### T- Framework

#### Interp: The affirmative may only garner offense from the hypothetical implementation of Resolved: The member nations of the World Trade Organization ought to reduce intellectual property protections for medicines.

#### Resolved requires policy action

Louisiana State Legislature (<https://www.legis.la.gov/legis/Glossary.aspx>) Ngong

**Resolution**

**A legislative instrument** that generally is **used for** making declarations, **stating policies**, and making decisions where some other form is not required. A bill includes the constitutionally required enacting clause; a resolution **uses the term "resolved".** Not subject to a time limit for introduction nor to governor's veto. ( Const. Art. III, §17(B) and House Rules 8.11 , 13.1 , 6.8 , and 7.4 and Senate Rules 10.9, 13.5 and 15.1)

#### We’ve inserted a list of the 164 members of the WTO

WTO ND. Members and Observers. https://www.wto.org/english/thewto\_e/whatis\_e/tif\_e/org6\_e.htm

Afghanistan — 29 July 2016 Albania — 8 September 2000 Angola — 23 November 1996 Antigua and Barbuda — 1 January 1995 Argentina — 1 January 1995 Armenia — 5 February 2003 Australia — 1 January 1995 Austria — 1 January 1995 B Bahrain, Kingdom of — 1 January 1995 Bangladesh — 1 January 1995 Barbados — 1 January 1995 Belgium — 1 January 1995 Belize — 1 January 1995 Benin — 22 February 1996 Bolivia, Plurinational State of — 12 September 1995 Botswana — 31 May 1995 Brazil — 1 January 1995 Brunei Darussalam — 1 January 1995 Bulgaria — 1 December 1996 Burkina Faso — 3 June 1995 Burundi — 23 July 1995 C Cabo Verde — 23 July 2008 Cambodia — 13 October 2004 Cameroon — 13 December 1995 Canada — 1 January 1995 Central African Republic — 31 May 1995 Chad — 19 October 1996 Chile — 1 January 1995 China — 11 December 2001 Colombia — 30 April 1995 Congo — 27 March 1997 Costa Rica — 1 January 1995 Côte d’Ivoire — 1 January 1995 Croatia — 30 November 2000 Cuba — 20 April 1995 Cyprus — 30 July 1995 Czech Republic — 1 January 1995 D Democratic Republic of the Congo — 1 January 1997 Denmark — 1 January 1995 Djibouti — 31 May 1995 Dominica — 1 January 1995 Dominican Republic — 9 March 1995 E Ecuador — 21 January 1996 Egypt — 30 June 1995 El Salvador — 7 May 1995 Estonia — 13 November 1999 Eswatini — 1 January 1995 European Union (formerly EC) — 1 January 1995 F Fiji — 14 January 1996 Finland — 1 January 1995 France — 1 January 1995 G Gabon — 1 January 1995 Gambia — 23 October 1996 Georgia — 14 June 2000 Germany — 1 January 1995 Ghana — 1 January 1995 Greece — 1 January 1995 Grenada — 22 February 1996 Guatemala — 21 July 1995 Guinea — 25 October 1995 Guinea-Bissau — 31 May 1995 Guyana — 1 January 1995 H Haiti — 30 January 1996 Honduras — 1 January 1995 Hong Kong, China — 1 January 1995 Hungary — 1 January 1995 I Iceland — 1 January 1995 India — 1 January 1995 Indonesia — 1 January 1995 Ireland — 1 January 1995 Israel — 21 April 1995 Italy — 1 January 1995 J Jamaica — 9 March 1995 Japan — 1 January 1995 Jordan — 11 April 2000 K Kazakhstan — 30 November 2015 Kenya — 1 January 1995 Korea, Republic of — 1 January 1995 Kuwait, the State of — 1 January 1995 Kyrgyz Republic — 20 December 1998 L Lao People’s Democratic Republic — 2 February 2013 Latvia — 10 February 1999 Lesotho — 31 May 1995 Liberia — 14 July 2016 Liechtenstein — 1 September 1995 Lithuania — 31 May 2001 Luxembourg — 1 January 1995 M Macao, China — 1 January 1995 Madagascar — 17 November 1995 Malawi — 31 May 1995 Malaysia — 1 January 1995 Maldives — 31 May 1995 Mali — 31 May 1995 Malta — 1 January 1995 Mauritania — 31 May 1995 Mauritius — 1 January 1995 Mexico — 1 January 1995 Moldova, Republic of — 26 July 2001 Mongolia — 29 January 1997 Montenegro — 29 April 2012 Morocco — 1 January 1995 Mozambique — 26 August 1995 Myanmar — 1 January 1995 N Namibia — 1 January 1995 Nepal — 23 April 2004 Netherlands — 1 January 1995 New Zealand — 1 January 1995 Nicaragua — 3 September 1995 Niger — 13 December 1996 Nigeria — 1 January 1995 North Macedonia — 4 April 2003 Norway — 1 January 1995 O Oman — 9 November 2000 P Pakistan — 1 January 1995 Panama — 6 September 1997 Papua New Guinea — 9 June 1996 Paraguay — 1 January 1995 Peru — 1 January 1995 Philippines — 1 January 1995 Poland — 1 July 1995 Portugal — 1 January 1995 Q Qatar — 13 January 1996 R Romania — 1 January 1995 Russian Federation — 22 August 2012 Rwanda — 22 May 1996 S Saint Kitts and Nevis — 21 February 1996 Saint Lucia — 1 January 1995 Saint Vincent and the Grenadines — 1 January 1995 Samoa — 10 May 2012 Saudi Arabia, Kingdom of — 11 December 2005 Senegal — 1 January 1995 Seychelles — 26 April 2015 Sierra Leone — 23 July 1995 Singapore — 1 January 1995 Slovak Republic — 1 January 1995 Slovenia — 30 July 1995 Solomon Islands — 26 July 1996 South Africa — 1 January 1995 Spain — 1 January 1995 Sri Lanka — 1 January 1995 Suriname — 1 January 1995 Sweden — 1 January 1995 Switzerland — 1 July 1995 T Chinese Taipei — 1 January 2002 Tajikistan — 2 March 2013 Tanzania — 1 January 1995 Thailand — 1 January 1995 Togo — 31 May 1995 Tonga — 27 July 2007 Trinidad and Tobago — 1 March 1995 Tunisia — 29 March 1995 Turkey — 26 March 1995 U Uganda — 1 January 1995 Ukraine — 16 May 2008 United Arab Emirates — 10 April 1996 United Kingdom — 1 January 1995 United States — 1 January 1995 Uruguay — 1 January 1995 V Vanuatu — 24 August 2012 Venezuela, Bolivarian Republic of — 1 January 1995 Viet Nam — 11 January 2007 Y Yemen — 26 June 2014 Z Zambia — 1 January 1995 Zimbabwe — 5 March 1995

#### Intellectual property protections

Yinan Wang.2012 HANDLING THE U.S.-CHINA INTELLECTUAL PROPERTY RIGHTS DISPUTE – THE ROLE OF WTO’S DISPUTE SETTLEMENT SYSTEM. https://etd.ohiolink.edu/apexprod/rws\_etd/send\_file/send?accession=miami1336224534&disposition=inline

In short, intellectual property is “information with commercial value.”84 Primo Braga defines intellectual property rights as “a composite of ideas, inventions, and creative expressions and the public willingness to bestow the status of property on them.”85 The WTO has divided intellectual property rights into two broader areas—copyright and rights related to copyright; and industrial property. Copyright protects “[t]he rights of authors of literary and artistic works (such as books and other writings, musical compositions, paintings, sculpture, computer programs and films)… for a minimum period of 50 years after the death of the author.”86 Copyright also covers the rights of performers, such as singers, actors, and musicians, phonograms producers, and broadcasting organizations. Industrial property consists of trademarks (as well as service marks) and patents. Maskus defines trademark as “a symbol or other identifier that conveys information to the consumer about the product.”87 Trademark is the protection of distinctive signs which identify a product, company or service. If consumers believe that the mark is a reliable indicator of desirable characteristics of a good or service, they would be willing to pay a premium for the good or service. Related to trademarks is geographic indications, “which identify a good as originating in a place where a given characteristic of the good is essentially attributable to its geographical origin”.88 Other types of industrial property include primarily patents, but also industrial designs and trade secrets. According to Mertha, “[p]atents provide inventors with the right of exclusion from the use, production, sales, or import of the product or technology in question for a specified period of time”.89 Protection of these types of industrial properties is to “stimulate innovation, design and the creation of technology.”90

**Violation:**

#### 1] Accessibility– Changing the topic post facto structurally favors the aff by making neg prep, which is based on the resolution, useless—the judge can only make a meaningful decision when both sides have had an equal opportunity.  It allows someone to specialize in one area 4 years giving an huge edge over people who switch research focus ever 2 months, which means their arguments are presumptively false because they haven’t been subject to well-researched clash.

#### 2] Clash---forfeiting government action sanctions retreat from controversy and forces the negative to concede solvency before winning a link -- clash is the necessary condition for distinguishing debate from discussion, but negation exists on a sliding scale -- that jumpstarts the process of critical thinking, reflexivity, and argument refinement.

#### TVA:

#### 1AC Chen is the TVA—read an aff that defends getting rid of biopiracy

1. Policy aff that has an advantage that defends getting rid of the concept of patents- ie how native knowledge should be shared but its considered property

#### The planwould collapse the entire Pharmaceutical system predicated on exploitation – even if the Plan isn’t everything – it’s a critical step on the process of what Fanon terms “complete disorder”.

Ahmed 20 A Kavum Ahmed 6-24-2020 "Decolonizing the vaccine" <https://africasacountry.com/2020/06/decolonizing-the-vaccine> (A. Kayum Ahmed is Division Director for Access and Accountability at the Open Society Public Health Program in New York and teaches at Columbia University Law School.)//Duong+Elmer

Reflecting on a potential COVID-19 vaccine trial during a television interview in April, a French doctor stated, “If I can be provocative, shouldn’t we be doing this study in Africa, where there are no masks, no treatments, no resuscitation?” These remarks reflect a colonial view of Africa, reinforcing the idea that Africans are non-humans whose black bodies can be experimented on. This colonial perspective is also clearly articulated in the alliance between France, The Netherlands, Germany and Italy to negotiate priority access to the COVID-19 vaccine for themselves and the rest of Europe. In the Dutch government’s announcement of the European vaccine coalition, they indicate that, “… the alliance is also working to make a portion of vaccines available to low-income countries, including in Africa.” In the collective imagination of these European nations, Africa is portrayed as a site of redemption—a place where you can absolve yourself from the sins of “vaccine sovereignty,” by offering a “portion of the vaccines” to the continent. **Vaccine sovereignty reflects how European and American governments use public funding**, supported by the pharmaceutical industry and research universities, **to obtain priority access to** potential COVID-19 **vaccines**. The concept symbolizes the **COVID**-19 **vaccine** (when it eventually becomes available) **as** an **instrument of power deployed to exercise control** over who will live and who must die. **In order to counter vaccine sovereignty**, **we must decolonize the vaccine**. Africans have a particular role to play in leading this decolonization process as subjects of colonialism and as objects of domination through coloniality. Colonialism, as an expansion of territorial dominance, and coloniality, as the continued expression of Western imperialism after colonization, play out in the vaccine development space, most notably on the African continent. So what does decolonizing the vaccine look like? And how do we decolonize something that does not yet exist? **For** Frantz **Fanon**, “**Decolonization**, which sets out to change the order of the world, **is**, obviously, a **program of complete disorder**.” Acknowledging that the COVID-19 vaccine has been weaponized as an instrument of power by wealthy nations, decolonization requires a Fanonian program of radical re-ordering. In the context of vaccine sovereignty, this re-ordering **necessitates** the **dismantling** of the **profit-driven biomedical system**. This program starts with de-linking from Euro-American constructions of knowledge and power that reinforce vaccine sovereignty through the profit-driven biomedical system. Advocacy campaigns such as the “People’s Vaccine”, which **calls for guaranteed free access to COVID**-19 **vaccines**, diagnostics and treatments to everyone, everywhere, are a good start. Other mechanisms, such as the World Health Organization’s COVID-19 Technology Access Pool, similarly supports universal access to COVID-19 health technologies as global public goods. Since less than 1% of vaccines consumed in Africa are manufactured on the continent, **regional efforts to develop vaccine manufacturing capacity** such as those **led by** the **Africa** Center for Disease Control and Prevention, as well as the Alliance of African Research Universities, **must be supported**. These efforts collectively advance delinking and **move** us closer **toward** the **re-ordering of systems of power**. The opportunity for disorder is paradoxically enabled by the COVID-19 pandemic, which has permitted moments of existential reflection in the midst of the crisis. A few months ago, a press release announcing the distribution of “a portion of the vaccines” to Africans, may have been lauded as European benevolence. But in the context of a pandemic that is more likely to kill black people, Africa’s reliance on Europe for vaccine handouts is untenable, necessitating a re-examination of the systems of power that hold this colonial relationship in place. The Black African body appears to be good enough to be experimented on, but not worthy of receiving simultaneous access to the COVID-19 vaccine as Europeans. Consequently, Africans continue to feel the effects of colonialism and white supremacy, and understand the pernicious nature of European altruism. By reinforcing the current system of vaccine research, development and manufacturing, it has become apparent that European governments want to retain their colonial power over life and death in Africa through the COVID-19 vaccine. Resistance to this colonial power requires the decolonization of the vaccine.

#### 1- SSD solves offense – if you read this on neg as a counter methodology

#### 2 – any DA to the TVA negates – proves that there’s workable clash under my interp.

#### Procedural fairness is a voter and outweighs a] it’s an intrinsic good – debate is fundamentally a game and some level of competitive equity is necessary to sustain the activity, b] probability – debate can’t alter subjectivity, but it can rectify skews which means the only impact to a ballot is fairness and deciding who wins, c] it internal link turns every impact – a limited debate promotes in-depth research and engagement which is necessary to access all of their education.

#### DTD- T is question of models of debate

#### No impact turns – a. higher layer bc it indicts the aff b. baiting c. illogical

#### CI- they have to proactively to justify their model

### k- ballot

#### The role of the ballot is to vote for the better team. Anything is self serving, arbitrarily limits the scope of engagement, and begs the question of the rest of the debate.

#### 1. Competition- The competitive nature of debate wrecks the interactive nature of debate – the judge must decide between two competing speech acts and the debaters are trying to beat each other – this is the wrong forum for interaction

#### 2. Spillover- How does educational orientations spill over beyond this space? Empirically denied – judges vote on this on this time and nothing ever happens.

#### 3. Prescription- certain interactions are prescripted – eg subjectivity– can’t be reformulated so easily

#### 4. No evidence for the power of the ballot – debate specific – negate on presumption.

**Ritter 13**[Michael, JD UTexas Law, B.A. cum laude Trinity University. September 2013. “Overcoming the Fiction of ‘Social Change Through Debate’: What’s to Learn From 2Pac’s Changes?” <https://docs.wixstatic.com/ugd/9896ec_8b2b993ec42440ecaab1b07645385db5.pdf>]

Up to this point, this article has shown how each of the essential components of “**competitive interscholastic debate**” makes it very different from any other kind of debate. But one thing that is persuasive in any kind of debate is some sort of properly conducted study (or even a mere survey) that provides empirical proof or even substantial anecdotal support. To date, **none of the many academics** who coach or participate in the debate community have published a study or survey to support **the social change fiction**. (Perhaps they have tried, and discovered they were just wrong.) But until such an empirical study of competitive interscholastic debate is conducted, **students, judges, and coaches should not take it for granted**

### Impact Turn

**Extinction first**

#### A] Forecloses future improvement – we can never improve society because our impact is irreversible

#### E] Moral uncertainty – if we’re unsure about which interpretation of the world is true – we ought to preserve the world to keep debating about it

#### Computational Governance is Good:

#### 1] Bulk data collection is necessary to prevent terrorism.

Siegel 15 – Eric Siegel, Founder of Predictive Analytics World and Text Analytics World—conferences for members of the analytics industry, Executive Editor of the Predictive Analytics Times—a publication covering the predictive analytics industry, former Assistant Professor of Computer Science and Director of Technology Integration at Columbia University, holds a Ph.D. in Computer Science from Columbia University, 2015 ("Let's Not Be Too Hasty to Shut Down Big Data Security Sweeps," Newsweek, November 28th, Available Online at http://www.newsweek.com/lets-not-be-too-hasty-shut-down-big-data-security-sweeps-399115)

To be specific, stockpiling data about innocent people in particular is essential for state-of-the-art science that identifies new potential suspects. I'm not talking about scanning to find perpetrators, the well-known practice of employing vigilant computers to trigger alerts on certain behavior. The system spots a potentially nefarious phone call and notifies a heroic agent—that's a standard occurrence in intelligence thrillers, and a common topic in casual speculation about what our government is doing. Everyone's familiar with this concept. Rather, bulk data takes on a much more difficult, critical problem: precisely defining the alerts in the first place. The actual “intelligence” of an intelligence organization hinges on the patterns it matches against millions of cases—it must develop adept, intricate patterns that flag new potential suspects. Deriving these patterns from data automatically, the function of predictive analytics, is where the scientific rubber hits the road. (Once they’re established, matching the patterns and triggering alerts is relatively trivial, even when applied across millions of cases—that kind of mechanical process is simple for a computer.) It may seem paradoxical, but data about the innocent civilian can serve to identify the criminal. Although the ACLU calls it “mass, suspicionless surveillance,” this data establishes a baseline for the behavior of normal civilians. That is to say, law enforcement needs your data in order to learn from you how non-criminals behave. The more such data available, the more effectively it can do so. Here's how it works. Predictive analytics shrinks the unwieldy haystack throughout which law enforcement must hunt for needles—albeit by first analyzing the haystack in its entirety. The machine learns from the needles (i.e., known perpetrators, suspects and persons of interest) as well as the hay (i.e., the vast majority that is non-criminal) using the same technology that drives financial credit scoring, Internet search, personalized medicine, spam filtering, targeted marketing and movie, music and book recommendations. This automatic process generates patterns that flag individuals more likely to be needles, thereby targeting investigation activities and more productively utilizing the precious bandwidth of officers and agents. Under the right conditions, this will unearth terrorists who would have otherwise gone undetected. This increasingly common practice also drives other crime fighting functions. Today's law enforcement organizations predictively investigate, monitor, audit, warn, patrol, parole and sentence. Predictive analytics guides FBI anti-terrorism activities, judge and parole board decision-making, predictive patrolling by city police precincts and fraud detection, arguably the most pervasive government application of predictive analytics.

#### It’s uniquely feasible now – reject outdated defense – bioengineering overcomes every obstacle.

Patel and D’Souza 20 [Trushar R. Patel and Michael Hilary D'Souza 5-18-2020 "Coronavirus is not a bioweapon — but bioterrorism is a real future threat" Trushar R. Patel receives funding from the Canada Research Chair Program. Michael Hilary D'Souza receives funding from Canada Research Chair Program in conjunction with Trushar Patel. Partners] Elmer recut Adam

Opportunity and expertise The feasibility of designing and dispersing biological weapons varies in difficulty depending on the biological agent in question. For instance, Bacillus anthracis, an exceptionally deadly and versatile pathogenic bacterium that causes the disease anthrax, is naturally occurring in the environment and can infect humans and animals. Anthrax has recently emerged from thawing permafrost due to the effects of climate change, and manages to persist in harsh climates and environments demonstrating its versatility. Acquiring anthrax is relatively easy and its highly infectious spores can enter the body through inhalation of aerosols or ingestion via contaminated water supplies. Consequently, anthrax is considered one of the leading potential bioweapons. In 2001, five people in the United States died after receiving mail contaminated with anthrax — no one was caught or charged. Conversely, the employment of synthetic biology to engineer novel bioweapons from pre-existing pathogens using CRISPR or DNA synthesis is far more demanding in terms of laboratory requirements and expertise. The manipulation and handling of these agents have been made more accessible by biotechnology companies competing aggressively for the attention of academic, corporate and government funding. With strict deadlines and finite resources, researchers value methods that provide reproducible and reliable results. This has been especially encouraging for the development of new technologies like CRISPR, whose competitive market has made gene-editing accessible and cost effective. Researchers have also supplemented their laboratories 3D-printed equipment, making complex instruments that were once costly and out-of-reach easily accessible to anyone interested in biotechnology. This allows the convenient development of weapons to occur anywhere from stringent, regulated laboratories to remote facilities and even in one’s own garage. While countries like the U.S. and Russia inherited advanced biological weapons programmes from the Cold War, rogue nations like North Korea and terrorist organisations like al-Qaida are actively seeking to develop programs and infrastructure for their own use and deterrence against foreign interference. With easily obtainable and simple technologies, the ability to invest in an underground bioweapons program is widely available. All that is necessary to bridge the gap is talent. A common myth appears to exemplify terrorist members as being

uneducated individuals. However, at its peak, the Islamic State of Iraq and the Levant (ISIS) recruited a variety of educated professionals ranging from engineers to medical doctors. ISIS operated in the Middle East as any nation state would, with municipal bureaucracies, tax collection, road-building, infrastructural developments and hospitals. Terrorist organizations tend to have the same infrastructural and scientific capabilities as modern industrial nations, allowing them to potentially develop biochemical arsenals. The infrastructure requirements for biological weapons programs are also made easier by being comparatively cheaper and more versatile than a nuclear arsenal. This is largely because they can be masked by developments in medical industry, health and agricultural research.

#### Advanced synthetic biological weapons cause extinction

Sandberg, 8 -- Oxford University Future of Humanity Institute research fellow

[Anders, PhD in computation neuroscience, and Milan Cirkovic, senior research associate at the Astronomical Observatory of Belgrade, "How can we reduce the risk of human extinction?" Bulletin of the Atomic Scientists, 9-9-2008, thebulletin.org/how-can-we-reduce-risk-human-extinction, accessed 8-13-14] //

The risks from anthropogenic hazards appear at present larger than those from natural ones. Although great progress has been made in reducing the number of nuclear weapons in the world, humanity is still threatened by the possibility of a global thermonuclear war and a resulting nuclear winter. We may face even greater risks from emerging technologies. Advances in synthetic biology might makeit possible to engineerpathogens capable ofextinction-levelpandemics. The knowledge, equipment, and materials needed to engineer pathogens are more accessible than those needed to build nuclear weapons. And unlike other weapons, pathogens are self-replicating, allowing a small arsenal to become exponentially destructive. Pathogens have been implicated in the extinctions of many wild species. Although most pandemics "fade out" by reducing the density of susceptible populations, pathogens with wide host ranges in multiple species can reach even isolated individuals. The intentional or unintentional release of engineered pathogens with high transmissibility, latency, and lethality might be capable of causing **human extinction**. While such an event seems unlikely today, the likelihood may increase as biotechnologies continue to improve at a rate rivaling Moore's Law.

#### 3] Planet-scale computation is necessary to combat climate change

Joppa 19, PhD, scientist in the Computational Ecology and Environmental Sciences Group (Lucas, “A Planetary Computer to Avert Environmental Disaster,” Scientific American, <https://www.scientificamerican.com/article/a-planetary-computer-to-avert-environmental-disaster/>)

If environmental reports published this year were connected to an alarm system, the sound inside the United Nation's Manhattan headquarters would be deafening—we are facing a five-alarm fire. Myriad reports warned us we must take immediate action to ensure a sustainable supply of clean food, water and air to a human population projected to rapidly grow to 10 billion, all while stemming a globally catastrophic loss of biodiversity and averting the worst economic impacts of a changing climate. The news was devastating, but not unexpected. The specificity around the short window of time to act was, however. The world's leading environmental scientists have spoken, and the message is clear: The best time to act was yesterday, so we better start today. The task is much bigger and time is way shorter than previously thought. While the science says we very likely have no more than 420 gigatons of carbon left to spend, emissions steadily continue to rise every year. Just last year, over 42 gigatons was emitted. That gives us no more than 10 years before we must begin to operate as a carbon neutral planet. Unfortunately, discussions and commitments have yet to translate into measurable change. And change we must. At stake is not only the health of our planet, but the incredible social and economic progress seen across the world for at least the past 150 years. It's not surprising that many found themselves glumly nodding in agreement to Jonathan Franzen's recent article in the New Yorker, titled "What If We Stopped Pretending?" But fatalism never solved a problem. What does is a formula that has been repeated over centuries of human society—when faced with existential challenges, we have successfully and consistently tackled major societal problems through the simple summation of hard work, progressive governance and technological innovation. This ideal is what we must embrace in the era of climate change. While people are mobilizing and governments are meeting, what is missing is the third leg of the stool. Investment in technology solutions aimed at environmental outcomes is sorely needed to accelerate the pace, scale and effectiveness of our response to climate change. The epitome of the innovation we need is best understood as a "planetary computer." A planetary computer will borrow from the approach of today's internet search engines, and extend beyond them in the form of a geospatial decision engine that supports queries about the environmental status of the planet, programmed with algorithms to optimize its health.

Think of this less as a giant computer in a stark white room and more of an approach to computing that is planetary in scale and allows us to query every aspect of environmental and nature-based solutions available in real time. We currently lack the data, compute power and scalability to do so. Only when we have a massive amount of planetary data and compute at a similar scale can we begin to answer one of the most complex questions ever posed—how do we manage the earth's natural resources equitably and sustainably to ensure a prosperous and climate-stable future? The game-changing potential of this approach is clear, not only for fighting climate change but building a better future for us all. That is not just the hope of an environmental scientist with a background in computer science but borne out by research. A recent report by PwC United Kingdom found that applying AI in just a few areas could boost global GDP by 4.4 percent while lowering emissions by 4 percent. The Global Commission on Adaptation found that investment in adaptation measures would not only avoid human suffering and economic loss, it would bring benefits that outweigh the costs nearly four to one. The incredible benefits from these nature-based mitigation and adaptation solutions and AI-enabled transformations can only be realized with planetary data and computer power. That will require us to quickly take the three accelerants of the information age—ubiquity of data, advances in algorithms, and access to scalable computing infrastructure—and begin, for the first time in many instances, to apply them to our natural world. The gap in application and deployment becomes clear as we look at a few key nature-based solutions. Consider forests for carbon sequestration. We should be able to answer how many trees there are, where they are, and how fast they are appearing or disappearing. The same goes for species conservation, or healthy freshwater lakes or the rate of sea level rise in a granular sense of space and time. Right now, at best, we have very limited answers at a resolution that is far too broad geographically and for only a few points in time, and far less data for many other nature datasets. The world desperately needs better answers. We cannot create a blueprint of action to give us the world and environmental services we want and need without it. With a planetary computer using planetary data, we can ask—and answer—questions such as, What services can or should we obtain from different places on the earth? en route to a day where we can describe what we want for our future and how to get there. A planetary computer is an ambitious idea. It will require us to build a global network that connects billions, or trillions, of datapoints about our environment with the computing power and machine learning tools to process them into actionable insights that will empower decision makers in every corner of the globe to put sustainability first. And although parts of this plan may seem like science fiction, it could be a reality in the near future.

#### Climate change destroys the world.

Specktor 19 [Brandon writes about the science of everyday life for Live Science, and previously for Reader's Digest magazine, where he served as an editor for five years] 6-4-2019, "Human Civilization Will Crumble by 2050 If We Don't Stop Climate Change Now, New Paper Claims," livescience, <https://www.livescience.com/65633-climate-change-dooms-humans-by-2050.html> JW

\*\*Cites and talks about the Spratt and Dunlop study

What might an accurate worst-case picture of the planet's climate-addled future actually look like, then? The authors provide one particularly grim scenario that begins with world governments "politely ignoring" the advice of scientists and the will of the public to decarbonize the economy (finding alternative energy sources), resulting in a global temperature increase 5.4 F (3 C) by the year 2050. At this point, the world's ice sheets vanish; brutal droughts kill many of the trees in the [Amazon rainforest](https://www.livescience.com/57266-amazon-river.html) (removing one of the world's largest carbon offsets); and the planet plunges into a feedback loop of ever-hotter, ever-deadlier conditions.

"Thirty-five percent of the global land area, and 55 percent of the global population, are subject to more than 20 days a year of [lethal heat conditions](https://www.livescience.com/55129-how-heat-waves-kill-so-quickly.html), beyond the threshold of human survivability," the authors hypothesized.

Meanwhile, droughts, floods and wildfires regularly ravage the land. Nearly one-third of the world's land surface turns to desert. Entire ecosystems collapse, beginning with the planet's coral reefs, the rainforest and the Arctic ice sheets. The world's tropics are hit hardest by these new climate extremes, destroying the region's agriculture and turning more than 1 billion people into refugees.

This mass movement of refugees — coupled with [shrinking coastlines](https://www.livescience.com/51990-sea-level-rise-unknowns.html) and severe drops in food and water availability — begin to stress the fabric of the world's largest nations, including the United States. Armed conflicts over resources, perhaps culminating in nuclear war, are likely.

The result, according to the new paper, is "outright chaos" and perhaps "the end of human global civilization as we know it."

### Case

#### A – Spillover – the aff assumes that its advocacy of a certain affect is sufficient to result in the liberation of the flesh BUT they are missing a robust internal link to solving oppression inside OR outside the round

#### B- Ineffective-there’s no benefit to affirming the aff in debate-the round won’t spill up since nobody monitors individual rounds-means they don’t get their subjectivity offense – debate never solves the ontological revolution

#### C- Polarization-the ballot won’t change views since it alienates people who lose to them which fosters resistance against them and negative subjectivity-that increases antiblackness in debate since policy teams will villainize their arguments

#### Top Level - Unsustainability claims are suspect because our brains are wired for techno-pessimism – digital synchronicity can fix racism embedded in cybernetics thru human ingenuity and make the world materially better

Reinhart 18 (Will Rinehart is Director of Technology and Innovation Policy at the American Action Forum, where he specializes in telecommunication, Internet, and data policy, with a focus on emerging technologies and innovation. Rinehart previously worked at TechFreedom, where he was a Research Fellow. He was also previously the Director of Operations at the International Center for Law & Economics. In Defense of Techno-optimism. 10-10-2018. <https://techliberation.com/2018/10/10/in-defense-of-techno-optimism/> //shree)

Many are understandably pessimistic about platforms and technology. This year has been a tough one, from Cambridge Analytica and Russian trolls to the implementation of GDPR and data breaches galore.

Those who think about the world, about the problems that we see every day, and about their own place in it, will quickly realize the immense frailty of humankind. Fear and worry makes sense. We are flawed, each one of us. And technology only seems to exacerbate those problems.

But life is getting better. Poverty continues nose-diving; adult literacy is at an all-time high; people around the world are living longer, living in democracies, and are better educated than at any other time in history. Meanwhile, the digital revolution has resulted in a glut of informational abundance, helping to correct the informational asymmetries that have long plagued humankind. The problem we now face is not how to address informational constraints, but how to provide the means for people to sort through and make sense of this abundant trove of data. These macro trends don’t make headlines. Psychologists know that people love to read negative articles. Our brains are wired for pessimism.

In the shadow of a year of bad news, it helpful to remember that Facebook and Google and Reddit and Twitter also support humane conversations. Most people aren’t going online to talk about politics and if you are, then you are rare. These sites are places where families and friends can connect. They offer a space of solace – like when chronic pain sufferers find others on Facebook, or when widows vent, rage, laugh and cry without judgement through the Hot Young Widows Club. Let’s also not forget that Reddit, while sometimes a place of rage and spite, is also where a weight lifter with cerebral palsy can become a hero and where those with addiction can find healing. And in the hardest to reach places in Canada, in Iqaluit, people say that “Amazon Prime has done more toward elevating the standard of living of my family than any territorial or federal program. Full stop. Period”

Three-fourths of Americans say major technology companies’ products and services have been more good than bad for them personally. But when it comes to the whole of society, they are more skeptical about technology bringing benefits. Here is how I read that disparity: Most of us think that we have benefited from technology, but we worry about where it is taking the human collective. That is an understandable worry, but one that shouldn’t hobble us to inaction.

Nor is technology making us stupid. Indeed, quite the opposite is happening. Technology use in those aged 50 and above seems to have caused them to be cognitively younger than their parents to the tune of 4 to 8 years. While the use of Google does seem to reduce our ability to recall information, studies find that it has boosted other kinds of memory, like retrieving information. Why remember a fact when you can remember where it is located? Concerned how audiobooks might be affecting people, Beth Rogowsky, an associate professor of education, compared them to physical reading and was surprised to find “no significant differences in comprehension between reading, listening, or reading and listening simultaneously.” Cyberbullying and excessive use might make parents worry, but NIH supported work found that “Heavy use of the Internet and video gaming may be more a symptom of mental health problems than a cause. Moderate use of the Internet, especially for acquiring information, is most supportive of healthy development.” Don’t worry. The kids are going to be alright.

And yes, there is a lot we still need to fix. There is cruelty, racism, sexism, and poverty of all kinds embedded in our technological systems. But the best way to handle these issues is through the application of human ingenuity. Human ingenuity begets technology in all of its varieties.

When Scott Alexander over at Star Slate Codex recently looked at 52 startups being groomed by startup incubator Y Combinator, he rightly pointed out that many of them were working for the betterment of all:

Thirteen of them had an altruistic or international development focus, including Neema, an app to help poor people without access to banks gain financial services; Kangpe, online health services for people in Africa without access to doctors; Credy, a peer-to-peer lending service in India; Clear Genetics, an automated genetic counseling tool for at-risk parents; and Dost Education, helping to teach literacy skills in India via a $1/month course.

Twelve of them seemed like really exciting cutting-edge technology, including CBAS, which describes itself as “human bionics plug-and-play”; Solugen, which has a way to manufacture hydrogen peroxide from plant sugars; AON3D, which makes 3D printers for industrial uses; Indee, a new genetic engineering system; Alem Health, applying AI to radiology, and of course the obligatory drone delivery startup.

Eighteen of them seemed like boring meat-and-potatoes companies aimed at businesses that need enterprise data solution software application package analytics targeting management something something something “the cloud”.

As for the other companies, they were the kind of niche products that Silicon Valley has come to be criticized for supporting. Perhaps the Valley deserves some criticism, but perhaps it deserves more credit than it’s been receiving as-of-late.

Contemporary tech criticism displays a kind of anti-nostalgia. Instead of being reverent for the past, anxiety for the future abounds. In these visions, the future is imagined as a strange, foreign land, beset with problems. And yet, to quote that old adage, tomorrow is the visitor that is always coming but never arrives. The future never arrives because we are assembling it today. We need to work diligently together to piece together a better world. But if we constantly live in fear of what comes next, that future won’t be built. Optimism needn’t be pollyannaish. It only needs to be hopeful of a better world.

#### Tech thought is inevitable

Kateb, professor of politics – Princeton, ’97 (George, <http://findarticles.com/p/articles/mi_m2267/is_/ai_19952031>)

But the question arises as to where a genuine principle of limitation on technological endeavor would come from. It is scarcely conceivable that Western humanity--and by now most of humanity, because of their pleasures and interests and their own passions and desires and motives--would halt the technological project. Even if, by some change of heart, Western humanity could adopt an altered relation to reality and human beings, how could it be enforced and allowed to yield its effects? The technological project can be stopped only by some global catastrophe that it had helped to cause or was powerless to avoid. Heidegger's teasing invocation of the idea that a saving remedy grows with the worst danger is useless. In any case, no one would want the technological project halted, if the only way was a global catastrophe. Perhaps even the survivors would not want to block its reemergence. As for our generation and the indefinite future, many of us are prepared to say that there are many things we wish that modern science did not know or is likely to find out and many things we wish that modern technology did not know how to do. When referring in 1955 to the new sciences of life, Heidegger says We do not stop to consider that an attack with technological means is being prepared upon the life and nature of man compared with which the explosion of the hydrogen bomb means little. For precisely if the hydrogen bombs do not explode and human life on earth is preserved, an uncanny change in the world moves upon us (1966, p. 52). The implication is that it is less bad for the human status or stature and for the human relation to reality that there be nuclear destruction than that (what we today call) genetic engineering should go from success to success. To such lengths can a mind push itself when it marvels first at the passions, drives, and motives that are implicated in modern technology, and then marvels at the feats of technological prowess. The sense of wonder is entangled with a feeling of horror. We are past even the sublime, as conceptualized under the influence of Milton's imagination of Satan and Hell. It is plain that so much of the spirit of the West is invested in modern technology. We have referred to anger, alienation, resentment. But that cannot be the whole story. Other considerations we can mention include the following: a taste for virtuosity, skill for its own sake, an enlarged fascination with technique in itself, and, along with these, an aesthetic craving to make matter or nature beautiful or more beautiful; and then, too, sheer exhilaration, a questing, adventurous spirit that is reckless, heedless of danger, finding in obstacles opportunities for self-overcoming, for daring, for the very sort of daring that Heidegger praises so eloquently when in 1935 he discusses the Greek world in An Introduction to Metaphysics (1961, esp. pp. 123-39). All these considerations move away from anger, anxiety, resentment, and so on. The truth of the matter, I think, is that the project of modern technology, just like that of modern science, must attract a turbulence of response. The very passions and drives and motives that look almost villainous or hypermasculine simultaneously look like marks of the highest human aspiration, or, at the least, are not to be cut loose from the highest human aspiration.

#### No tech accidents, no algorithmic arms race.

Michael Shermer 17. Publisher of Skeptic magazine, a monthly columnist for Scientific American, and a Presidential Fellow at Chapman University. 04/2017. “Why Artificial Intelligence Is Not an Existential Threat.” Skeptic, vol. 22, no. 2, pp. 29–35.

Why AI is not an Existential Threat First, most AI doomsday prophecies are grounded in the false analogy between human nature and computer nature, or natural intelligence and artificial intelligence. We are thinking machines, but natural selection also designed into us emotions to shortcut the thinking process because natural intelligences are limited in speed and capacity by the number of neurons that can be crammed into a skull that has to pass through a pelvic opening at birth, whereas artificial intelligence need not be so restricted. We don't need to compute the caloric value of foods, for example, we just feel hungry. We don't need to calculate the waist-to-hip ratio of women or the shoulder-to-waist ratio of men in our quest for genetically healthy potential mates; we just feel attracted to someone and mate with them. We don't need to work out the genetic cost of raising someone else's offspring if our mate is unfaithful; we just feel jealous. We don't need to figure the damage of an unfair or non-reciprocal exchange with someone else; we just feel injustice and desire revenge. Emotions are proxies for getting us to act in ways that lead to an increase in reproductive success, particularly in response to threats faced by our Paleolithic ancestors. Anger leads us to strike out, fight back, and defend ourselves against danger. Fear causes us to pull back, retreat, and escape from risks. Disgust directs us to push out, eject, and expel that which is bad for us. Computing the odds of danger in any given situation takes too long. We need to react instantly. Emotions shortcut the information processing power needed by brains that would otherwise become bogged down with all the computations necessary for survival. Their purpose, in an ultimate causal sense, is to drive behaviors toward goals selected by evolution to enhance survival and reproduction. AIs -- even AGIs and ASIs -- will have no need of such emotions and so there would be no reason to program them in unless, say, terrorists chose to do so for their own evil purposes. But that's a human nature problem, not a computer nature issue. To believe that an ASI would be "evil" in any emotional sense is to assume a computer cognition that includes such psychological traits as acquisitiveness, competitiveness, vengeance, and bellicosity, which seem to be projections coming from the mostly male writers who concoct such dystopias, not features any programmer would bother including, assuming that it could even be done. What would it mean to program an emotion into a computer? When IBM's Deep Blue defeated chess master Garry Kasparov in 1997, did it feel triumphant, vengeful, or bellicose? Of course not. It wasn't even "aware" -- in the human sense of self-conscious knowledge -- that it was playing chess, much less feeling nervous about possibly losing to the reigning world champion (which it did in the first tournament played in 1996). In fact, toward the end of the first game of the second tournament, on the 44th move, Deep Blue made a legal but incomprehensible move of pushing its rook all the way to the last row of the opposition side. It accomplished nothing offensively or defensively, leading Kasparov to puzzle over it out of concern that he was missing something in the computer's strategy. It turned out to be an error in Deep Blue's programming that led to this fail-safe default move. It was a bug that Kasparov mistook as a feature, and as a result some chess experts contend it led him to be less confident in his strategizing and to second-guess his responses in the subsequent games. It even led him to suspect foul play and human intervention behind Deep Blue, and this paranoia ultimately cost him the tournamentt.[ 13] Computers don't get paranoid, the HAL 9000 computer in 2001 notwithstanding. Or consider Watson, the IBM computer built by David Ferrucci and his team of IBM research scientists tasked with designing an AI that could rival human champions at the game of Jeopardy! This was a far more formidable challenge than Deep Blue faced because of the prerequisite to understand language and the often multiple meanings of words, not to mention needing an encyclopedic knowledge of trivia (Watson had access to Wikipedia for this). After beating the all-time greatest Jeopardy! champions Ken Jennings and Brad Rutter in 2011, did Watson feel flushed with pride after its victory? Did Watson even know that it won Jeopardy!? I put the question to none other than Ferrucci himself at a dinner party in New York in conjunction with the 2011 Singularity Summit. His answer surprised me: "Yes, Watson knows it won Jeopardy!" I was skeptical. How could that be, since such self-awareness is not yet possible in computers? "Because I told it that it won," he replied with a wry smile. Sure, and you could even program Watson or Deep Blue to vocalize a Howard Dean-like victory scream when it wins, but that is still a far cry from a computer feeling triumphant. This brings to mind the "hard problem" of consciousness -- if we don't understand how this happens in humans, how could we program it into computers? As Steven Pinker elucidated in his answer to the 2015 Edge Question on what to think about machines that think, "AI dystopias project a parochial alpha-male psychology onto the concept of intelligence. They assume that superhumanly intelligent robots would develop goals like deposing their masters or taking over the world." It is equally possible, Pinker suggests, that "artificial intelligence will naturally develop along female lines: fully capable of solving problems, but with no desire to annihilate innocents or dominate the civilization."[ 14] So the fear that computers will become emotionally evil are unfounded, because without the suite of these evolved emotions it will never occur to AIs to take such actions against us. What about an ASI inadvertently causing our extinction by turning us into paperclips, or tiling the entire Earth's surface with solar panels? Such scenarios imply yet another emotion -- the feeling of valuing or wanting something. As the science writer Michael Chorost adroitly notes, when humans resist an AI from undertaking any form of global tiling, it "will have to be able to imagine counteractions and want to carry them out." Yet, "until an AI has feelings, it's going to be unable to want to do anything at all, let alone act counter to humanity'

s interests and fight off human resistance." Further, Chorost notes, "the minute an A.I. wants anything, it will live in a universe with rewards and punishments -- including punishments from us for behaving badly. In order to survive in a world dominated by humans, a nascent A.I. will have to develop a humanlike moral sense that certain things are right and others are wrong. By the time it's in a position to imagine tiling the Earth with solar panels, it'll know that it would be morally wrong to do so."[ 15] From here Chorost builds on an argument made by Peter Singer in The Expanding Circle (and Steven Pinker in The Better Angels of Our Nature[ 16] that I also developed in The Moral Arc[ 17] and Robert Wright explored in Nonzero[ 18]), and that is the propensity for natural intelligence to evolve moral emotions that include reciprocity, cooperativeness, and even altruism. Natural intelligences such as ours also includes the capacity to reason, and once you are on Singer's metaphor of the "escalator of reason" it can carry you upward to genuine morality and concerns about harming others. "Reasoning is inherently expansionist. It seeks universal application," Singer notes.[ 19] Chorost draws the implication: "AIs will have to step on the escalator of reason just like humans have, because they will need to bargain for goods in a human-dominated economy and they will face human resistance to bad behavior."[ 20] Finally, for an AI to get around this problem it would need to evolve emotions on its own, but the only way for this to happen in a world dominated by the natural intelligence called humans would be for us to allow it to happen, which we wouldn't because there's time enough to see it coming. Bostrom's "treacherous turn" will come with road signs ahead warning us that there's a sharp bend in the highway with enough time for us to grab the wheel. Incremental progress is what we see in most technologies, including and especially AI, which will continue to serve us in the manner we desire and need. Instead of Great Leap Forward or Giant Fall Backward, think Small Steps Upward. As I proposed in The Moral Arc, instead of Utopia or dystopia, think protopia, a term coined by the futurist Kevin Kelly, who described it in an Edge conversation this way: "I call myself a protopian, not a Utopian. I believe in progress in an incremental way where every year it's better than the year before but not by very much -- just a micro amount."[ 21] Almost all progress in science and technology, including computers and AI, is of a protopian nature. Rarely, if ever, do technologies lead to either Utopian or dystopian societies. Pinker agrees that there is plenty of time to plan for all conceivable contingencies and build safeguards into our AI systems. "They would not need any ponderous 'rules of robotics' or some newfangled moral philosophy to do this, just the same common sense that went into the design of food processors, table saws, space heaters, and automobiles." Sure, an ASI would be many orders of magnitude smarter than these machines, but Pinker reminds us of the AI hyperbole we've been fed for decades: "The worry that an AI system would be so clever at attaining one of the goals programmed into it (like commandeering energy) that it would run roughshod over the others (like human safety) assumes that AI will descend upon us faster than we can design fail-safe precautions. The reality is that progress in AI is hype-defyingly slow, and there will be plenty of time for feedback from incremental implementations, with humans wielding the screwdriver at every stage."[ 22] Former Google CEO Eric Schmidt agrees, responding to the fears expressed by Hawking and Musk this way: "Don't you think the humans would notice this, and start turning off the computers?" He also noted the irony in the fact that Musk has invested $1 billion into a company called OpenAI that is "promoting precisely AI of the kind we are describing."[ 23] Google's own DeepMind has developed the concept of an AI off-switch, playfully described as a "big red button" to be pushed in the event of an attempted AI takeover. "We have proposed a framework to allow a human operator to repeatedly safely interrupt a reinforcement learning agent while making sure the agent will not learn to prevent or induce these interruptions," write the authors Laurent Orseau from DeepMind and Stuart Armstrong from the Future of Humanity Institute, in a paper titled "Safely Interruptible Agents." They even suggest a precautionary scheduled shutdown every night at 2 AM for an hour so that both humans and AI are accustomed to the idea. "Safe interruptibility can be useful to take control of a robot that is misbehaving and may lead to irreversible consequences, or to take it out of a delicate situation, or even to temporarily use it to achieve a task it did not learn to perform or would not normally receive rewards for this."[ 24] As well, it is good to keep in mind that artificial intelligence is not the same as artificial consciousness. Thinking machines may not be sentient machines. Finally, Andrew Ng of Baidu responded to Elon Musk's ASI concerns by noting (in a jab at the entrepreneur's ambitions for colonizing the red planet) it would be "like worrying about overpopulation on Mars when we have not even set foot on the planet yet."[ 25] Both Utopian and dystopian visions of AI are based on a projection of the future quite unlike anything history has given us. Yet, even Ray Kurzweil's "law of accelerating returns," as remarkable as it has been has nevertheless advanced at a pace that has allowed for considerable ethical deliberation with appropriate checks and balances applied to various technologies along the way. With time, even if an unforeseen motive somehow began to emerge in an AI we would have the time to reprogram it before it got out of control. That is also the judgment of Alan Winfield, an engineering professor and co-author of the Principles of Robotics, a list of rules for regulating robots in the real world that goes far beyond Isaac Asimov's famous three laws of robotics (which were, in any case, designed to fail as plot devices for science fictional narratives).26 Winfield points out that all of these doomsday scenarios depend on a long sequence of big ifs to unroll sequentially: "If we succeed in building human equivalent AI and if that AI acquires a full understanding of how it works, and if it then succeeds in improving itself to produce super-intelligent AI, and if that super-AI, accidentally or maliciously, starts to consume resources, and if we fail to pull the plug, then, yes, we may well have a problem. The risk, while not impossible, is improbable."[ 27]

#### Cede the Political DA – only state engagement stops the worst excesses of cybernetics.

Hughes 2 (James, PhD in Public Policy @ Trinity College. “Democratic Transhumanism 2.0” <http://www.changesurfer.com/Acad/DemocraticTranshumanism.htm> //shree)

First, state action is required to address catastrophic threats from transhumanist technologies. Most transhumanists acknowledge that nanotechnology, genetic engineering and artificial intelligence could cause catastrophes if used for terrorist or military purposes, or accidentally allowed to reproduce in the wild. Contemplation of these catastrophic scenarios has led prominent transhumanists, such as Max More the founder and president of the Extropy Institute, to move away from libertarianism and to endorse prophylactic government policies. Requiring nanotechnology firms to take out insurance against the accidental destruction of the biosphere just isn’t very practical. What insurance policy covers accidental destruction of the biosphere? How could the externalities of bioterrorism be internalized into a cost accounting of a gene therapy firm? Only governments are in a position to create the necessary levels of prophylaxis, and most transhumanists can agree on this point.

Second, only believable and effective state-based policies to prevent adverse consequences from new technologies will reassure skittish publics that they do not have to be banned. Because of the weakness of social democracy in the U.S., current technology policy is dominated by ignorant hysteria on one side and greed on the other, politicians feeding off of populist Luddite hysteria and corporate anti-regulatory lobbyists. Publics must be offered a choice other than that of unfettered free-market technology versus bans. If transhumanists do not acknowledge the legitimacy of regulation, and attempt to craft and support responsible legislation, they cede the field to the Luddites. These choices require strong social democratic governments, such as those of Europe, that can act independent of corporate interests and vocal extremists. We need a strong social democratic regulatory apparatus that does not block transhuman technologies for Luddite reasons, but that also will ensure that transhuman technologies are safe and effective. The case of cryonics shows how spectacular frauds or iatrogenic disasters can set back acceptance of transhuman technology altogether. Human enhancements must be proven safe before being used, but not held hostage to vague Luddite anxieties.

Third, social policies must explicitly address public concerns that biotechnology will exacerbate social inequality. Libertarian transhumanists have a forceful answer to the challenge that biotechnology will be used for totalitarian applications: in a liberal society, each individual will choose for themselves whether to adopt the technologies. But what is their answer to the threat of growing class polarization? Biotechnologies will make it possible for the wealthy to have healthier, stronger, more intelligent and longer-lived children. Overcoming popular resistance to technology will require not only assuring publics that they are safe and will not be forced on anyone, but also that there will be universal, equitable access to their benefits through public financing. In other words, genetic choice and enhancement technologies must be included in a national health insurance program.

Nanotechnology and artificial intelligence will also exacerbate inequality by contributing to structural unemployment through automation. Work will be increasingly unnecessary in the 21st century. If techno-optimists do not work to ameliorate structural unemployment through expansions in the welfare state, job retraining, establishing a shorter work-week and work-life, and a guaranteed social income, then we are likely to see the return of old-school Luddism, machine-smashing by the unemployed.

Fourth, monopolistic practices and overly restrictive intellectual property law can seriously delay the development of transhuman technologies, and restrict their access. Applications of intellectual property law that are over-generous to corporations may restrict access to information and tools in ways that slow innovation. By engaging with law and public policy, transhumanists can protect the public commons in biomedical information essential to the advance of science.

Fifth, only a strong liberal democratic state can ensure that posthumans are not persecuted. The posthuman future will be as threatening to unenhanced humans as gay rights or women’s liberation have been to patriarchs and homophobes, or immigrant rights are to nativists. While libertarian transhumanists may imagine that they will be able to protect themselves if they are well-armed and have superior reflexes, they will be severely outnumbered. Nor is civil war an attractive outcome. Rather transhumanists must understand their continuity with the civil rights movements of the past and work to build coalitions with sexual, cultural, racial and religious minorities to protect liberal democracy. We need a strong democratic state that protects the right of avantgarde minorities to innovate and experiment with their own bodies and minds.

Transhumanists must also come to some terms with congenial wing of the animal rights movement since, like animal rights, transhumanism is opposed to anthropocentrism. But rather than rights for all life, transhumanist ethics seeks to establish the solidarity of and citizenship for all intelligent life. Transhumanists look forward to a society in which humans, post-humans and intelligent non-humans are all citizens of the polity. Consistent with this would be the demands of the Great Ape Project for an extension of human level protections to the great apes.

Sixth, libertarian transhumanists are inconsistent in arguing for the free market. The dominant argument for the free market on the part of libertarian transhumanists comes from Hayek: that the market is a naturally evolved, emergent phenomenon without conscious guidance, which allocates resources better than planning. But the goal of transhumanism is precisely to supplant the natural with the planned, replacing chance with design. The key to transhumanism is faith in reason, not in nature.

In any case, the assertion that the market s naturally evolved while governance structures and polities are artificial impositions on nature is bad sociology. All functioning markets require norms, rules, laws, legislatures, police, courts and planning. All democratic polities require the action of millions of autonomous agents aggregating their interests, expressing themselves in voluntary behavior, and creating an emergent political system. The market is not any more natural than democracy, even if being “natural” was a transhumanist virtue.

#### Technological progress is self sustaining and corrective

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Of course, Naam's views may be rejected by some on the left because he is unabashedly a techno- optimist. Well, what's wrong with that? The fact of the matter is that almost everything people like about the modern world, including relatively high living standards, is traceable to technological advances and the knowledge embodied in those advances. From smart phones, flat screen TVs and the internet to air and auto travel to central heating and air conditioning to the medical devices and drugs that cure disease and extend life to electric lights and the mundane flush toilet—the list is endless—technology has dramatically transformed people's lives, making them both much better and much longer than they ever have been before. It is difficult to argue that the average person today is not far, **far better off** than her counterpart in the past. As the Northwestern University economic historian Joel Mokyr puts it, the so-called good old 42 days were old but they were not good. And what do we have to thank for all these spectacular advances? Technology! Technology has both enabled the new goods, machines, medicine and so on that we consume and enabled the economic growth that allows us to consume at such a high level. Of course, economists debate endlessly about the exact mechanisms connecting technology to growth and what social and institutional conditions must be met for technology to maximize its effect on growth, but at the end of the day the growth we have seen—and the living standards we enjoy—would simply not have been possible without the massive breakthroughs and continuous improvements we have seen in the technological realm. Given all this and given the central importance of economic growth to the left's prospects, one would think that the left would embrace techno- optimism rather than shying away from it. After all, if the goal is to be successful and improve people's lives, rapid technological advance is surely something to promote enthusiastically. But the left has been oddly circumspect about the possibilities of new and better technologies, allowing the techno-optimism space to be dominated by libertarian-minded denizens of Silicon Valley.43 As British science journalist Leigh Phillips puts it: Once upon a time, the left ... promised more innovation, faster progress, greater abundance. One of the reasons I believe that the historically fringe ideology of libertarianism is today so surprisingly popular in Silicon Valley and with tech-savvy young people more broadly ... is that libertarianism is the only extant ideology that so substantially promises a significantly materially better future. There are several reasons for the left's ambiguous relationship to technology. One has already been mentioned: the left has tended to underestimate the importance of economic growth in the recent past, believing incorrectly that they can achieve their social objectives in an era of a tepid and poorly distributed growth. That leads naturally to an underestimation of the importance of technological change, since one of its chief attributes is promoting growth. Second, and worse, many on the left tend to regard technological change with dread rather than hope. They see technology as a force facilitating inequality rather than growth, disadvantaging manual workers rather than leading to skilled job creation, turning consumers into corporate pawns rather than information-savvy citizens and destroying the planet in the process. We are far, far away from the traditional left attitude that welcomed technological change as the handmaiden of abundance and increased leisure. Or, for that matter, from the liberal optimism that permeated the culture of the 1950s and '60s with tantalizing visions of flying cars and obedient robots. Third, the left has become infected with general pessimism about prospects for growth, acceding, as we have seen, to the idea that growth can't really be much greater than it already is. Just as this devalues the role of policy it also devalues the role of technological change. Why be optimistic about technological change if it's not likely to have much effect anyway? Feeding right into these sentiments is the growth of academic techno-pessimism. The leading light in this emerging school of thought is economist Robert Gordon, coincidentally in the same department at Northwestern University where leading techno-optimist Mokyr teaches. In his 2012 paper, "Is Economic Growth Over?: Faltering Innovation Confronts the Six Headwinds," and then in a number of follow-up papers and a massive book, Gordon argues that economic growth on the level we've been used to in the last 200 years may in fact be a historical anomaly and that strong growth has only been possible because of dramatic new innovations that have turbocharged economic advance—"industrial revolutions" in his terminology.45 The first industrial revolution was 1750—1830, based around steam engines, cotton spinning and railroads. The second revolution was 1870—1900, featuring electricity, the internal combustion engine and running water with indoor plumbing. He believes that both these industrial revolutions took about 100 years to work their way through the economy and generate their full effects. For example, the second industrial revolution was still giving us advances like air conditioning, home appliances and the interstate highway system in the 1950—70 period. The third industrial revolution is centered on computers and the internet. Gordon is not impressed with this revolution. He thinks all the really important, transformative stuff came from the first two revolutions, especially the second. He is fond of posing this question in his public lectures: which would you be willing to give up, your iPhone or the flush toilet? He thinks the post-1970 slowdown in productivity growth (it dropped by about half) is traceable to the relative triviality of the computer/internet revolution. And when we finally got a burst of productivity growth in the 1996—2004 period, it quickly petered out. The reason, he believes, is that the third industrial revolution has already run out of gas (no 100-year phase-in here) and just doesn't have much more to give us. Because of this and because of his six "headwinds" to growth (demographic burdens, stagnating educational attainment, high levels of inequality, globalization, rising energy and environmental costs, and high levels of household and government debt), he projects an ongoing decline in per capita economic growth to a meager 0.2 percent per year this century. But is it really true that all the cool stuff has already been invented? This does not seem likely. Mokyr points to emerging fields of innovation such as 3-D printing, genetic modification and custom- designed materials.46 There is also the rapid development of self-driving cars and ever-more sophisticated robots and artificial intelligence systems. Even more significantly, technology related to the generation and storage of clean energy has been advancing by leaps and bounds. For example, the price of solar power has been declining exponentially for years; according to Naam, the price of electricity from new solar declines by about 16 percent every time solar capacity doubles.4Z And progress has also been extremely rapid in making battery storage of renewable energy inexpensive, reliable and large- scale. Surely cheap, renewable energy qualifies as a breakthrough innovation. More generally, it is worth noting that by the end of the twentieth century more technological advances had been made in the previous hundred years than in all of history before 1900. As physicist Michio Kaku argues in his book Visions: How Science Will Revolutionize the 21st Century, there is no good reason to believe that this breakneck pace will slow in the twenty-first century, since we are just on the verge of mastering knowledge gleaned from technological revolutions in three interwined areas: computer science, biomolecular science/engineering, and quantum physics 48 Indeed, as we transition from an era where we have discovered the basic laws and building blocks in these fields to an era where we apply that knowledge, the pace of innovation, if anything, may accelerate. Currently underdeveloped fields like biotechnology, nanotechnology and quantum computing may leap forward in ways we cannot exactly anticipate but that are likely to have a big impact. Rather than correctly predicting a long-term innovation slowdown, it seems more likely that Gordon and his co-thinkers will join the long list of economic pessimists that have been proven wrong over the last 150 years.49 As blogger Kevin Drum cogently puts it: I can somehow imagine a circa-1870 version of Gordon arguing that all this folderol about electricity is ridiculous. Why, we've been studying electricity for over a century, and what do we have to show for it? Some clunky batteries, the telegraph, a few arc lamps with limited use, and a steady supply of techno-optimist inventors who keep telling us that any day now they'll invent a practical generator that will replace steam engines and change the world. Don't believe it, folks. 5 Interestingly, Drum, despite his bracing critique, is himself a sort of techno-pessimist—or, more precisely, a pessimistic techno-optimist. In an influential article for Mother Jones magazine, provocatively titled "Welcome Robot Overlords: Please Don't Fire Us?" Drum envisions robots growing smarter and more capable at an exponential rate so that by, say 2040, there will not be much need for human workers.51 Result: mass unemployment and social dysfunction despite unprecedented technological advance. Thus Drum goes to the other extreme from Gordon. Not only will there not be an innovation slowdown but there will be such a drastic innovation speedup that it will put everybody out of work. But this is just as unrealistic as Gordon. As Anthony Carnevale and Stephen Rose point out in their detailed study of the technological transformation of the U.S. economy, instead of assuming a virtual vanishing of growth as Gordon does, Drum is implicitly assuming economic growth in the neighborhood of 10 percent per year as smart machines generate greater and greater 52 output without human intervention. This seems unlikely to say the least. Yet this point of view is not without influence on the left, where a sort of neo-Luddism has become increasingly common. Drum himself has remarked: "The Luddites weren't wrong. They were just 200 years too early."53 Martin Ford's 2015 book, Rise of the Robots: Technology and the Threat of a Jobless Future, which predicts half of U.S. workers will be replaced by robots in the next 20 years, was widely 54 and respectfully reviewed in liberal outlets. Coming after a spell of high unemployment from the Great Recession, which is just lifting in the United States (and still hasn't in much of Europe), this seems like a very odd thing for those on the left to worry about. It is especially odd when the history of technological advance is full of transformations that put workers out of jobs in one sector only to have more jobs created in others as demand for new products and services grew.55 It's time for the left to discard both the Gordon and Drum forms of techno-pessimism and firmly embrace techno-optimism. Continuing technological advance is not only probable but good; instead of a future of no jobs it will be a future of different and more highly skilled jobs. These advances will likely transform our lives dramatically—in some ways we can already see and some we cannot anticipate. **They will be a key to human liberation and critically to the growth that will facilitate the pursuit of social justice and a higher standard of living for all**. Techno-optimism is too important to be left to the libertarians.

#### Realism real – can’t wish away great power competition.

Mearsheimer, John J. Professor of IR @ Uchicago, ’19, “Bound to Fail.” International Security, Vol. 43, No. 4

No international order lasts forever, which raises the question: What explains the demise of an existing order and the rise of a new one? The same two factors that account for the prevailing order, the distribution of power and the leading state’s political ideology, explain the fall of realist and agnostic orders as well as the kind of order that replaces them. While those same factors also help explain the dissolution of ideological orders, two other factors, nationalism and balance of power politics, usually play the central role in causing their collapse.

Realist orders, which are based on either bipolarity or multipolarity, collapse when the underlying distribution of power changes in fundamental ways. If the international system shifts from bipolarity to multipolarity or vice versa, or if the number of great powers in a multipolar system decreases or increases, the resulting order remains realist, although different in its conªguration. Regardless of the number of great powers in the system, they still must compete with each other for power and inºuence. But if bipolarity or multipolarity gives way to unipolarity, the new order will be either agnostic or ideological, depending on whether or not the sole pole is committed to a universalistic ideology.

Realist orders tend to have signiªcant staying power, because major shifts in the balance of power are usually the result of differential economic growth among the great powers over a long period of time. Great power wars, however, can sometimes lead to a swift change in the global distribution of power, although such events are rare.15 After World War II, for example, the system shifted from multipolar to bipolar, largely because of the total defeat of Germany and Japan and the terrible price the war exacted on Britain and France. The Soviet Union and the United States emerged as the two poles. Moreover, when realist orders change, they usually give way to newly conªgured realist orders—as happened after World War II—simply because unipolarity is rare.

Agnostic orders also tend to have substantial staying power, because the unipole accepts the heterogeneity that is inherent in political and social life and does not try to micromanage the politics of nearly every country on the planet. That kind of pragmatic behavior helps preserve, if not augment, the hegemon’s power. An agnostic order is likely to meet its end when unipolarity gives way to either bipolarity or multipolarity, making the order realist; or if the sole pole experiences a revolution at home and adopts a universalistic ideology, which would surely lead it to forge an ideological order.

By contrast, any ideological international order based on a universalistic ideology, such as liberalism or communism, is destined to have a short life span, mainly because of the domestic and global difficulties that arise when the unipole seeks to remake the world in its own image. Nationalism and balance of power politics work to undermine the requisite social engineering in countries targeted for regime change, while nationalism also creates significant problems on the home front for the sole pole and its ideological allies. When such problems emerge, the unipole is likely to give up trying to remake the world in its own image, in effect abandoning its efforts to export its ideology abroad. It might even forsake that ideology altogether. When that happens, the order stops being ideological and becomes agnostic.

An ideological order can also come to an end in a second way. New great powers could emerge, which would undermine unipolarity and lead to either a bipolar or a multipolar system. In that event, the ideological order would be replaced by bounded and international realist orders.