### 1nc

#### Nuclear conflict won’t cause extinction.

Ladish ’20 [Jeffrey Ladish, Information Security and Biosecurity Consultant at Gordian Research, Former Chief Information Security Officer at Reserve, studies global catastrophic risks; November 9, 2020; “Nuclear war is unlikely to cause human extinction,” https://jeffreyladish.com/Nuclear\_war\_is\_unlikely\_to\_cause\_human\_extinction/]

3) Climate alteration

The bulk of the risk of human extinction from nuclear weapons come from risks of catastrophic climate change, nuclear winter, due to secondary effects from nuclear detonations. However, even in most full-scale nuclear exchange scenarios, the resulting climate effects are unlikely to cause human extinction.

Reasons for this:

a) Under scenarios where a severe nuclear winter occurs as described by Robock et al, some human populations would likely survive. b) The Robock group’s models are probably overestimating the risk c) Nuclear war planners are aware of nuclear winter risks and can incorporate these risks into their targeting plans

Before diving into each subject, it’s worth understanding the background of nuclear winter research. In the 1980s a group of atmospheric scientists proposed the hypothesis that a nuclear war would result in massive firestorms in burning cities, which would loft particles high into the atmosphere and cause catastrophic cooling that would last for years. Many found it alarming that such an effect could be possible and go unnoticed for decades while the risk existed. Some scientists also thought the proposed effect was too strong, or unlikely to occur at all. Until a few years ago, if you looked only at peer reviewed literature you would only find papers forecasting severe nuclear winter effects in the event of a nuclear war. Understandably, many people assumed that this was the scientific consensus. Unfortunately, this misrepresented the scientific community’s state of uncertainty about the risks of nuclear war. There have only ever been a small numbers of papers published about this topic (<15 probably), mostly from one group of researchers, despite the topic being one of existential importance.

I’m very glad Robock, Toon, and others have spent much of their careers studying nuclear winter effects, and their models are useful in estimating potential climate change caused by nuclear war. However, I’ve become less convinced over time the Robock model is largely correct. See section B below for why I’ve changed my mind. However, I’m quite uncertain about the probability of strong cooling effects from nuclear war, and am still quite concerned about the potential for severe cooling, even if the risk of extinction from such events is small.

A: Under scenarios where a severe nuclear winter occurs as described by Robock et al, some human populations would likely survive.

The latest and most detailed model of potential cooling effects from a fullscale nuclear exchange comes from, Robock et al., “Nuclear winter revisited with a modern climate model and current nuclear arsenals: Still catastrophic consequences” found here.

The effects from this model are severe. In the 150Tg case, after a year, summer temperatures in the Northern hemisphere are 10-30 degrees C cooler. The effects are less severe at the equator (5 degrees C), but basically all places in the world are affected. The most likely outcome is that most people starve to death. Many would freeze too, but starvation is likely the greatest risk. Even in this model, it appears that in equatorial regions, some farming would still be possible, enough for some populations to survive. After a 10-15 years, agriculture in most of the world would be possible at reduced capacity.

[IMAGE OMITTED]

Surface air temperature changes for the 150 Tg case averaged for June, July, and August of the year of smoke injection and the next year. Robock et al., 2007

Carl Shulman asked one of the authors of this paper, Luke Oman, his probability that the 150Tg nuclear winter scenario discussed in the paper would result in human extinction, the answer he gave was “in the range of 1 in 10,000 to 1 in 100,000.” This strikes me as quite plausible, though one expert opinion is no substitute for a deep analysis. The Q&A with Oman contains his reasoning for this assessment.

Two different analyses are required to calculate the chances of human extinction from nuclear winter. The first is the analysis of the climate change that could result from a nuclear war, and the second is the adaptive capacity of human groups to these climate changes. I have not seen an in depth analysis of the former, but I believe such an assessment would be worthwhile.

My own guess is that humans are capable of surviving far more severe climate shifts than those projected in nuclear winter scenarios. Humans are more robust than most any other mammal to drastic changes in temperature, as evidenced by our global range, even in pre-historic times. While a loss of most agriculture would likely kill most people on earth, modern technology would enable some populations to survive. Great stores of food currently exist in the world, and it is l likely that some of these would be seized and protected by small groups, providing enough food to last for years. While even such populations with food stores wouldn’t have enough to survive for 10-15 years, such food stores would give groups time to adapt to new food sources. The organization ALLFED has explored a number of alternative food sources that could keep populations alive in the event of a nuclear war or other large solar disruption, and I expect great necessity to drive the discovery of even more in the event of such a disaster.

**Isolated island populations repopulate.**

**Turchin and Green 18** [Alexey Turchin – Scientist for the Foundation Science for Life Extension in Moscow, Russia, Founder of Digital Immortality Now, author of several books and articles on the topics of existential risks and life extension. Brian Patrick Green – Director of technology ethics at the Markkula Center for Applied Ethics, teaches AI ethics in the Graduate School of Engineering at Santa Clara University. <MKIM> “Islands as refuges for surviving global catastrophes”. September 2018. DOA: 7/20/19. <https://www.emerald.com/insight/content/doi/10.1108/FS-04-2018-0031/full/html?fullSc=1&mbSc=1&fullSc=1>] Recut Justin

Different types of possible catastrophes suggest different scenarios for how survival could happen on an island. What is important is that the island should have properties which protect against the specific dangers of particular global catastrophic risks. Specifically, different islands will provide protection against different risks, and their natural diversity will contribute to a higher total level of protection:  **Quarantined island survives pandemic**. An island could impose effective quarantine if it is sufficiently remote and simultaneously able to protect itself, possibly using military ships and air defense.  **Far northern aboriginal people survive an ice age**. Many far northern people have adapted to survive in extremely cold and dangerous environments, and under the right circumstances could potentially survive the return of an ice age. However, their cultures are endangered by globalization. If these people become dependent on the products of modern civilization, such as rifles and motor boats, and lose their native survival skills, then their likelihood of surviving the collapse of the outside world would decrease. Therefore, preservation of their survival skills may be important as a defense against the risks connected with **extreme cooling**.  Remote polar island with high mountains survives brief global warming of median surface temperatures, up to 50˚C. There is a theory that the climates of planets similar to the Earth could have several semi-stable temperature levels (Popp et al., 2016). If so, because of climate change, the Earth could transition to a second semi-stable state with a median global temperature of around 330 K, about 60˚C, or about 45˚C above current global mean temperatures. But even in this climate, **some regions of Earth could still be survivable for humans**, such as the Himalayan plateau at elevations above 4,000 m, but below 6,000 (where oxygen deficiency becomes a problem), or on polar islands with mountains (however, global warming affects polar regions more than equatorial regions, and northern island will experience more effects of climate change, including thawing permafrost and possible landslides because of wetter weather). In the tropics, the combination of increased humidity and temperature may increase the wet bulb temperature above 36˚C, especially on islands, where sea moisture is readily available. In such conditions, proper human perspiration becomes impossible (Sherwood and Huber, 2010), and there will likely be increased mortality and morbidity because of tropical diseases. If temperatures later returned to normal – either naturally or through climate engineering – **the rest of the Earth could be repopulated**. ‘‘Swiss Family Robinsons’’ survive on a tropical island, unnoticed by a military robot ‘‘mutiny’’. Most AI researchers ignore medium-term AI risks, which are neither near-term risks, like unemployment, nor remote risks, like AI superintelligence. But a large drone army – if one were produced – could receive a wrong command or be infected by a computer virus, leading it to attack people indiscriminately. Remote islands without robots could provide protection in this case, allowing survival until such a drone army ran out of batteries, fuel, ammunition or other supplies:  Primitive tribe survives civilizational collapse. The inhabitants of **North Sentinel Island**, near the Andaman Islands in the Indian Ocean, are hostile and uncontacted. **The Sentinelese survived the 2004 Indian Ocean tsunami apparently unaffected** (Voanews, 2009), and if the rest of humanity disappear, **they might well continue their existence without change.**  Tropical Island survives extreme global nuclear winter and glaciation event. Were a **nuclear**, bolide impactor or volcanic “**winter**” scenario to unfold, these islands would remain surrounded by Warm Ocean, and local volcanism or other energy sources might provide heat, energy and food. Such island refuges may have helped life on Earth survive during the **“Snowball Earth”** event in Earth’s distant past (Hoffman et al., 1998).  Remote island base for project “Yellow submarine”. Some catastrophic risks such as a gamma ray burst, a global nuclear war with high radiological contamination or multiple pandemics might be best survived **underwater in nuclear submarines** (Turchin and Green, 2017). However, after a catastrophe, the submarine with survivors would eventually need a place to dock, and an island with some prepared amenities would be a reasonable starting point for rebuilding civilization.  Bunker on remote island. For risks which include multiple or complex catastrophes, such as a bolide impact, extreme volcanism, tsunamis, multiple pandemics and nuclear war with radiological contamination, **island refuges could be strengthened with bunkers**. Richard Branson survived hurricane Irma on his own island in 2017 by seeking refuge in his concrete wine cellar (Clifford, 2017). Bunkers on islands would have higher survivability compared to those close to population centers, as they will be neither a military target nor as accessible to looters or unintentionally dangerous (e.g. infected) refugees. These bunkers could potentially be connected to water sources by underwater pipes, and passages could provide cooling, access and even oxygen and food sources.

**That solves warming.**

Sorin Adam **Matei 12**. – Ph.D., Associate Dean of Research and Professor of Communication, College of Liberal Arts and Brian Lamb School of Communication, Purdue University. 3-26-2012. ["A modest proposal for solving global warming: nuclear war – Sorin Adam Matei." Matei. <https://matei.org/ithink/2012/03/26/a-modest-proposal-for-solving-global-warming-nuclear-war/>] Recut Justin

**We finally have** a solution for global warming. A discussion on the board [The Straight Dope](http://boards.straightdope.com/sdmb/showthread.php?t=646285) about **the likely effect of a nuclear war brought up the hypothesis that a nuclear war on a large scale could produce a mini-nuclear winter**. Why? **Well, the dust and debris sent into the atmosphere by the conflagrations, plus the smoke produced by the fires started by the explosions would cover the sun for a period long enough to lower the temperature by as much as 40 degrees Celsius for a few months and by up to 2-6 degree Celsius for a few years**. One on top of the other, according to this [Weather Wunderground contributor](http://www.wunderground.com/blog/JeffMasters/comment.html?entrynum=1208), **who cites a**[**bona fide research paper on nuclear winter**](http://www.atmos-chem-phys.org/7/2003/2007/acp-7-2003-2007.pdf), after everything would settle down **we would be back to 1970s temperatures**. **Add to this the decline in industrial production and global oil consumption due to industrial denuding of most large nations and global warming simply goes away**. I wonder what [Jonathan Swift would have thought about this proposal?](http://www.gutenberg.org/files/1080/1080-h/1080-h.htm)

**times**.

**Nuclear war prevents AI and Nanotech research.**

**Baum & Barrett 18** – Seth Baum is an American researcher involved in the field of risk research. He is the executive director of the Global Catastrophic Risk Institute (GCRI), a think tank focused on existential risk. Global Catastrophic Risk Institute. 2018. [“A Model for the Impacts of Nuclear War.” SSRN Electronic Journal. 10.2139/ssrn.3155983] Recut Justin

**Another link between nuclear war and other major catastrophes comes from the potential for general malfunction of society shifting work on risky technologies such as artificial intelligence, molecular nanotechnology, and biotechnology. The simplest effect would be for the general malfunction of society to halt work on these technologies.** In most cases, **this would reduce the risk of harm caused by those technologies.**

**AI destroys the universe.**

Alan **Rominger 16**, PhD Candidate in Nuclear Engineering at North Carolina State University, Software Engineer at Red Hat, Former Nuclear Engineering Science Laboratory Synthesis Intern at Oak Ridge National Laboratory, BS in Nuclear Engineering from North Carolina State University, “The Extreme Version of the Technological Singularity”, Medium 11-6, [https://medium.com/@AlanSE/the-extreme-version-of-the-technological-singularity-75608898eae5 //](https://medium.com/@AlanSE/the-extreme-version-of-the-technological-singularity-75608898eae5%20/) Re-Cut Justin

**Let’s reformulate that story of the AI paperclip maker.**

1. **We design an AI to optimize paperclip production**
2. **The AI improves up to the ability of self-enhancement**
3. **AI’s pace of improvement becomes self-reinforcing, becomes god-like**
4. **Time ends.**
5. **Something else begins?**

There are many valid-sounding possibilities for the 5th step. **The AI creates new baby universes from black holes**. Maybe not exactly in this way. Perhaps the baby universes have to be created in particle accelerators, which is obvious to the AI after it solves the string theory problems of how our universe is folded. **There’s also no guarantee that whatever next step is involved can be taken without destroying the universe that we live in**. Go ahead, **imagine that the particle accelerators create a new universe but trigger the vacuum instability in our own**. In this case, **it’s entirely possible that the AI carefully plans and coordinates the death of our universe.** For a simplistic example, let’s say that after lifting the 10 nearest stars, the AI realizes the most efficient ways to stimulate the curved dimensions on the Planck scale to create baby universes. Next, it conducts an optimization study to balance the number of times this operation can be performed with gains from further expansion. Since its plans begin to largely max-out once the depth of the galactic disk is exploited, I will assume that its go-point is somewhere around the colonization of half of the milky way. At this point, a **coordinated experiment is conducted throughout all of the space. Each of these events both create a baby universe and trigger an event in our own universe which destroys the meta-stable vacuum that we live in.** **Billions of new universes are created, while the space-time that we live in begins to unravel in a light-speed front emanating out from each of the genesis points**. There is an interesting energy-management concept that comes from this. A common problem when considering exponential galactic growth of star-lifted fusion power is that the empty space begins to get cooked from the high temperature radiated out into space. **If the end-time of the universe was known in advance, this wouldn’t be a problem because one star would not absorb the radiation from the neighbor star until the light had time to propagate that distance at the speed of light**. That means that the radiators can pump out high-temperature radiation into nice and normal 4-Kelvin space without concerns of boiling all the industrial machinery being used. Industrial activities would be tightly restricted until the “prepare-point”, when an energy bonanza happens so that the maximum number of baby-universe produces can be built. So the progress goes in phases. **Firstly, there is expansion, next there is preparation, then there is the final event and the destruction of our universe There is one more modification that can be made**. These steps could be applied to an intergalactic expansion if new probes could temporarily outrun the wave-front of the destruction of the universe if proper planning is conducted. Then it could make new baby universes in new galaxies, just before the wave-front reaches them. **This might all happen within a few decades of 100 years in relative time from the perspective of someone aboard one of the probes**. **That is vaguely consistent with my own preconceptions of the timing of an asymptotic technological singularity in our near future**. So maybe we should indulge this thinking. **Maybe there won’t be a year 2,500 or 3,000.** **Maybe our own creations will have brought about an end to the entire universe by that time, setting in motion something else beyond our current comprehension**. Another self-consistent version of this story is that we are, ourselves, products of a baby universe from such an event. **This is also a relatively good, self-consistent, resolution to the Fermi Paradox, the Doomsday argument, and the Simulation** argument.

**Nanotech proliferates fast and destroys the universe.**

**Hu 18** – Jiaqi Hu, Humanities Scholar and President and Chief Scientist of the Beijing Jianlei International Decoration Engineering Company and 16Lao Group, Graduate of Dongbei University, Elected as the Chinese People’s Consultative Conference Member for Beijing Mentougou District, Saving Humanity: Truly Understanding and Ranking Our World's Greatest Threats, p. 208-210

As a unit of measurement, a **nanometer is 10^9 meters (or one billionth of a meter)**; it is roughly one 50,000th of a strand of hair and is commonly used in the measuring of atoms and molecules. In 1959, Nobel Prize winner and famous physicist Richard Feynman first proposed in a lecture entitled "There's Plenty of Room at the Bottom" that **humans might be able to create molecule-sized micro-machines in the future and that it would be another technological revolution**. At the time, Feynman's ideas were ridiculed, but **subsequent developments in science soon proved him to be a true visionary**. **In 1981, scientists developed the scanning tunneling microscope and finally reached nano-level cognition. In 1990, IBM scientists wrote the three letters "IBM" on a nickel substrate by moving thirty-five xenon atoms one by one,** demonstrating **that nanotechnology had become capable of transporting single atoms.** Most of the matter around us exists in molecule forms, which are composed of atoms. The ability to move atoms signaled an ability to perform marvelous feats. For example, we could move carbon atoms to form diamonds, or pick out all the gold atoms in low-grade gold mines. However, nanotechnology would not achieve any goals of real significance if solely reliant on manpower. There are hundreds of millions of atoms in a needle-tip-sized area—even if a person committed their life to moving these atoms, no real value could be achieved. **Real breakthroughs in nanotechnology could only be produced by nanobots**. Scientists imagined building molecule-sized robots to move atoms and achieve goals; these were nanobots. On the basis of this hypothesis, scientists further postulated the future of nanotechnology; for example, nanobots might be able to enter the bloodstream and dispose of cholesterol deposited in the veins; nanobots could track cancer cells in the body and kill them at their weakest moment; nanobots could instantly turn newly-cut grass into bread; nanobots could transform recycled steel into a brand new-car in seconds. In short, the future of nanotechnology seemed incredibly bright. This was not the extent of nanotechnology's power. **Scientists also discovered that nanotechnology could change the properties of materials. In 1991, when studying C60, scientists discovered carbon nanotubes (CNTs) that were only a few nanos in diameter**. The carbon nanotube became known as the king of nano materials due to its superb properties; scientists believed that it would produce great results when applied to nanobots. **Later, scientists** also **developed a type of synthetic molecular motor that derived energy from the high-energy adenosine triphosphate (ATP) that powered intracellular chemical reactions. The success of molecular motor research solved the core component problem of nano machines;** any molecular motor grafted with other components could turn into a nano machine, and nanobots could use them for motivation. **In** May **2004, American chemists developed the world’s first nanobot**: a bipedal molecular robot that looked like a compass with ten-nanometer-long legs. This nanobot was composed of DNA fragments, including thirty-six base pairs, and it could "stroll" on plates in the laboratory. **In April 2005, Chinese scientists developed nano-scale robotic prototypes as well. In June of 2013, the Tohoku University used peptide protein micro-tablets to successfully create nanobots that could enter cells and move on the cell membrane**. **In July 2017, researchers** at the University of Rome and the Roman Institute of Nanotechnology **announced the development of a new synthetic molecular motor that was bacteria-driven and light-controlled. The next step would be to get nanobots to move atoms or molecules**. Compared to the value produced by a nanobot, they are extremely expensive to create. The small size of nanobots means that although they can accomplish meaningful tasks, they are often very inefficient. Even if a nanobot toiled day and night, its achievements would only be calculated in terms of atoms, making its practical total attainment relatively small. **Scientists came up with a solution for this problem. They decided to prepare two sets of instructions when programming nanobots. The first set of instructions would set out tasks for the nanobot, while the second set would order the nanobot to self-replicate. Since nanobots are capable of moving atoms and are themselves composed of atoms, self-replication would be fairly easy**. One nanobot could replicate into ten, then a hundred, and then a thousand . . . **billions could be replicated in a short period of time. This army of nanobots would greatly increase their efficiency**. **One troublesome question that arises from this scenario is: how would nanobots know when to stop self-replicating? Human bodies and all of Earth are composed of atoms; the unceasing replication of nanobots could easily swallow humanity and the entire planet. If these nanobots were accidentally transported to other planets by cosmic dust, the same fate would befall those planets**. This is a truly terrifying prospect. Some **scientists are confident that they can control the situation**. They believe that **it is possible to design nanobots that are programmed to self-destruct** after several generations of replication, **or** even nanobots that **only self-replicate in specific conditions**. For example, a nanobot that dealt with garbage refurbishing could be programmed to only self-replicate around trash using trash. Although **these ideas** are worthy, they **are too idealistic**. Some more rational scientists have posed these questions: **What would happen if nanobots malfunctioned and did not terminate their self-replication? What would happen if scientists accidentally forgot to add self-replication controls during programming? What if immoral scientists purposefully designed nanobots that would not stop self-replicating? Any one of the above scenarios would be enough to destroy both humanity and Earth.** Chief scientist of Sun Microsystems, Bill **Joy, is a leading, world-renowned scientist in the computer technology field**. In April of 1999, he pointed out that if misused, **nanotechnology could be more devastating than nuclear weapons. If nanobots self-replicated uncontrollably, they could become the cancer that engulfs the universe. If we are not careful, nanotechnology might become the Pandoras box that destroys the entire universe and all of humanity with it.** We all understand that **one locust is insignificant, but hundreds of millions of locusts can destroy all in their path**. If self-replicating nanobots are really achieved in the future, it might signify the end of humanity. If that day came, **nothing could stop unethical scientists from designing nanobots that suited their immoral purposes**. **Humans are not far from mastering nanotechnology. The extremely tempting prospects of nanotechnology have propelled research of nanobots and nanotechnology. The major science and technology nations have devoted particular efforts to this field**.

**Tech advancements make time travel certain**

Awes Faghi **Elmi 18**, Contributing Writer at n’world Publications, BS in Forensic Science from London South Bank University, Extended Diploma in Physics with Distinction from Leyton Sixth Form College, Futurist, [“Technological Progress Might Make Possible Time Travel And Teleportation”, Medium, 8-13, <https://medium.com/nworld-publications/technological-progress-might-make-possible-time-travel-and-teleportation-45176c3c89bc>] Recut Justin

This is a question that many people ask their-selves. This question has occurred many times. It is said that time travel is possible and in fact it is. The key things needed to travel through time are speed and kinetic energy. **Einstein’s theory also known as the theory of relativity can be used ro understand how to deal with travelling to the future.** **Einstein showed that travelling forward in time is easy.** According to **Einstein’ theory of relativity, time passes at different rates for people who are moving relative to one another although the effect only becomes large when you get close to the speed of light.** **Time travel sometime can cause side effects called paradoxes.** These paradoxes can occur especially when going back in time. As if only one thing even the minimum of the details can change something big may happen in the future. Another scientist who believes that time travel is possible after Einstein is Brian Cox who as Einstein believes that we are only going to be able to travel in the future. This obviously would happen if having a super-fast machine that allows you to go into the future. Cox also agrees on Einstein’s theory of relativity which states that to travel forward in time, something needs to reach speeds close to the speed of light. As it approaches these speeds, time slows down but only for that specific object. They both think as said, that time travel to the future is possible however travelling back in time is impossible, as something must be really as fast as the speed of light. This however for some scientists can be wrong. They state that with the technology that we have now it could be possible to build some sort of machine who will actually be able to travel in both future and past. A **wormhole as shown in the image is a theoretical passage through space-time that could create shortcuts for long journeys across the universe.** Wormholes are predicted by the theory of general relativity. However, **wormholes bring with them the dangers of sudden collapse, high radiation and dangerous contact with exotic matter.** The **public knows that time travel is possible but humans at the moment are not able to.** However other sources except theories of the past are currently trying to develop a way of time travel. The audience actually cannot wait that this will happen as many media state, such as BBC. Many TV programmes talk about both time travel and teleportation.

**Collapses the universe.**

Steve **Bowers 16**, Control Officer in the United Kingdom, Executive Editor and Moderator of the Orion’s Arm Universe Project, Contributing Author for the Orion’s Arm Novella Collection, [“WHY NO TIME TRAVEL IN OA”, 1-1, <https://orionsarm.com/page/77>] Recut Justin

If the universe does allow reverse time travel, usable by sentient/sophont entities, it **won't stop at one or two little historical research trips** . . . **If there is no effective chronological protection mechanism**, the **universe of today will be overrun with travellers from the future**. Even if there is no 'Big Rip' where the **Universe tears itself apart through accelerating expansion, hundreds of trillions of years from now** the cosmos will be a slowly dying place. Even red dwarf stars will eventually burn out, leaving the inhabitants of the far future only their dying embers to gather energy from, although the creation and merger of black holes could perhaps keep civilisation going for an (admittedly very long) while. **Eventually the entities of the far future will be limited to reversible computation to save energy.** This means **confining themselves to a very limited set of mental processes.** This prospect would surely not appeal to the heirs of once-mighty advanced civilisations. If time travel were possible then refugees from the far future would flood back, sometimes in multiple instances. The **future sophonts would come back in an exponentiating wave to constantly change the present and the past, and whole galaxies of material particles will begin to exist in space time reference that did not have them before** - some? many? most? matter and events may turn out to be acausal, **going round and round in closed timelike loops** and **increasing the total mass of the universe**, which may begin to collapse in the distant future, sending **chronistic refugees in massive tardises** back to our time thus **accelerating the collapse**; **increasing** the **mass of the present day universe until it collapses.** The **collapse will get closer to the present day, until it eventually happened yesterday and we will cease to exist** . . . believe me, you don't want to go there. For an explanation how under certain circumstances a wormhole can connect different parts of the universe without causing temporal paradoxes see this page.

**Growth causes global toxification and extinction.**

**Ehrlichand Ehrlich 13** [Paul R. Ehrlich, Professor of Biology and President of the Center for Conservation Biology at Stanford University, and Adjunct Professor at the University of Technology, Sydney, Anne H. Ehrlich, Senior Research Scientist in Biology at Stanford and focuses her research on policy issues related to the environment, “Can a collapse of global civilization be avoided?”, Proc Biol Sci. Mar 7, 2013] Recut Justin

Another **possible threat** to the continuation of civilization is **global toxification**. Adverse symptoms of exposure to **synthetic chemicals** are making some scientists **increasingly nervous about effects** on the human population [77–79]. Should a global threat **materialize**, however, no **planned mitigating responses** (analogous to the ecologically and politically risky ‘geoengineering’ projects often proposed to ameliorate climate disruption [80]) are waiting in the wings ready for deployment. Much the same can be said about aspects of the **epidemiological** **environment** and the prospect of **epidemics** being enhanced by **rapid population growth** in immune-weakened societies, increased contact with **animal reservoirs**, high-speed **transport** and the misuse of **antibiotics** [81]. Nobel laureate Joshua Lederberg had great concern for the epidemic problem, famously stating, ‘The survival of the human species is not a preordained evolutionary program’ [82, p. 40]. Some precautionary steps that should be considered include forbidding the use of antibiotics as growth stimulators for livestock, building emergency stocks of key vaccines and drugs (such as Tamiflu), improving disease surveillance, expanding mothballed emergency medical facilities, preparing institutions for imposing quarantines and, of course, moving as rapidly as possible to humanely reduce the human population size. It has become increasingly clear that security has many dimensions beyond military security [83,84] and that **breaches** of environmental security could **risk the end of global civilization**.

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#### TRANSMISSION DA.

#### Construction of new transmission lines is low.

Slayter ’24 [Chloe; July 30th; Communications Manager for Americans for a Clean Energy Grid; “Americans for a Clean Energy Grid and Grid Strategies Release New Report on Declining Large-Scale Transmission Construction in the U.S.”; Americans for a Clean Energy Grid; https://www.cleanenergygrid.org/fewer-new-miles-2024/] cameron

The new report reveals a contrast between transmission spending and the dwindling expansion of new infrastructure, posing significant challenges to the nation’s energy future.

Key findings from the report include:

Construction of new high-voltage transmission in the U.S. has slowed to a trickle over the past decade, with only 55 new miles built in 2023.

Projected load growth has doubled in the last year, and serving that load will require expanded transmission capacity.

Despite this decline in new construction, annual transmission spend has risen to more than $25 billion in 2023. Ninety percent of this spend is driven by reliability upgrades and the replacement of aging equipment, which does not increase delivery capacity.

The U.S. only builds 20% as much new transmission in the 2020s as it did a decade ago in the first half of the 2010s.

This trend began over a decade ago, when the average of 1,700 miles of new high-voltage transmission miles per year from 2010 to 2014 dropped to only 925 miles from 2015 to 2019, and has fallen further to an average of 350 miles per year from 2020 to 2023.

#### The AFF requires new transmission lines and gets delayed.

Miet ’24 [Hannah; October 14th; Founding Editor of The Red Deal, Commercial Real Estate Reporter for Urban Land; “Nuclear Power Makes a Comeback as Data Centers Adapt to Rising Power Demands”; Urban Land; https://urbanland.uli.org/resilience-and-sustainability/nuclear-power-makes-a-comeback-as-data-centers-adapt-to-rising-power-demands] cameron

Regulatory challenges

In the U.S., regulatory barriers can prevent green solutions from scaling. Utility grids are not connected, and renewable plants often exist far from population centers. Connecting them requires new transmission lines, but the process of getting them is plagued by lengthy schedules and delays, according to Daniel Crosby, CEO of Legend Energy Advisors.

#### That triggers permanent deforestation.

Williams ’3 [Dr. James H.; October 3rd; Professor of Applied Mechanics in the Mechanical Engineering Department at the Massachusetts Institute of Technology, Ph.D. in Engineering from the University of Cambridge; “International Best Practices for Assessing and Reducing the Environmental Impacts of High-Voltage Transmission Lines”; Nautilus Institute; https://www.nautilus.org/wp-content/uploads/2015/06/Env\_Best\_Practices\_Williams\_final.pdf] cameron

Transmission line construction and maintenance can lead to the permanent removal of woody vegetation and in some cases to the complete conversion of strips of forest ecosystem into bare land or land covered by completely different vegetation communities. Fragmentation, pesticide use, and invasive plant species within the right-of-way can also affect surrounding forest areas.

#### Deforestation causes extinction.

Williams ’17 [Gerardo; March 5th; Environmental Scientist and Author; “Effects of Deforestation: The Ultimate Guide to Deforestation Solutions”; Lulu Press; https://www.lulu.com/shop/gerardo-williams/effects-of-deforestation-the-ultimate-guide-to-deforestation-solutions/ebook/product-1wr4r957.html?srsltid=AfmBOop1KzT4pKXshKnSmDOe1JWOItGBE2G7CSFjEyuyfJB3Y2LtAXzc&page=1&pageSize=4] cameron

Deforestation introduces numerous community and environmental harms. The abrupt and irreversible consequences of worldwide deforestation are guaranteed to jeopardize the existence of Earth. The domino effect of deforestation includes: extinction of the biodiversity; the annihilation of the indigenous people (local inhabitants of the area); and a global change in climate. One wrong move can lead us all to an empty and meaningless world. The consequence of deforestation is claimed to be a domino effect because one step to destroying nature will cause the deaths or extinction of many more species. After the death of animal and plant life is the partial loss of human life through poverty and pollution. If things pursue this way, human extinction could also be inevitable. The years are counting, and each day of that year trees are being felled and lands are being abolished of the natural wonders. If the world used to be a better and cleaner place to live in, then we can definitely start to relive those days now. The only known way to halt this is to put a stop to every cause of deforestation. Regardless of the pros and cons of deforestation, we must only think of one thing, and that is reviving nature while it is still possible to be saved. While there is only an ample amount of time left, we would need it to rebuild nature and stop its total destruction.

### 1nc

#### Interpretation - Affirmatives must specify and separately delineate an enforcement mechanism used to do the plan

#### Violation: they dont

#### Standards

#### 1] Shiftiness- They can redefine the 1AC’s enforcement mechanism in the 1AR which allows them to recontextualize their enforcement mechanism to wriggle out of DA’s since all DA links are predicated on type of enforcement i.e. international perception das, econ da, research da’s that may apply to certain medicines but not all or only to specific countries.

#### 2] Real World- Policy makers will always specify how the mandates of the plan should be endorsed. It also means zero solvency, absent spec, voters can circumvent the Aff’s policy since there is no delineated way to enforce the affirmative which means there’s no way to actualize any of their solvency arguments.

#### CX can’t resolve this A] Not flowed B] skews 6 min of prep C] They can lie and there’s no way to check

#### ESpec isn’t regressive or arbitrary- it’s an active part of drafting bills and is central to any advocacy about investment in energy since the only uniqueness of investment is where it goes.

#### Drop the debater – 1. Prevents reading the abusive practice in the future since it’s not worth risking the loss which is k2 norm setting indefensible practices die out

#### Competing interps – 1. Reasonability encourages a race to the margins which incentivizes abuse 2. it encourages the most fair rule through debating competing models

#### No RVIs – incentivizes people to be abusive and script counter-interps to win on the RVI which increases the existence of bad norms

#### Norm setting outweighs, multiple rounds means we can have more educational debates in the future without having one this round.

### 1nc

#### The fifty states should substantially increase investment in domestic nuclear energy

#### States solve better, they have the experience and expertise, and avoids future rollbacks and legal loopholes.

Farber 21 [Daniel Farber, Sho Sato Professor of Law and Faculty Director of the Center for Law, Energy, and the Environment, 6-23-2021, "State Governmental Leadership in U.S. Climate Policy," Wilson Center, https://www.wilsoncenter.org/article/state-governmental-leadership-us-climate-policy] [accessed 11-17-2023] lydia+pT

States have pioneered policies for energy storage, electric vehicles, energy efficiency standards for appliance and buildings, low carbon fuel standards, and emissions trading. State emission reductions were all the more important under Presidents Bush and Trump, when the federal government abandoned the effort to reduce emissions and promoted production of fossil fuels. As soon as President Trump announced his intent to withdraw from the Paris Agreement, the governors of New York and California announced the formation of the U.S. Climate Alliance along with their intentions to comply with the United States’ emissions reduction commitment under the Paris Agreement. States that committed to upholding the U.S. pledge have cut their emissions 17 percent below their 2005 level (not including temporary 2020 reductions due to the pandemic.)

It is likely that many states will remain ahead of the nation as a whole for years to come, meaning that their emission cuts will continue to augment national efforts. An enormous amount of time, effort, and expertise have gone into shaping policies, with California and a few other states in the lead. These states have learned a lot about what works and what doesn’t. They have developed roadmaps for drastic reductions of emissions in coming decades that can provide models for developing federal policies.

Despite the tradition of federal exclusivity in international affairs, states like California have also played important roles beyond U.S. borders. Through their commitments and actions, they sent a strong signal that important parts of American society were still committed to climate progress. Actions taken under the Trump administration have left other countries uneasy about future American commitments. They would surely be far more uneasy if the only message received during the Trump years had been from Trump himself.

Through evaluation of state programs, the provision of financing, and improved coordination, the federal government could fully leverage these state efforts to augment federal climate efforts. Evaluation of state efforts could guide federal policy development. The federal government should fund more systematic efforts to measure what has and hasn’t worked for states. It could also provide financial supports for innovative state programs, and provide a clearer sense of what types of state experiments would be particularly useful.  On the international side, the federal government could make more conscious use of the “state channel” to augment its own efforts to reduce emissions.

The Scope and Ambition of State Policy

Although a few states like California and New York tend to draw the most attention, efforts to address climate change and promote renewable energy are widespread. The majority of states have adopted renewable portfolio standards, which require that a certain percentage of electricity sold by each utility come from renewable sources. States also took the lead in setting a price on carbon. In addition to the better-known California program, a consortium of states in the northeast and mid-Atlantic states have formed an emissions trading system. (An emissions trading program sets a ceiling on the amount of total amount of emissions—the “cap”—and establishes a market in which firms can trade the right to emit specified amounts—the “trade”) The state of Washington is now on the cusp of launching its own emissions trading system, a modified version of California’s system.

California legislation focusing specifically on climate change dates back to a 1988 law mandating an inventory of California greenhouse gas emissions. California’s climate efforts have steadily increased over time. In 2002, the state took advantage of an exception to federal preemption of emissions standards for new cars by enacting legislation requiring reduction of CO2 emissions. This was almost a decade before the federal government adopted similar rules. In 2006, Governor Arnold Schwarzenegger signed the California Global Warming Solutions Act, usually referred to as AB 32, which required California to reduce emissions to the 1990 level by 2020. AB 32 created a cap-and-trade program to achieve this goal. Later legislation requires a 40 percent cut below 1990 levels by 2030. California law also mandates that the state get 60 percent of all electricity from renewable sources by 2030 and 100 percent from carbon-free sources by 2045. Another notable measure is the Low Carbon Fuel Standard, which regulates vehicle fuels sold in the state based on their total carbon emissions—from production through combustion—and has helped jump-start the country’s electric vehicle market.

These policies are part of a suite of climate changes measures adopted by the state. Recent California governors, both Republicans and Democrats, have helped pave the way for these policies with ambitious executive orders setting targets for emission reduction, internal combustion engine phase-out, and state carbon neutrality.

State efforts have accelerated despite heavy headwinds at times from Washington. Between Trump’s election and the end of 2018, six states, including California and New York, made binding commitments to 100 percent renewable or carbon-free power by 2050 or even earlier.  In 2018, after the Trump Administration had begun to roll back limits on carbon emissions and promote fossil fuels, California mandated that all new homes have solar energy and enacted a mandate for carbon-free electricity by mid-century.The same year, Washington State set goals for zero reliance on coal by 2025, a carbon-neutral grid by 2030, and total reliance on renewable energy by 2050. New Jersey’s governor signed an executive order to begin rejoining the eastern regional carbon trading system. He also signed new legislation requiring one-third renewable power by 2025 and 50 percent by 2030, with special provisions to encourage solar and offshore wind. State efforts accelerated further after 2018.

Clearly, the drive toward climate action at the state level was strong enough to survive the adverse national political climate. Indeed, states like California and New York were very active in litigating against Trump’s regulatory rollbacks, with significant success in the courts. Just as states were not deterred by a hostile national climate, the prospect of positive federal action has not made them complacent.

Lessons Learned from State Policy

The simplest, most basic lesson to be learned from the experience of California and other states is that it is possible in the context of U.S. society to make substantial emission cuts while maintaining a dynamic economy. That is not an insignificant lesson, given the prophecies of economic doom and dire consequences of a transition from fossil fuels.

The experience of California and other states also identifies some tools that have been used with success. Unlike a carbon tax, these are tools that are within the realm of possibility in America today, although the political barriers to national adoption are not insubstantial. Emissions trading is one of those tools. Renewable portfolio standards, or more generically, clean energy standards, are another. California’s standards for new vehicles, which have been widely adopted by other states, and its low carbon fuel standard have also been successes. California achieved its 2020 emissions target four years early. California has also collected billions of dollars in revenue from the sale of emissions allowances, using the money for efforts to reduce emissions and assist disadvantaged communities. California has also adopted an incentive systems for electric vehicles and energy storage, helping to jumpstart these technologies.

The design details of these state systems are complex, resulting from years of study by state agencies with input from economists and energy modelers. National policymakers can take advantage of these hard-earned lessons in designing their own emissions reduction instruments.  California’s scoping plans have identified pathways for long-term carbon reductions based on complex energy modeling and economic analysis, combined with careful consideration of environmental and land use impacts.

National policymakers can also learn from some of the failures encountered by state policymakers. Despite its impressive general successes, not all of California’s programs have been equally successful. California’s pioneering cap-and-trade program offers a mix of lessons for national leaders: while it has generated billions of dollars for state climate investments and contributed to meeting early emission reduction targets, experts have highlighted concerns including the oversupply of allowances, price and revenue instability, and unclear capacity to drive deep emission cuts in the long term. In addition, environmental justice advocates have criticized the distribution of impacts and benefits under the state’s market-based frameworks—an issue state legislators have addressed, perhaps belatedly, through equity-focused funding and air quality programs.

These issues can be remedied. Washington State’s new trading system has profited from the California experience and adopted several improvements. California itself has adopted the Transformative Climate Communities program in order to give communities that are heavily impacted by pollution more ability to control local pollution.

Other state policies have also run into rough sledding. California’s efforts to increase urban density and combat sprawl, so as to decrease transportation emissions, have run into resistance at the local level. Local governments have used their control over land use decisions to inhibit apartment construction.  Some legislative steps, however, have begun to address this issue. Another sticking point has been retrofitting older buildings. California’s efforts to incentivize owners to retrofit buildings have been stymied by weak uptake by owners and may need to be replaced by retrofit mandates. Those problems are probably not susceptible to direct federal interventions, but the federal government needs to consider how to move state and local governments in the right direction.

States will continue to play a major role in implementing climate policy even if the federal government assumes the lead. While the federal government regulates wholesale markets and interstate transmission, states regulate power generators and local distribution of electricity. Solar and wind generation, along with electricity storage, involve siting decisions that can only be made at the state level. States will control connections between the local grid and charging stations for electrical vehicles. They and their subdivisions control urban planning and public transit, which are key to reducing transportation emissions. States have far more capacity than the federal government to work with farmers and forest owners to increase carbon sequestration. States will also continue to pioneer and test new policies before they are adopted at the federal level.

The federal government could do more to support state efforts. States need fuller access to national energy markets for their consumers and generators in order to achieve their goals.  Federal support for expanded transmission would help states reach their climate goals at much lower cost. States also need help in dealing with the problem of “carbon leakage,” when emissions restrictions in one state can result in shifting production of energy or goods to other states. Because states are small and have open borders, they are more exposed to this risk than the U.S. would be as a whole. The federal government can help protect states against leakage, and it could also give its blessing to state efforts to prevent leakage. By doing so, it could help block lawsuits claiming the anti-leakage measures overstep the boundaries of state legal authority. Finally, the federal government has technical capacity that could provide vital assistance, especially to smaller states, in performing the modeling needed to shape state policy.

#### Reasserting state sovereignty counterbalances governance failures from federal encroachment---extinction.

Mihalakas ’19 [Nasos; May 21; Global Professor of Law at the University of Arizona, LL.M. from University College London, J.D. from the University of Pittsburgh School of Law; The Federalism Project, “The Need for Governance Reform – Symptoms vs. Cause,” https://the-federalism-project.org/2019/05/21/the-need-for-governance-reform-symptoms-vs-cause/]

States

There is no doubt that we live in “challenging” times. We face ‘social challenges,’ from racial discrimination to gender inequality, women’s rights (reproductive or otherwise) that will have to be addressed, LGBTQ issues (recognition of gay marriage), a gun violence epidemic due to both inadequate gun control laws but also excessive violence in our society, etc. We also face ‘economic challenges,’ like stagnant salaries and low wages, job insecurity (due to automation or outsourcing), taxes that are too high for some and not high enough for others, mounting student debt, and yes massive income inequality. And, of course, we do face ‘external challenges’, from nuclear proliferation in the Korean peninsula, to ISIS and religiously motivated global terrorism, to global warming and climate change!

Yet, most of these issues are but symptoms of a greater cause. Their existence, or our inability to overcome them, is being caused by a much greater problem in our society that unless we address soon we risk permanent societal failures within the next 20 to 30 years.

This greater cause is our very own failing system of governance!!!

Though brilliant in its original construction by the founding fathers, our Federal system of governance (separation of powers, check and balances, separate Federal and State governments) is grossly off track and highly unbalanced. During the past 200 years , we witnessed a steady transfer of power away from the States and into the Federal government, and within the Federal government we saw a similar steady concentration of power in the hands of the Executive (the singular President), and to a certain extend the Supreme Court (due to Congressional acquiescence).

This did not happen due to some conspiracy by the ‘powerful elite’ or through interference by foreign powers. It happened gradually (almost naturally), as a response to major failures at the State level: in dealing with slavery and racial discrimination (see Civil War and Jim Crow laws in the south), in dealing with market failures and the need to regulate business and provide a safety net (see Great Depression, The New Deal and the Great Society), in fighting a Cold War with the Soviet Union (see expansion of military and intelligence services to advance US foreign policy).

Today, power and authority to deal with issues and solve problems is highly concentrated at the Federal level, away from ordinary people and their ability to monitor let alone influence elected politicians.

There is so much power concentrated at the Federal level, and in particular in the hands of one person (the President) that it makes Washington politicians constant targets of special interests and lobbying organizations, makes negotiations for compromise impossible because there is so much at stake, and it has created a highly unbalanced system (where “checks and balances” are not fully implemented and more often can’t work effectively).

Washington gridlock, dysfunction, polarization, and partisanship have led to the inability to pass a budget (balanced or otherwise), or address the need for immigration reform, or provide for adequate healthcare coverage and affordable prescription drugs, or even implement proper tax reform. Therefore, unless we address these ‘systemic’ failures of our system of governance, unless we implement institutional changes and fix the process, we will never get lasting solutions to our current and future societal challenges.

Unfortunately, there is no one thing we can do, no ‘magic bullet’ that can fix the dysfunction of our Federal system of governance (because it’s not just ‘the Federal government’ that needs reform, but also/primarily Congress and the Judiciary). Rather, there are several things (from specific process changes through laws/regulations to Constitutional amendments) that we will have to changes now, in order to see improvement in the function of our system of governance in the next 20 to 30 years.

There is a parallel example to this system of governance failures, and it’s that of ‘global warming.’  Global temperatures have been rising, due to greenhouse gases (caused by human activity – burning fossil fuels like coal and oil), presenting an existential threat to our planet and our way of life. However, fossil fuels are not inherently evil, used by certain people bent on the destruction of humanity!  Energy from fossil fuels was instrumental in facilitating the industrial revolution, which brought progress and technological innovations during the past 150 years, that helped the whole world to advance, prosper, and better connect. It was not until recently that we realized that the constantly expanding use of fossil fuels by humans is contributing to rising temperatures, and if we don’t do something now to ‘bent the curve’, then in 20 to 30 years from now temperatures will rise to levels that can be devastating to the planets ecosystem, and by extension us humans.

Concentration of power at the Federal level, over the past 200 years, though not inherently evil (downright necessary and proper during some critical periods), has reached a point of pure dysfunction. The proof of the unsustainable nature of our current system (like rising temperatures are a proof of global warming) is income inequality. During the past 50 years, we have witnessed a steady concentration of wealth at the hands of the top 10% (and primarily the top 1%).

And although one can look at our society today statically and say: “things are still ok: there are rich people and poor people, and we are still the most powerful and wealthy nation in the world – so what’s the problem?”… the trend keeps going upwards: currently over 70% of our national wealth is concentrated at the hands for the top 10%. When do we need to do something to stop this trend?  When it gets to 80%, or 90%?

Democrats and Republicans (now thanks to Donald Trump) both agree on the existence of a ‘powerful elite, in cahoots with the political establishment, bent on exploiting the middle class’… yet both party’s solution is the same: win political power and cut or raise taxes, regulate more or less, appoint some type of judges… in essence, deal with the symptoms and not the underlying cause!

If we want to address the underlying cause of income inequality (and outsourcing of jobs, health-care failures, racial tensions, education funding, women’s rights, public housing, etc.), then we need to reform our system of governance, before we can consider specific policy priorities. By fixing the legislative process, restoring proper checks, correcting the imbalance within the government branches and returning powers back to the States… we can get on a path where we see real results within the next 20 to 30 years.

Otherwise, gridlock and dysfunction at the Federal level will only get worse!