggling and crippling to struggling economies. Increasingly, developing states rely on commercial launchers. But if a private company launches an object that subsequently causes damage in space, the poor state will be liable. And even in those cases where the launch fails due to misfortune or the mistakes of the private launcher, such companies could still escape paying for the launch accident, as such firms often have water-tight exclusion clauses that protect them from liabilities. The bill again goes to the poor state. This is especially likely when it is a Western company working for a developing country. China on the other hand agreed to pay for a lost satellite it had launched for Nigeria. It is therefore essential that any developing state protects itself to the fullest against unsuccessful operations caused by negligent and/or accidental failures. There are also serious issues around the safety of astronauts, who have the legal right to a safe existence when in outer space. But it is unclear whether this law does – or should – extend to private astronauts. Also, a launching state currently must be notified regarding incidents involving astronauts on international missions – and it is required to assist and contribute substantially to search and rescue operations. Can a private company really supply the enormous sums or other resources that may be needed? Will the home state of the private company be willing to pay? Again, the law isn’t clear. With the increase in private participation in space experimentation and perhaps even mineral mining, the provisions governing civil liability over mishaps arising from the operations of a space station are likely to become one of the most contested areas of space law. What if a module or component part fails to function on a space station? In the absence of multilateral rules on this point, a patchwork of legal rules is gradually maintained through MOUs (Memorandum of Understanding) and other national laws such as the US Commercial Space Launchings Act (CSLA) of 1978. How will private companies fit into these as they possibly become partners?

### Fw

**[Standard] The standard is maximizing expected wellbeing. Prefer:**

**1] Theory first –**

**A] Ground – both debaters have ground underneath util because every action has a consequence that can be weighed fairly using different metrics under the framing – other frameworks flow exclusively to one side.**

**B] Topic lit – most articles are written through a utilitarian lens because they are crafted for policymakers and the general public who believes consequences are important – key to fairness because topic lit is how we determine in-round engagement.**

**2] Actor specificity:**

**A] Aggregation – governments only have access to averages and aggregates which are the basis of justification for their policies**

**B] No intent-foresight distinction – If we foresee a consequence, then it becomes part of our deliberation which makes it intrinsic to our action since we intend it to happen**

**Util is intrinsic to us we can’t avoid that maximizing well being is the most moral action**

**Nagel 86:** Thomas Nagel, The View From Nowhere, HUP, 1986: 156-168.

I shall defend the unsurprising claim that sensory pleasure is good and pain bad, no matter whose they are. The point of the exercise is to see how the pressures of objectification operate in a simple case. Physical pleasure and pain do not usually depend on activities or desires which themselves raise questions of justification and value. They are just sensory experiences in relation to which we are fairly passive, but toward which we feel involuntary desire or aversion. Almost [E]veryone takes the avoidance of his {their} own pain and the promotion of his own pleasure as subjective reasons for action in a fairly simple way; they are not back[ed] up by any further reasons.

#### Extinction comes first under any framework

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

There appears to be lot of disagreement in moral philosophy. Whether these many apparent disagreements are deep and irresolvable, I believe there is at least one thing it is reasonable to agree on right now, whatever general moral view we adopt: that it is very important to reduce the risk that all intelligent beings on this planet are eliminated by an enormous catastrophe, such as a nuclear war. How we might in fact try to reduce such existential risks is discussed elsewhere. My claim here is only that we – whether we’re consequentialists, deontologists, or virtue ethicists – should all agree that we should try to save the world. According to consequentialism, we should maximize the good, where this is taken to be the goodness, from an impartial perspective, of outcomes. Clearly one thing that makes an outcome ggood 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 ndermined if there were no future generations of intelligent persons. On his view, my life would contain vastly less well-being if (say) a year after my death the world came to an end. So obviously if Scheffler were right I’d have very strong reason to reduce existential risk. We should also take into account moral uncertainty. What is it reasonable for one to do, when one is uncertain not (only) about the empirical facts, but also about the moral facts? I’ve just argued that there’s agreement among minimally plausible ethical views that we have strong reason to reduce existential risk – not only consequentialists, but also deontologists, virtue ethicists, and sophisticated egoists should agree. But even those (hedonistic egoists) who disagree should have a significant level of confidence that they are mistaken, and that one of the above views is correct. Even if they were 90% sure that their view is the correct one (and 10% sure that one of these other ones is correct), they would have pretty strong reason, from the standpoint of moral uncertainty, to reduce existential risk. Perhaps most disturbingly still, even if we are only 1% sure that the well-being of possible future people matters, it is at least arguable that, from the standpoint of moral uncertainty, reducing existential risk is the most important thing in the world. Again, this is largely for the reason that there are so many people who could exist in the future – there are trillions upon trillions… upon trillions. (For more on this and other related issues, see this excellent dissertation). Of course, it is uncertain whether these untold trillions would, in general, have good lives. It’s possible they’ll be miserable. It is enough for my claim that there is moral agreement in the relevant sense if, at least given certain empirical claims about what future lives would most likely be like, all minimally plausible moral views would converge on the conclusion that we should try to save the world. While there are some non-crazy views that place significantly greater moral weight on avoiding suffering than on promoting happiness, for reasons others have offered (and for independent reasons I won’t get into here unless requested to), they nonetheless seem to be fairly implausible views. And even if things did not go well for our ancestors, I am optimistic that they will overall go fantastically well for our descendants, if we allow them to. I suspect that most of us alive today – at least those of us not suffering from extreme illness or poverty – have lives that are well worth living, and that things will continue to improve. Derek Parfit, whose work has emphasized future generations as well as agreement in ethics, described our situation clearly and accurately: “We live during the hinge of history. Given the scientific and technological discoveries of the last two centuries, the world has never changed as fast. We shall soon have even greater powers to transform, not only our surroundings, but ourselves and our successors. If we act wisely in the next few centuries, humanity will survive its most dangerous and decisive period. Our descendants could, if necessary, go elsewhere, spreading through this galaxy…. Our descendants might, I believe, make the further future very good. But that good future may also depend in part on us. If our selfish recklessness ends human history, we would be acting very wrongly.” (From chapter 36 of On What Matters)

### Method

#### Scenario analysis is pedagogically valuable– enhances creativity and self-reflexivity, deconstructs cognitive biases and flawed ontological assumptions, and enables the imagination and creation of alternative futures.

Barma et al. 16– (May 2016, [Advance Publication Online on 11/6/15], Naazneen Barma, PhD in Political Science from UC-Berkeley, Assistant Professor of National Security Affairs at the Naval Postgraduate School, Brent Durbin, PhD in Political Science from UC-Berkeley, Professor of Government at Smith College, Eric Lorber, JD from UPenn and PhD in Political Science from Duke, Gibson, Dunn & Crutcher, Rachel Whitlark, PhD in Political Science from GWU, Post-Doctoral Research Fellow with the Project on Managing the Atom and International Security Program within the Belfer Center for Science and International Affairs at Harvard, “‘Imagine a World in Which’: Using Scenarios in Political Science,” International Studies Perspectives 17 (2), pp. 1-19, <http://www.naazneenbarma.com/uploads/2/9/6/9/29695681/using_scenarios_in_political_science_isp_2015.pdf>)

Over the past decade, the “cult of irrelevance” in political science scholarship has been lamented by a growing chorus (Putnam 2003; Nye 2009; Walt 2009). Prominent scholars of international affairs have diagnosed the roots of the gap between academia and policymaking, made the case for why political science research is valuable for policymaking, and offered a number of ideas for enhancing the policy relevance of scholarship in international relations and comparative politics (Walt 2005,2011; Mead 2010; Van Evera 2010; Jentleson and Ratner 2011; Gallucci 2012; Avey and Desch 2014). Building on these insights, several initiatives have been formed in the attempt to “bridge the gap.”2 Many of the specific efforts put in place by these projects focus on providing scholars with the skills, platforms, and networks to better communicate the findings and implications of their research to the policymaking community, a necessary and worthwhile objective for a field in which theoretical debates, methodological training, and publishing norms tend more and more toward the abstract and esoteric. Yet enhancing communication between scholars and policymakers is only one component of bridging the gap between international affairs theory and practice. Another crucial component of this bridge is the generation of substantive research programs that are actually policy relevant—a challenge to which less concerted attention has been paid. The dual challenges of bridging the gap are especially acute for graduate students, a particular irony since many enter the discipline with the explicit hope of informing policy. In a field that has an admirable devotion to pedagogical self-reflection, strikingly little attention is paid to techniques for generating policy-relevant ideas for dissertation and other research topics. Although numerous articles and conference workshops are devoted to the importance of experiential and problem-based learning, especially through techniques of simulation that emulate policymaking processes (Loggins 2009; Butcher 2012; Glasgow 2012; Rothman 2012; DiCicco 2014), little has been written about the use of such techniques for generating and developing innovative research ideas. This article outlines an experiential and problem-based approach to developing a political science research program using scenario analysis. It focuses especially on illuminating the research generation and pedagogical benefits of this technique by describing the use of scenarios in the annual New Era Foreign Policy Conference (NEFPC), which brings together doctoral students of international and comparative affairs who share a demonstrated interest in policy-relevant scholarship.3 In the introductory section, the article outlines the practice of scenario analysis and considers the utility of the technique in political science. We argue that scenario analysis should be viewed as a tool to stimulate problem-based learning for doctoral students and discuss the broader scholarly benefits of using scenarios to help generate research ideas. The second section details the manner in which NEFPC deploys scenario analysis. The third section reflects upon some of the concrete scholarly benefits that have been realized from the scenario format. The fourth section offers insights on the pedagogical potential associated with using scenarios in the classroom across levels of study. A brief conclusion reflects on the importance of developing specific techniques to aid those who wish to generate political science scholarship of relevance to the policy world. What Are Scenarios and Why Use Them in Political Science? Scenario analysis is perceived most commonly as a technique for examining the robustness of strategy. It can immerse decision makers in future states that go beyond conventional extrapolations of current trends, preparing them to take advantage of unexpected opportunities and to protect themselves from adverse exogenous shocks. The global petroleum company Shell, a pioneer of the technique, characterizes scenario analysis as the art of considering “what if” questions about possible future worlds. Scenario analysis is thus typically seen as serving the purposes of corporate planning or as a policy tool to be used in combination with simulations of decision making. Yet scenario analysis is not inherently limited to these uses. This section provides a brief overview of the practice of scenario analysis and the motivations underpinning its uses. It then makes a case for the utility of the technique for political science scholarship and describes how the scenarios deployed at NEFPC were created. The Art of Scenario Analysis We characterize scenario analysis as the art of juxtaposing current trends in unexpected combinations in order to articulate surprising and yet plausible futures, often referred to as “alternative worlds.” Scenarios are thus explicitly not forecasts or projections based on linear extrapolations of contemporary patterns, and they are not hypothesis-based expert predictions. Nor should they be equated with simulations, which are best characterized as functional representations of real institutions or decision-making processes (Asal 2005). Instead, they are depictions of possible future states of the world, offered together with a narrative of the driving causal forces and potential exogenous shocks that could lead to those futures. Good scenarios thus rely on explicit causal propositions that, independent of one another, are plausible—yet, when combined, suggest surprising and sometimes controversial future worlds. For example, few predicted the dramatic fall in oil prices toward the end of 2014. Yet independent driving forces, such as the shale gas revolution in the United States, China’s slowing economic growth, and declining conflict in major Middle Eastern oil producers such as Libya, were all recognized secular trends that—combined with OPEC’s decision not to take concerted action as prices began to decline—came together in an unexpected way. While scenario analysis played a role in war gaming and strategic planning during the Cold War, the real antecedents of the contemporary practice are found in corporate futures studies of the late 1960s and early 1970s (Raskin et al. 2005). Scenario analysis was essentially initiated at Royal Dutch Shell in 1965, with the realization that the usual forecasting techniques and models were not capturing the rapidly changing environment in which the company operated (Wack 1985; Schwartz 1991). In particular, it had become evident that straight-line extrapolations of past global trends were inadequate for anticipating the evolving business environment. Shell-style scenario planning “helped break the habit, ingrained in most corporate planning, of assuming that the future will look much like the present” (Wilkinson and Kupers 2013, 4). Using scenario thinking, Shell anticipated the possibility of two Arab-induced oil shocks in the 1970s and hence was able to position itself for major disruptions in the global petroleum sector. Building on its corporate roots, scenario analysis has become a standard policymaking tool. For example, the Project on Forward Engagement advocates linking systematic foresight, which it defines as the disciplined analysis of alternative futures, to planning and feedback loops to better equip the United States to meet contemporary governance challenges (Fuerth 2011). Another prominent application of scenario thinking is found in the National Intelligence Council’s series of Global Trends reports, issued every four years to aid policymakers in anticipating and planning for future challenges. These reports present a handful of “alternative worlds” approximately twenty years into the future, carefully constructed on the basis of emerging global trends, risks, and opportunities, and intended to stimulate thinking about geopolitical change and its effects.4 As with corporate scenario analysis, the technique can be used in foreign policymaking for long-range general planning purposes as well as for anticipating and coping with more narrow and immediate challenges. An example of the latter is the German Marshall Fund’s EuroFutures project, which uses four scenarios to map the potential consequences of the Euro-area financial crisis (German Marshall Fund 2013). Several features make scenario analysis particularly useful for policymaking.5 Long-term global trends across a number of different realms—social, technological, environmental, economic, and political—combine in often-unexpected ways to produce unforeseen challenges. Yet the ability of decision makers to imagine, let alone prepare for, discontinuities in the policy realm is constrained by their existing mental models and maps. This limitation is exacerbated by well-known cognitive bias tendencies such as groupthink and confirmation bias (Jervis 1976; Janis 1982; Tetlock 2005). The power of scenarios lies in their ability to help individuals break out of conventional modes of thinking and analysis by introducing unusual combinations of trends and deliberate discontinuities in narratives about the future. Imagining alternative future worlds through a structured analytical process enables policymakers to envision and thereby adapt to something altogether different from the known present. Designing Scenarios for Political Science Inquiry The characteristics of scenario analysis that commend its use to policymakers also make it well suited to helping political scientists generate and develop policy-relevant research programs. Scenarios are essentially textured, plausible, and relevant stories that help us imagine how the future political-economic world could be different from the past in a manner that highlights policy challenges and opportunities. For example, terrorist organizations are a known threat that have captured the attention of the policy community, yet our responses to them tend to be linear and reactive. Scenarios that explore how seemingly unrelated vectors of change—the rise of a new peer competitor in the East that diverts strategic attention, volatile commodity prices that empower and disempower various state and nonstate actors in surprising ways, and the destabilizing effects of climate change or infectious disease pandemics—can be useful for illuminating the nature and limits of the terrorist threat in ways that may be missed by a narrower focus on recognized states and groups. By illuminating the potential strategic significance of specific and yet poorly understood opportunities and threats, scenario analysis helps to identify crucial gaps in our collective understanding of global politicaleconomic trends and dynamics. The notion of “exogeneity”—so prevalent in social science scholarship—applies to models of reality, not to reality itself. Very simply, scenario analysis can throw into sharp relief often-overlooked yet pressing questions in international affairs that demand focused investigation. Scenarios thus offer, in principle, an innovative tool for developing a political science research agenda. In practice, achieving this objective requires careful tailoring of the approach. The specific scenario analysis technique we outline below was designed and refined to provide a structured experiential process for generating problem-based research questions with contemporary international policy relevance.6 The first step in the process of creating the scenario set described here was to identify important causal forces in contemporary global affairs. Consensus was not the goal; on the contrary, some of these causal statements represented competing theories about global change (e.g., a resurgence of the nation-state vs. border-evading globalizing forces). A major principle underpinning the transformation of these causal drivers into possible future worlds was to “simplify, then exaggerate” them, before fleshing out the emerging story with more details.7 Thus, the contours of the future world were drawn first in the scenario, with details about the possible pathways to that point filled in second. It is entirely possible, indeed probable, that some of the causal claims that turned into parts of scenarios were exaggerated so much as to be implausible, and that an unavoidable degree of bias or our own form of groupthink went into construction of the scenarios. One of the great strengths of scenario analysis, however, is that the scenario discussions themselves, as described below, lay bare these especially implausible claims and systematic biases.8 An explicit methodological approach underlies the written scenarios themselves as well as the analytical process around them—that of case-centered, structured, focused comparison, intended especially to shed light on new causal mechanisms (George and Bennett 2005). The use of scenarios is similar to counterfactual analysis in that it modifies certain variables in a given situation in order to analyze the resulting effects (Fearon 1991). Whereas counterfactuals are traditionally retrospective in nature and explore events that did not actually occur in the context of known history, our scenarios are deliberately forward-looking and are designed to explore potential futures that could unfold. As such, counterfactual analysis is especially well suited to identifying how individual events might expand or shift the “funnel of choices” available to political actors and thus lead to different historical outcomes (Nye 2005, 68–69), while forward-looking scenario analysis can better illuminate surprising intersections and sociopolitical dynamics without the perceptual constraints imposed by fine-grained historical knowledge. We see scenarios as a complementary resource for exploring these dynamics in international affairs, rather than as a replacement for counterfactual analysis, historical case studies, or other methodological tools. In the scenario process developed for NEFPC, three distinct scenarios are employed, acting as cases for analytical comparison. Each scenario, as detailed below, includes a set of explicit “driving forces” which represent hypotheses about causal mechanisms worth investigating in evolving international affairs. The scenario analysis process itself employs templates (discussed further below) to serve as a graphical representation of a structured, focused investigation and thereby as the research tool for conducting case-centered comparative analysis (George and Bennett 2005). In essence, these templates articulate key observable implications within the alternative worlds of the scenarios and serve as a framework for capturing the data that emerge (King, Keohane, and Verba 1994). Finally, this structured, focused comparison serves as the basis for the cross-case session emerging from the scenario analysis that leads directly to the articulation of new research agendas. The scenario process described here has thus been carefully designed to offer some guidance to policy-oriented graduate students who are otherwise left to the relatively unstructured norms by which political science dissertation ideas are typically developed. The initial articulation of a dissertation project is generally an idiosyncratic and personal undertaking (Useem 1997; Rothman 2008), whereby students might choose topics based on their coursework, their own previous policy exposure, or the topics studied by their advisors. Research agendas are thus typically developed by looking for “puzzles” in existing research programs (Kuhn 1996). Doctoral students also, understandably, often choose topics that are particularly amenable to garnering research funding. Conventional grant programs typically base their funding priorities on extrapolations from what has been important in the recent past—leading to, for example, the prevalence of Japan and Soviet studies in the mid-1980s or terrorism studies in the 2000s—in the absence of any alternative method for identifying questions of likely future significance. The scenario approach to generating research ideas is grounded in the belief that these traditional approaches can be complemented by identifying questions likely to be of great empirical importance in the real world, even if these do not appear as puzzles in existing research programs or as clear extrapolations from past events. The scenarios analyzed at NEFPC envision alternative worlds that could develop in the medium (five to seven year) term and are designed to tease out issues scholars and policymakers may encounter in the relatively near future so that they can begin thinking critically about them now. This timeframe offers a period distant enough from the present as to avoid falling into current events analysis, but not so far into the future as to seem like science fiction. In imagining the worlds in which these scenarios might come to pass, participants learn strategies for avoiding failures of creativity and for overturning the assumptions that prevent scholars and analysts from anticipating and understanding the pivotal junctures that arise in international affairs.

UV

#### 1] 1AR theory is legit – anything else means infinite abuse – drop the debater – 1AR is too short to make up for the time trade-off – no RVIs – 6 min 2NR means they can brute force me every time – competing interps – otherwise the 2NR could drown the aff in arguments while playing defense

#### 2] Reasonability on 1NC shells – the 1AR is too short to line by line every argument, make a counter interpretation, and go for substance – key to check arbitrary interps.

#### 3] Affirming is harder – a] We don’t know what the 1NC is but they know what the aff is, b] 7-6-6-3 time skew, c] NC reactivity advantage, d] they can uplayer and restart the round to generate offense that matters, e] they have access to more positions due to generic backfiles and bidirectional shells, f] preempts: no judge psych advantage since they have a 6 min 2nr to collapse and preempt and no infinite prep due to ssd and topic release dates, g] Negatives still will several debates which means you should err against their arguments. They have more time to develop this debate so even the affirming vs negating harder debate should be viewed through the lens of flexibility

#### 4] Permissibility and presumption affirm –

**A] Paralysis- otherwise we would not be able to justify morally neutral actions like drinking water since there isn’t a prohibition and we would needlessly have to prove an obligation.**

**B] Trivialism- statements are true until proven false, if I told you my name you’d believe me.**

#### C] Affirming is harder – that was above

#### D] Negation Theory- Negating requires a complete absence of an existing obligation

Negate [is to]: to deny the existence of

That’s Dictionary.com- “Negate” https://www.dictionary.com/browse/negate.

#### E] The Law of Excluded Middles: if something is not false, it must be true, which means that if something is not prohibited, it must be obligatory, and permissibility is the same as obligatory.