## 1AC - Substance

### Plan

#### Plan: The member nations of the World Trade Organization ought to reduce intellectual property protections for covid-19 medicines

#### The plan achieves global health equity – no solvency deficits or disads

**Erfani et al 21** Parsa Erfani [Fogarty global health scholar at Harvard Medical School], Agnes Binagwaho [vice chancellor at University of Global Health Equity, Rwanda], Mohamed Juldeh Jalloh [Vice President at Sierra Leone], Muhammad Yunus [Chair at Yunus Centre, Bangladesh], Paul Farmer [Professor at Global Health and Social Medicine, Harvard Medical School], Vanessa Kerry [Associate professor at Division of Global Health Equity, Brigham and Women’s Hospital], 03 August 2021, “Intellectual property waiver for covid-19 vaccines will advance global health equity," BMJ, [https://www.bmj.com/content/374/bmj.n1837.abstract //](https://www.bmj.com/content/374/bmj.n1837.abstract%20//) ash

Waiver opponents argue that the limited capacity of LMICs to produce complex covid-19 vaccines safely is the true barrier to global production, not IP. They suggest that the TRIPS waiver would penalise drug companies, stifle biomedical innovation, and deter future investments in research and development—in sum, that it would reduce returns on investment and dismantle an IP system that provided the goods needed to end the pandemic. Others are concerned that an IP waiver would fuel supply chain bottlenecks for raw materials and undermine ongoing production. Moreover, policy makers argue that a waiver is unnecessary as company driven voluntary licensing—in which companies decide when and how to license their technologies—and existing TRIPS flexibilities (such as country determined compulsory licensing) should suffice in establishing production in LMICs (table 1). They suggest that waiving IP for covid-19 vaccines would provide no meaningful progress, but the data do not support this.

What effect would a waiver have?

Contrary to detractors’ concerns about the possible effect of a temporary TRIPS waiver, global health analyses suggest that it will be vital to equitable and effective action against covid-19. LMIC’s manufacturing capabilities have been underestimated, even though several LMICs have the scientific and manufacturing capacity to produce complex covid-19 vaccines. India, Egypt, and Thailand are already manufacturing viral vector or mRNA-based covid-19 vaccines,8 -10 and vaccine production lines could be established within months in some other LMICs,11 offering substantial benefit in a pandemic that will last years.11

Companies in India and China have already developed complex pneumococcal and hepatitis B recombinant vaccines, challenging existing vaccine monopolies.12 The World Health Organization launched an mRNA technology transfer hub in April 2021 to provide the logistical, training, and know-how support needed for manufacturers in LMICs to repurpose or expand existing manufacturing capacity to produce covid-19 vaccines and to help navigate accessing IP rights for the technology.13 Twenty five respondents from LMICs expressed interest, and South Africa was selected as the first hub, with plans to start producing the vaccine through the Biovac Institute in the coming months.14 Removing IP barriers through the waiver will facilitate these efforts, more rapidly enable future hubs, engage a greater number of manufacturers, and ultimately yield more doses faster. Moreover, as the waiver facilitates vaccine production, demand for raw materials and active ingredients will increase. Coupled with pre-emptive planning to anticipate and expand raw material production, the waiver—which encompasses the IP of all covid-19 vaccine-related technology— can offer a path to overcome bottlenecks and expand production of necessary vaccine materials.

Current licensing mechanisms inadequate

Voluntary licences have not and will not keep pace with public health demand. Since companies determine the terms of voluntary licences, they are often granted to LMICs that can afford them, leaving out poorer regions.10 For example, in South Asia, AstraZeneca has voluntarily licensed its vaccine to the Serum Institute of India, even though the region has multiple capable vaccine manufacturers.9 Many covid-19 vaccine developers have not taken steps towards licensing their technologies, simply because there is limited financial incentive to do so.11 To date, none have shared IP protected vaccine information with the WHO Covid-19 Technology Access Pool (C-TAP) established last year.15 Relying on the moral compass of companies that answer to shareholders to voluntarily license their technologies will have limited effect on vaccine equity. Their market is driven by profit margins, not public health.

Compulsory licensing by LMICs will also be insufficient in rapidly expanding vaccine production, as each patent licence must be negotiated separately by each country and for each product based on its own merit. From 1995 to 2016, 108 compulsory licences were attempted and only 53 were approved.6 The case-by-case approach is slow and not suitable for a global crisis that requires swift action. In addition, TRIPS requires compulsory licences to be used predominantly for domestic supply, limiting exports of the licensed goods to nearby low income countries without production capacity.5 Although a “special” compulsory licence system was agreed in the Doha declaration to allow for expeditious exportation and importation (formalised as the article 31bis amendment to TRIPS in 2017), the provision is limited by cumbersome logistical procedures and has been rarely used.16 Governments may also be hesitant to pursue compulsory licences as high income countries have previously bullied them for doing so. Since India first used compulsory licensing for sorafenib tosylate in 2012 (reducing the cancer drug’s price by 97%), the US has consistently pressured the country not to use further compulsory licences.17 During this pandemic, Gilead sued the Russian government for issuing a compulsory licence for remdesivir.18

Furthermore, while compulsory licences are primarily for patents, covid-19 vaccines often have other types of IP, including trade secrets, that are integral for production.19 The emergency TRIPS waiver removes all IP as a barrier to starting production (not just patents) and negates the prolonged time, inconsistency, frequent failure, and political pressure that accompany voluntary licensing and compulsory licensing efforts. It also provides an expeditious path for new suppliers to import and export vaccines to countries in need without bureaucratic limitations.

Finally, there is no compelling evidence that the proposed TRIPS waiver would dismantle the IP system and its innovation incentives. The waiver is restricted to covid-19 related goods and is time limited, helping to protect future innovation. It would, however, reduce profit margins on current covid-19 vaccines. With substantial earnings in the first quarter of 2021, many drug companies have already recouped their research and development costs for covid-19 vaccines.20 However, they have not been the sole investors in vaccine development, and they should not be the only ones to profit. Most vaccines received a substantial portion of their direct funding from governments and not-for-profit organisations—and for some, such as Moderna and Novavax, nearly all.21 Decades of publicly funded research have laid the groundwork for current innovations in the background technologies used for vaccines.22 Given that companies were granted upfront risk protection for covid-19 vaccine research and development, a waiver that advances global public health but reduces vaccine profits in a global crisis is reasonable.

### Adv 1

#### The TRIPS waiver marks a watershed in the WTO’s legitimacy – delay crumbles the institution

**Meyer 21** David Meyer [Senior writer at Fortune Magazine], June 18, 2021, "The WTO's survival hinges on the COVID-19 vaccine patent debate, waiver advocates warn," <https://fortune.com/2021/06/18/wto-covid-vaccines-patents-waiver-south-africa-trips/> // ash

However, one crisis is more pressing than the others: the battle over COVID-19 vaccines, and whether the protection of their patents and other intellectual property should be temporarily lifted to boost production and end the pandemic sooner rather than later.

According to some of those pushing for the waiver—which was originally proposed last year by India and South Africa—the WTO's future rests on what happens next.

"The credibility of the WTO will depend on its ability to find a meaningful outcome on this issue that truly ramps-up and diversifies production," says Xolelwa Mlumbi-Peter, South Africa's ambassador to the WTO.

"Final nail in the coffin"

The Geneva-based WTO isn't an organization with power, as such—it's a framework within which countries make big decisions about trade, generally by consensus. It's supposed to be the forum where disputes get settled, because all its members have signed up to the same rules. And one of its most important rulebooks is the Agreement on Trade-Related Aspects of Intellectual Property Rights, or TRIPS, which sprang to life alongside the WTO in 1995.

The WTO's founding agreement allows for rules to be waived in exceptional circumstances, and indeed this has happened before: its members agreed in 2003 to waive TRIPS obligations that were blocking the importation of cheap, generic drugs into developing countries that lack manufacturing capacity. (That waiver was effectively made permanent in 2017.)

Consensus is the key here.

Although the failure to reach consensus on a waiver could be overcome with a 75% supermajority vote by the WTO's membership, this would be an unprecedented and seismic event. In the case of the COVID-19 vaccine IP waiver, it would mean standing up to the European Union, and Germany in particular, as well as countries such as Canada and the U.K.—the U.S. recently flipped from opposing the idea of a waiver to supporting it, as did France.

It's a dispute between countries, but the result will be on the WTO as a whole, say waiver advocates.

"If, in the face of one of humanity's greatest challenges in a century, the WTO functionally becomes an obstacle as in contrast to part of the solution, I think it could be the final nail in the coffin" for the organization, says Lori Wallach, the founder of Public Citizen's Global Trade Watch, a U.S. campaigning group that focuses on the WTO and trade agreements.

"If the TRIPS waiver is successful, and people see the WTO as being part of the solution—saving lives and livelihoods—it could create goodwill and momentum to address what are still daunting structural problems."

#### Alt cause arguments are wrong

**Dubey 21** Vivek Dubey [Editor at India Today], 9-13-2021, "Delay in TRIPS waiver costs 2 million more lives; will harm WTO's credibility, warns India," [https://www.businesstoday.in/latest/trends/story/delay-in-trips-waiver-costs-2-million-more-lives-will-harm-wto-credibility-warns-india-298221-2021-06-01 //](https://www.businesstoday.in/latest/trends/story/delay-in-trips-waiver-costs-2-million-more-lives-will-harm-wto-credibility-warns-india-298221-2021-06-01%20//) ash

India has urged the World Trade Organisation (WTO) to end uncertainty around the Trade-Related Aspects of Intellectual Property Rights (TRIPS) waiver for COVID-19 vaccines and drugs proposal and begin text-based negotiations.

"Our indecisiveness to act swiftly on removing Intellectual Property (IP) barriers to ramp up production of COVID-19 vaccines, therapeutics and diagnostics have cost us 2 million more lives," said Brajendra Navnit, India's Ambassador to WTO, at the informal meeting of TRIPS members.

"We often hear that the WTO is losing its relevance and credibility, well, if WTO does not deliver during the pandemic on the issues and agreements for which it bears responsibility, and to think that by concluding the fisheries negotiation alone amidst these difficult times will the WTO reinstate its credibility and relevance, would be a grave mistake," the Indian envoy said.

India, along with the co-sponsors of the waiver proposal, believes the TRIPS waiver is a necessary and temporary legal measure for removing IP barriers needed to boost the production of vaccines.

A total of 63 nations, including India, are in support of the proposal at the WTO, while the United Kingdom, Australia, Singapore and countries of the European Union are in opposition. Agreements at the WTO require consensus among all 164 member states.

"Not allowing text-based negotiations will do more harm to the WTO's credibility and this collective failure will be remembered by posterity," India added.

#### Scenario 1 is climate change

#### A strong world trading system is key to combating climate change – the WTO’s involvement is crucial

Azevêdo 15 [(Roberto Azevêdo was the sixth Director-General of the WTO. His appointment took effect on 1 September 2013 for a four-year term. In February 2017, WTO members reappointed him for a second term, which began on 1 September 2017. He stepped down as Director-General a year before the expiry of his mandate.)Guardian, 11-23-2015, "World trade has an important role in combating climate change," <https://www.theguardian.com/business/economics-blog/2015/nov/23/world-trade-important-role-low-carbon-economy-wto>] ED

Like most economic activity, trade is often linked to carbon emissions, but the world cannot stop trading – not least as trade is essential in achieving many other shared goals. Trade can help to improve the efficiency of production, it can improve food security and, above­ all, it has proven to be one of the best anti-­poverty tools in history. Trade played a key role in helping us reach the [millennium development goal to cut extreme poverty by half](https://www.theguardian.com/global-development/2015/jul/06/united-nations-extreme-poverty-millennium-development-goals)– and it is a cross-­cutting element in many of the new [sustainable development goals](https://www.theguardian.com/global-development/sustainable-development-goals) agreed at the UN in September, so this work will continue.

**The challenge is not to stop trading but to ensure that trade is an ally in the fight against climate change.** We need to create a virtuous circle of trade and environmental policies which promote sustainable production and consumption while being pro­-growth and development.

It is just over 20 years since the signing of the United Nations Framework Convention on Climate Change in 1992 – and it is exactly 20 years since the WTO was created. The world has witnessed a profound transformation in the debate on trade and the environment since then – and a degree of convergence between the two. While international trade flows have increased dramatically over this period, the green economy has been built into business models and investment in renewable energy has been mainstreamed. Standards and technical regulations, which are so vital for the functioning of markets and trade, have followed suit with strengthened environmental requirements.

So how can we ensure that trade policy plays its full part in future? First, **we must improve the dissemination of and access to climate­-friendly technologie**s, **goods and services which support the transition towards a low­ carbon economy.** In some countries, import tariffs on products such as solar water heaters are over 20%, and wind turbines over 15% –­ much higher than the average tariff of 9%. **Making environmental goods and services cheaper and more accessible would help countries to leapfrog outmoded technologies and move quickly to apply climate-­friendly alternatives.**

A **group of WTO members**, who account for the majority of global trade in environmental goods, are negotiating an environmental goods agreement to lower their trade barriers on a number of important environmental products. **Success here would help to disseminate cutting-­edge technologies,** such as those identified by the Intergovernmental Panel on Climate Change (IPCC), at much lower costs while **also stimulating innovation and strengthening the green economy around the world. Although these tariff reductions are being taken forward by a group of WTO members, the benefits would apply to the whole WTO membership.**

Second, we can make trade more efficient overall. Trade is often linked to carbon emissions – particularly through international transportation. Although 80% of trade volume utilises sea transport which has the lowest level of emissions of any form of transport, there is scope to do more. The International Maritime Organisation and the International Civil Aviation Organisation are working to find a global solution to emissions in the maritime and aviation sectors – and we should support these efforts. By streamlining customs processes, we also can reduce some transport emissions and cut the energy required to keep perishable goods fresh while they wait to cross the border.

The WTO’s trade facilitation agreement will deliver this while also helping businesses to grow – green businesses included – and reducing trading costs by over 14% on average, and more for the poorest countries. Associated with every environmental good is a dense value chain of other goods and services suppliers. **A wind turbine, for instance, consists of more than 8,000 component parts. Cutting the time that it takes to move these parts across borders would lower costs and help make climate ­friendly technologies more available. I hope that green businesses will use this opportunity.**

The international community is facing a historic test. We must ensure that the trade, development and environmental agendas complement each other. I am optimistic that we will rise to the challenge.

#### Slated WTO reforms solve climate change – success is contingent on the institution’s legitimacy

**Worland 20** Justin Worland [Justin Worland is a Washington D.C.-based senior correspondent for TIME covering climate change and the intersection of policy, politics and society], 7-15-2020, "Ngozi Okonjo-Iweala Believes the WTO Can Change the World. But First It Needs Reform," Time, <https://time.com/5938816/ngozi-okonjo-iweala-wto-climate-change/> // ash

On its surface, the mandate of the World Trade Organization is relatively circumscribed: to make and enforce the rules of the road for global trade and resolve problems when they arise.

Ngozi Okonjo-Iweala has much loftier goals for the organization she is expected to take the helm of next week—the first woman to ever hold the position of WTO director-general. She tells TIME that global trade can help ease the COVID-19 pandemic, tackle climate change and restore faith in the system of cooperation that has faltered in recent years. The WTO has a central role to play as facilitator, Okonjo-Iweala says. “If the WTO did not exist,” she says, “you would have to invent it.”

But to get the WTO to a place where it can execute on that agenda will take some work. And the only way to get the WTO back on track, she says, is to remake the institution. “The world needs the WTO,” she said in a Jan. 29 interview with TIME over Zoom. “And the WTO needs extensive and serious reform.”

Okonjo-Iweala was born in Nigeria in 1954, then under British colonial control, and received her primary education there before coming to the U.S. to study, first as an undergraduate at Harvard and later a PhD student at MIT. She worked in the U.S. after graduating, addressing the challenges posed to economies in the Global South while working as a development economist at the World Bank. In 2003, she began a three-year stint as Nigeria’s finance minister; she returned again to reprise that role in 2011. In Nigeria, she earned a reputation as a corruption fighter as well as an artful dealmaker, helping negotiate a write off of $18 billion in national debt. Since then she’s been a fixture on the international stage, speaking frequently on issues like climate change, public health and global development.

It’s in part this experience in the U.S. and Nigeria—she describes herself as “someone who has lived both realities”—that Okonjo-Iweala and her supporters say makes her well-suited to run the WTO in this particular moment. “There’s much mistrust within the WTO: it’s not just between the U.S. and China. It’s between the U.S. and Europe; it’s between Europe and China; it’s between developing and developed countries,” Okonjo-Iweala said. “Bridging the gap among all these groups, I think, is something that I can really bring.”

Okonjo-Iweala’s accession to the top spot at the WTO follows a long and winding process. The previous head stepped down in August, and Okonjo-Iweala emerged as the favorite of the organization’s 160-plus member states in October. Still, the Trump Administration unilaterally blocked her candidacy, one of a series of actions from the former president that stymied the organization. On Feb. 5, Biden trade officials expressed “strong support,” and Okonjo-Iweala became the presumptive next WTO director-general.

Cleaning up the immediate mess left behind by Trump will inevitably be high on Okonjo-Iweala’s agenda. Trump blocked new appointments to the WTO’s appellate body, leaving it unable to rule on trade disputes and effectively giving Trump’s tariffs a free pass. Okonjo-Iweala said the panel is ripe for change. “There’s criticism of the appellate body, the dispute settlement system,” she said. “That needs to be taken care of and reformed to a point where all members, big and small, believe and trust in the system and can use it.”

But Okonjo-Iweala is looking far beyond the Trump Administration as she considers how to restore faith in the WTO. In part that means looking backward to the organization’s founding. Okonjo-Iweala noted that many of the countries subject to WTO rules today were under colonial rule when the current international financial regime was established after World War II. “I think multilateralism itself has been under attack for some time—and I think that attack intensified in the last four years—but it’s been under attack because these institutions like the WTO were developed 76-77 years ago,” she said. “There are questions about the rules: how does this work? Is this fit for purpose?”

This means finding ways to ensure that small developing countries benefit as much from global trade as their wealthier counterparts. “They need a level playing field,” she said.

Reforming the WTO also means looking forward to address challenges unimaginable in 1947 when countries signed the General Agreement on Tariffs and Trade, an international agreement that served as a precursor to the WTO. Chief among them is the warming planet and all of the attendant challenges. Climate change isn’t officially included as part of the WTO’s mandate, but the agency could take on outsized importance for the global climate agenda as a growing number of countries consider trade barriers for high-carbon products from countries without a comprehensive climate program.

Opponents of such measures say they fly in the face of the principles of free trade and are likely to be struck down by the WTO, but Okonjo-Iweala said that if constructed carefully they could offer an important solution. “I don’t see anything in the WTO rules that is against them,” she said. “But then again you have to be careful how they are put into the rules so that they are applied in a way that is fair and that works.”

Okonjo-Iweala has spent recent years as a co-chair of Global Commission on the Economy and Climate, an initiative of former high-ranking government officials, executives and members of civil society working to make climate change a central consideration in global economic policy. She sees working at the WTO as an avenue to further that push. When asked about the link between climate change and trade, she said that policymakers should consider policies to address the climate implications of the logistics conducting trade—namely, how goods are transported—as well as the carbon-content of traded goods themselves. In particular, she calls for a carbon tax, which she said “could be seen by finance ministers as another way of bringing in additional revenue whilst encouraging better economic behavior with respect to climate change.”

While climate is a clear focus for Okonjo-Iweala, the response to the COVID-19 pandemic got her the most animated during our 45-minute conversation. In December, Okonjo-Iweala wrapped up a five-year term leading the board of GAVI, the global alliance that helps developing countries secure access to vaccines. The organization, which works to distribute vaccines for diseases like measles, pivoted quickly last year to work on COVID-19 vaccine access in the developing world. Today, there’s a significant gap in access to the vaccines between developed and developing countries despite commitments from leaders in the Global North to support wide access. The WTO, Okonjo-Iweala said, can help ensure that vaccines and other treatments make it across the globe by pushing back against trade restrictions designed to keep supplies at home even when they’re needed elsewhere, and by working “with other organizations to improve accessibility and affordability of vaccines, therapeutics and diagnostics.”

After all, she said, like most everything else we consume, “these are traded products.”

#### Climate change causes extinction --- latest studies.

Sprat and Dunlop 19 (David Spratt and Ian Dunlop, \*Research Director for Breakthrough National Centre for Climate Restoration and co-author of *Climate Code Red: The case for emergency action*; \*\*member of the Club of Rome AND formerly an international oil, gas and coal industry executive, chairman of the Australian Coal Association, chief executive of the Australian Institute of Company Directors, and chair of the Australian Greenhouse Office Experts Group on Emissions Trading, "Existential climate-related security risk: A scenario approach," Breakthrough National Centre for Climate Restoration, 5-30-2019, https://docs.wixstatic.com/ugd/148cb0\_90dc2a2637f348edae45943a88da04d4.pdf, Date Accessed: 7-5-2019, SB)

2050: By 2050, there is broad scientific acceptance that system tipping-points for the West Antarctic Ice Sheet and a sea-ice-free Arctic summer were passed well before 1.5°C of warming, for the Greenland Ice Sheet well before 2°C, and for widespread permafrost loss and large-scale Amazon drought and dieback by 2.5°C. The “hothouse Earth” scenario has been realised, and Earth is headed for another degree or more of warming, especially since human greenhouse emissions are still significant. While sea levels have risen 0.5 metres by 2050, the increase may be 2–3 metres by 2100, and it is understood from historical analogues that seas may eventually rise by more than 25 metres. 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, beyond the threshold of human survivability. The destabilisation of the Jet Stream has very significantly affected the intensity and geographical distribution of the Asian and West African monsoons and, together with the further slowing of the Gulf Stream, is impinging on life support systems in Europe. North America suffers from devastating weather extremes including wildfires, heatwaves, drought and inundation. The summer monsoons in China have failed, and water flows into the great rivers of Asia are severely reduced by the loss of more than one-third of the Himalayan ice sheet. Glacial loss reaches 70 percent in the Andes, and rainfall in Mexico and central America falls by half. Semi-permanent El Nino conditions prevail. Aridification emerges over more than 30 percent of the world’s land surface. Desertification is severe in southern Africa, the southern Mediterranean, west Asia, the Middle East, inland Australia and across the south-western United States. Impacts: A number of ecosystems collapse, including coral reef systems, the Amazon rainforest and in the Arctic. Some poorer nations and regions, which lack capacity to provide artificially-cooled environments for their populations, become unviable. Deadly heat conditions persist for more than 100 days per year in West Africa, tropical South America, the Middle East and South-East Asia, which together with land degradation and rising sea levels contributes to 21 perhaps a billion people being displaced. Water availability decreases sharply in the most affected regions at lower latitudes (dry tropics and subtropics), affecting about two billion people worldwide. Agriculture becomes nonviable in the dry subtropics. Most regions in the world see a significant drop in food production and increasing numbers of extreme weather events, including heat waves, floods and storms. Food production is inadequate to feed the global population and food prices skyrocket, as a consequence of a one-fifth decline in crop yields, a decline in the nutrition content of food crops, a catastrophic decline in insect populations, desertification, monsoon failure and chronic water shortages, and conditions too hot for human habitation in significant food-growing regions. The lower reaches of the agriculturally-important river deltas such as the Mekong, Ganges and Nile are inundated, and significant sectors of some of the world’s most populous cities — including Chennai, Mumbai, Jakarta, Guangzhou, Tianjin, Hong Kong, Ho Chi Minh City, Shanghai, Lagos, Bangkok and Manila — are abandoned. Some small islands become uninhabitable. Ten percent of Bangladesh is inundated, displacing 15 million people. According to the Global Challenges Foundation’s Global Catastrophic Risks 2018 report, even for 2°C of warming, more than a billion people may need to be relocated due to sea-level rise, and In high-end scenarios “the scale of destruction is beyond our capacity to model, with a high likelihood of human civilisation coming to an end”. 22

#### Scenario 2 is trade

#### A revitalized WTO checks rampant protectionism - lackluster leadership risks trade disputes and a new nationalist world economy

**Solís 20** Mireya Solís [Director at Center for East Asia Policy Studies, Senior Fellow at Foreign Policy, Center for East Asia Policy Studies Philip Knight Chair in Japan Studies], 7-10-2020, "The post COVID-19 world: Economic nationalism triumphant?," Brookings, <https://www.brookings.edu/blog/order-from-chaos/2020/07/10/the-post-covid-19-world-economic-nationalism-triumphant/> // ash

The damage caused by the worst global health crisis in a century is vast. The new coronavirus has traveled far and fast, infecting more than 8.7 million people and killing more than 460,000. One after another, economies have gone into lockdown to slow down the spread of the disease. The combined supply and demand shocks have ravaged the world economy with the most severe downturn since the Great Depression; anticipated drops to international trade and investment flows of 30% and 40%, respectively; and unemployment spikes in many countries. The pandemic has cost lives and livelihoods and has erased the chances of returning to the status quo ante, but it has also brought little clarity regarding what kind of international order it will usher in. Is the future one of deglobalization, decoupling, and reshoring of economic activity?

The pandemic hit an already wounded multilateral trading system. The chances that the World Trade Organization (WTO) can deliver a multilateral round of trade negotiations to slash tariffs across the board and update the trade and investment rulebook are nil. But the WTO has also lost its central role as arbiter of trade disputes among its members. In December 2019, the Appellate Body ceased to function due to the U.S. block of new appointments, citing judicial overreach. At a time of rising protectionism, the erosion of a rules-based mechanism to adjudicate disputes bodes ill.

Longstanding challenges to the WTO have been exacerbated by an abdication of leadership from the great powers to ensure its survival. China has been the godchild of globalization, leveraging its accession to the WTO to become workshop for the world and a huge domestic market coveted by foreign firms. But China lost its appetite for economic reform, reinvesting on a state capitalism model that imposes heavy costs on other nations. Unchecked subsidies and privileges awarded to its state-owned enterprises, insufficient protection of intellectual property, foreign investment restrictions, forced technology transfers, and cyber protectionism all make the Chinese government’s self-proclamation as champion of global free trade ring hollow.

The Trump administration judges the WTO incapable of tackling the China challenge, but instead of creating coalitions of like-minded countries to bring about effective multilateral trade governance, it appears determined to further cripple the international organization. It has offered no blueprint to fix the dispute settlement mechanism, has abused the national security exemption to raise tariffs against allies, and is gearing up for its most fundamental assault to date on the WTO: a tariff reset through which the U.S. may unilaterally abandon its commitments on bound tariffs and apply larger duties to force other countries to open their markets. Trade spats as other countries retaliate in kind is a more likely result.

Tariff wars and the battle for technology supremacy have come to define U.S.-China great power competition. After a grueling trade conflict, the United States and China reached a limited trade agreement in January 2020. The deal marked a pause in the tariff war and addressed some non-tariff barriers on foreign direct investment and intellectual property; but it left intact the core of Chinese industrial policy (public subsidies and state-owned enterprises) and retained U.S. duties on $360 billion worth of Chinese products. China’s massive purchase commitments ($200 billion) were quickly rendered unattainable by the severe economic downturn in China due to COVID-19.

In fighting for the new economic order, setting standards on cutting-edge technologies will be at the forefront. China is using all the levers of industrial policy to gain technological primacy in areas like AI and quantum computing. Telecom and the battle over 5G offer a preview of quarrels to come. Deeply concerned with the cybersecurity risks that Chinese telecom giants like Huawei pose, the U.S. government placed the company on its Entity List, banning American exports without a license. It has since tightened the restrictions by barring foreign companies from supplying Huawei with products manufactured with American equipment and technology. National security concerns are increasingly encroaching on existing webs of economic interdependence. Wary of China’s acquisition of critical technology, countries like the United States, Australia, and Japan have tightened their screening of foreign direct investment. The pandemic has only exacerbated concerns that weakened companies in strategic sectors are at risk of foreign takeover.

COVID-19’s impact on the international trading system is twofold. It has reinforced existing trends such as the deceleration and now drop in the volume of international trade, the rise of economic security as governments expand their toolkit to restrict trade and investment flows, and it has laid bare the fallout in U.S.-China relations. But the pandemic also brought new challenges that exposed the extent to which trade cooperation is in short supply. Export protectionism has risen in prominence with national restrictions on shipments of essential medical supplies and personal protective equipment. The WTO allows for such curbs for public health purposes – provided the measures are temporary and transparent. Few countries, however, have bothered to comply with their notification commitments. The blow comes at a time when the WTO is adrift with the decision of Director General Roberto Azevedo to step down early, opening the search for new leadership in a climate of divisiveness.

Are we on the eve of a renationalized world economy? That is the aspiration of several American and European public officials who fault extended global supply chains and overdependence on China for the current mishaps in tackling the pandemic. But the view that economic nationalism and reshoring of manufacturing is a fail-safe path to security and prosperity is wrong. For one, it skirts the responsibility of governments to properly stockpile essential medical supplies. Furthermore, the export curbs will be counterproductive, eliminating incentives for producers to expand capacity and increasing the cost of much needed medicines and medical devices. If the recent lockdowns have taught us anything, it is that exclusive reliance on the domestic market is too risky. Diversification of supply, redundancies in the manufacturing chain, and stockpiling programs are better alternatives. In this endeavor, global supply chains are part of the solution, not the problem.

COVID-19 will not produce an exodus of foreign companies from the Chinese market. Recent surveys of American companies with operations in China show that most firms intend to stay put. A February survey of Japanese companies conducted by Tokyo Shoko Research shows that only a fraction (4%) are considering exit from China. Therefore, the Japanese government’s $2.2 billion fund to restructure supply chains should be understood as risk management, not decoupling. When international companies map out their business strategies, they must factor in heightened risks – protectionism, national security controls, and economic lockdowns. Hence, efforts by middle powers to offer an interim arbitration mechanism at the WTO to handle trade disputes and to commit to maintaining open supply chains in essential medical goods are the right antidote to rising economic nationalism. As a staunch supporter of rules-based trade and with its decision to forego export protectionism in the current crisis, Japan has much to contribute to these efforts.

#### Trade lessens the intensity and quantity of wars---best and most recent studies prove

Julian Adorney 13, economic historian, entrepreneur, and contributor for the Ludwig von Mises Institute. He’s citing Professor McDonald who teaches courses on international relations theory, international political economy, and international security at University of Texas at Austin. (, Foundation for Economic Education, “Want Peace? Promote Free Trade”, 10/15, [http://www.fee.org/the\_freeman/detail/want-peace-promote-free-trade](http://www.fee.org/the_freeman/detail/want-peace-promote-free-trade)//jk)

Frédéric Bastiat famously claimed that “if goods don’t cross borders, soldiers will." Bastiat argued that free trade between countries could reduce international conflict because trade forges connections between nations and gives each country an incentive to avoid war with its trading partners. If every nation were an economic island, the lack of positive interaction created by trade could leave more room for conflict. Two hundred years after Bastiat, libertarians take this idea as gospel. Unfortunately, not everyone does. But as recent research shows, the historical evidence confirms Bastiat’s famous claim. To Trade or to Raid In “Peace through Trade or Free Trade?” professor Patrick J. McDonald, from the University of Texas at Austin, empirically tested whether greater levels of protectionism in a country (tariffs, quotas, etc.) would increase the probability of international conflict in that nation. He used a tool called dyads to analyze every country’s international relations from 1960 until 2000. A dyad is the interaction between one country and another country: German and French relations would be one dyad, German and Russian relations would be a second, French and Australian relations would be a third. He further broke this down into dyad-years; the relations between Germany and France in 1965 would be one dyad-year, the relations between France and Australia in 1973 would be a second, and so on. Using these dyad-years, McDonald analyzed the behavior of every country in the world for the past 40 years. His analysis showed a negative correlation between free trade and conflict: The more freely a country trades, the fewer wars it engages in. Countries that engage in free trade are less likely to invade and less likely to be invaded. The Causal Arrow Of course, this finding might be a matter of confusing correlation for causation. Maybe countries engaging in free trade fight less often for some other reason, like the fact that they tend also to be more democratic. Democratic countries make war less often than empires do. But McDonald controls for these variables. Controlling for a state’s political structure is important, because democracies and republics tend to fight less than authoritarian regimes. McDonald also controlled for a country’s economic growth, because countries in a recession are more likely to go to war than those in a boom, often in order to distract their people from their economic woes. McDonald even controlled for factors like geographic proximity: It’s easier for Germany and France to fight each other than it is for the United States and China, because troops in the former group only have to cross a shared border. The takeaway from McDonald’s analysis is that protectionism can actually lead to conflict. McDonald found that a country in the bottom 10 percent for protectionism (meaning it is less protectionist than 90 percent of other countries) is 70 percent less likely to engage in a new conflict (either as invader or as target) than one in the top 10 percent for protectionism. Protectionism and War Why does protectionism lead to conflict, and why does free trade help to prevent it? The answers, though well-known to classical liberals, are worth mentioning. First, trade creates international goodwill. If Chinese and American businessmen trade on a regular basis, both sides benefit. And mutual benefit disposes people to look for the good in each other. Exchange of goods also promotes an exchange of cultures. For decades, Americans saw China as a mysterious country with strange, even hostile values. But in the 21st century, trade between our nations has increased markedly, and both countries know each other a little better now. iPod-wielding Chinese teenagers are like American teenagers, for example. They’re not terribly mysterious. Likewise, the Chinese understand democracy and American consumerism more than they once did. The countries may not find overlap in all of each other’s values, but trade has helped us to at least understand each other. Trade helps to humanize the people that you trade with. And it’s tougher to want to go to war with your human trading partners than with a country you see only as lines on a map. Second, trade gives nations an economic incentive to avoid war. If Nation X sells its best steel to Nation Y, and its businessmen reap plenty of profits in exchange, then businessmen on both sides are going to oppose war. This was actually the case with Germany and France right before World War I. Germany sold steel to France, and German businessmen were firmly opposed to war. They only grudgingly came to support it when German ministers told them that the war would only last a few short months. German steel had a strong incentive to oppose war, and if the situation had progressed a little differently—or if the German government had been a little more realistic about the timeline of the war—that incentive might have kept Germany out of World War I. Third, protectionism promotes hostility. This is why free trade, not just aggregate trade (which could be accompanied by high tariffs and quotas), leads to peace. If the United States imposes a tariff on Japanese automobiles, that tariff hurts Japanese businesses. It creates hostility in Japan toward the United States. Japan might even retaliate with a tariff on U.S. steel, hurting U.S. steel makers and angering our government, which would retaliate with another tariff. Both countries now have an excuse to leverage nationalist feelings to gain support at home; that makes outright war with the other country an easier sell, should it come to that. In socioeconomic academic circles, this is called the Richardson process of reciprocal and increasing hostilities; the United States harms Japan, which retaliates, causing the United States to retaliate again. History shows that the Richardson process can easily be applied to protectionism. For instance, in the 1930s, industrialized nations raised tariffs and trade barriers; countries eschewed multilateralism and turned inward. These decisions led to rising hostilities, which helped set World War II in motion. These factors help explain why free trade leads to peace, and protectionism leads to more conflict. Free Trade and Peace One final note: McDonald’s analysis shows that taking a country from the top 10 percent for protectionism to the bottom 10 percent will reduce the probability of future conflict by 70 percent. He performed the same analysis for the democracy of a country and showed that taking a country from the top 10 percent (very democratic) to the bottom 10 percent (not democratic) would only reduce conflict by 30 percent. Democracy is a well-documented deterrent: The more democratic a country becomes, the less likely it is to resort to international conflict. But reducing protectionism, according to McDonald, is more than twice as effective at reducing conflict than becoming more democratic. Here in the United States, we talk a lot about spreading democracy. We invaded Iraq partly to “spread democracy.” A New York Times op-ed by Professor Dov Ronen of Harvard University claimed that “the United States has been waging an ideological campaign to spread democracy around the world” since 1989. One of the justifications for our international crusade is to make the world a safer place. Perhaps we should spend a little more time spreading free trade instead. That might really lead to a more peaceful world.

#### Independently, protectionism causes great power competition and militarized regionalism.

Lake 18. [(David Lake is a Professor of Social Sciences and Distinguished Professor of Political Science at the University of California, San Diego. "Economic Openness and Great Power Competition: Lessons for China and the United States,” April 30, 2018. https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=3171196/] TDI

I develop two central arguments. First, historically, great power competition has been driven primarily by exclusion or fears of exclusion from each power’s international economic zone, including its domestic market. Great powers in the past have often used their international influence to build zones in which subordinate polities – whether these be colonies or simply states within a sphere of influence – are integrated into their economies. These economic zones, in turn, are typically biased in favor of the great power’s firms and investors, with the effect of excluding (in whole or part) the economic agents of other great powers. These other great powers, in response, are then compelled to develop or expand their own exclusive economic zones. The “race” for economic privilege can quickly divide the world up into economic blocs. Like the security dilemma, great powers need not actually exclude one another from their zones; the fear of exclusion alone is enough to ignite the process of division. The race for privilege then draws great powers into over-expanding into unprofitable regions and, more important, militarized competition. Economic and military competition are thus linked, with the former usually driving the latter. The most significant military crises have, historically, been over where to draw the boundaries between economic zones and subsequent challenges to those boundaries. Economic closure and fear of closure have been consistent sources of great power conflict in the past – and possibly will be in the future. The major exception to this trend was the peaceful transfer of dominance in Latin America from Britain to the United States in the late nineteenth century. This suggests that economic closure and great power competition is not inevitable, but a choice of the great powers themselves. Second, this international competition is driven, in turn, by domestic, rent-seeking groups and their economic interests. In all countries, scarce factors of production, import competing sectors, and domestically-oriented firms have concentrated and intense preferences for market restricting policies, including tariffs and the formation of exclusive economic zones. Consumers and free trade-oriented groups have diffuse preferences for market enhancing policies, and thus tend to lose at the ballot box and in the making of national policy. This inequality in preference intensity does not mean protectionists always win; after 1934, the United States insulated itself by shifting authority to the executive and negotiating reductions through broad, multi-product international agreements.8 Yet, as the recent return to economic nationalism of the Trump administration suggests, protectionism often wins out. Rent-seeking is a central tendency, not an inevitable success. Contemporary great power relations are at a critical juncture. As China’s influence expands, the role of special economic interests in China is especially worrisome. In pursuit of stability, political support, or private gains, the government will always be tempted to create economic zones that favor its nationals. In this way, China will be no different than the majority of great powers before it. But, given the expansive role of the state in the Chinese economy, especially its backing of outward foreign investments by its state-owned enterprises (SOEs), and the close ties between business elites and its authoritarian political leaders, however, it will be even harder for China to resist biasing any future economic zone to benefit its own firms. Although China has gained greatly from economic openness, its domestic political system will be prone to rent-seeking demands by important constituents in areas of future influence. Critically, the United States is also moving toward economic closure with the election of President Trump on a platform of economic nationalism. Demands for protection against Chinese goods have been growing over time.9 The “China shock” that followed Beijing’s joining the World Trade Organization was a huge disruption to the international division of labor, U.S. comparative advantage, and especially U.S. industry.10 The Trans-Pacific Partnership, though now defunct, was “marketed” by President Barak Obama as a means of “containing” China, both economically and militarily, but was opposed by virtually all of the candidates in the 2016 presidential election for its trade-enhancing potential. President Trump has already signaled a much more hostile and protectionist stance toward China – as well as calling for the repeal of NAFTA and even questioning the utility of the European Union. Not only has he imposed tariffs on washing machines, solar panels, steel and aluminum, dangerously declaring the latter two issues of national security, he is making exceptions on these tariffs for friends and allies. 11 Implicitly targeting China, these protectionist moves by the administration risk creating preferential trading blocs not seen since the 1930s. He has also now proposed punitive tariffs on over $60 billions of imports from China into the United States.12 Acknowledging his inconsistencies on many policy issues, Trump’s economic nationalism has remained the core of his political agenda. The threat to the liberal international economy is not only that China might seek an economic bloc in the future, but that the United States itself is turning more exclusionary. For each great power to fear that the other might seek to exclude it from its economic zone is not unreasonable. If so, great power competition could break out in the twenty-first century not because of bipolarity or any inevitable tendency toward conflict, but because neither great power can control its own protectionist forces nor signal to the other that it would not exclude it from its economic zone. The British-U.S. case, again, suggests that exclusion and competition are not inevitable, but the current danger of economic closure is real and increasing. This article is synthetic in its theory and merely suggestive in its use of historical evidence. The theory aims to integrate current work on political economy and national security, not to develop a completely original take on this relationship. In turn, rather than testing the theory in any rigorous sense or delving into particular cases to show the theoretical mechanisms at work, so to speak, it surveys selected historical episodes to illustrate central tendencies. It is the recurring pattern across multiple cases that suggests why we should worry today. The remainder of this essay is divided in three primary sections. Section I briefly outlines the analytics of economic openness and great power competition. Section II focuses on historical instances of great power competition, highlighting the role of economic openness as a central cleavage in international politics. Section III examines contemporary policies in and between China and the United States. The conclusion suggests ways that the potential for conflict may be mitigated. The Open Economy Politics of Great Power Competition All states have a tendency towards protectionism at home and exclusive economic zones abroad. A tendency, though, is not an inevitability. The pursuit of protection and economic zones by domestic interests is conditioned by the political coalition in power at any given time and institutions that aggregate and bias the articulation of social groups. 13 The tendency is also influenced, however, by the actions of other countries. Protectionism can sour great power relations, but it is the desire for exclusive economic zones that drives great power competition and, given the possibility of coercion, influences grand strategy. Thus, the theory sketched here integrates insights from international political economy (see below), the literature on domestic politics and grand strategy,14 and systemic theories of international relations.15

#### Nuclear war causes extinction – famine and climate change

Starr 18 [(Steven, the director of the University of Missouri’s Clinical Laboratory Science Program, as well as a senior scientist at the Physicians for Social Responsibility. He has worked with the Swiss, Chilean, and Swedish governments in support of their efforts at the United Nations to eliminate thousands of high-alert, launch-ready U.S. and Russian nuclear weapons; he maintains the website Nuclear Darkness.) “Consequences of a Single Failure of Nuclear Deterrence” PSR, University of Missouri, 5/2018. <https://www.psr.org/wp-content/uploads/2018/05/consequences-single-failure-nuclear-deterrence.pdf>] BC

Only a single failure of nuclear deterrence is required to start a nuclear war, and the consequences of such a failure would be profound. Peer-reviewed studies predict that less than 1% of the nuclear weapons now deployed in the arsenals of the Nuclear Weapon States, if detonated in urban areas, would immediately kill tens of millions of people, and cause long term, catastrophic disruptions of the global climate and massive destruction of Earth’s protective ozone layer. The result would be a global nuclear famine that could kill up to one billion people. A full-scale war, fought with the strategic nuclear arsenals of the United States and Russia, would so utterly devastate Earth’s environment that most humans and other complex forms of life would not survive.

Yet no Nuclear Weapon State has ever evaluated the environmental, ecological or agricultural consequences of the detonation of its nuclear arsenals in conflict. Military and political leaders in these nations thus remain dangerously unaware of the existential danger which their weapons present to the entire human race. Consequently, nuclear weapons remain as the cornerstone of the military arsenals in the Nuclear Weapon States, where nuclear deterrence guides political and military strategy.

Those who actively support nuclear deterrence are trained to believe that deterrence cannot fail, so long as their doctrines are observed, and their weapons systems are maintained and continuously modernized. They insist that their nuclear forces will remain forever under their complete control, immune from cyberwarfare, sabotage, terrorism, human or technical error. They deny that the short 12-to-30 minute flight times of nuclear missiles would not leave a President enough time to make rational decisions following a tactical, electronic warning of nuclear attack.

The U.S. and Russia continue to keep a total of 2000 strategic nuclear weapons at launch ready status – ready to launch with only a few minutes warning. Yet both nations are remarkably unable to acknowledge that this high-alert status in anyway increases the probability that these weapons will someday be used in conflict. How can strategic nuclear arsenals truly be “safe” from accidental or unauthorized use, when they can be launched literally at a moment’s notice? A cocked and loaded weapon is infinitely easier to fire than one which is unloaded and stored in a locked safe.

The mere existence of immense nuclear arsenals, in whatever status they are maintained, makes possible their eventual use in a nuclear war. Our best scientists now tell us that such a war would mean the end of human history. We need to ask our leaders: Exactly what political or national goals could possibly justify risking a nuclear war that would likely cause the extinction of the human race?

However, in order to pose this question, we must first make the fact known that existing nuclear arsenals – through their capacity to utterly devastate the Earth’s environment and ecosystems – threaten continued human existence. Otherwise, military and political leaders will continue to cling to their nuclear arsenals and will remain both unwilling and unable to discuss the real consequences of failure of deterrence. We can and must end the silence, and awaken the peoples of all nations to the realization that “nuclear war” means “global nuclear suicide”.

### Adv 2

#### **The waiver sets an essential precedent for future pandemic prevention**

Lindsey 6/3 Brink Lindsey [Brink Lindsey is Vice President and Director of the Open Society Project at the Niskanen Center. Previously he was the Cato Institute's vice president for research], 6/3/2021, “Why intellectual property and pandemics don’t mix”, <https://www.brookings.edu/blog/up-front/2021/06/03/why-intellectual-property-and-pandemics-dont-mix/> //kangu

Waiving patent protections is certainly no panacea. What is needed most urgently is a [massive drive of technology transfer](https://thehill.com/opinion/healthcare/553368-waiving-patents-isnt-enough-we-need-technology-transfer-to-defeat-covid), capacity expansion, and supply line coordination to bring vaccine supply in line with global demand. Dispensing with patents in no way obviates the need for governments to fund and oversee this effort.

Although focusing on these immediate constraints is vital, we cannot confine our attention to the short term. First of all, the COVID-19 pandemic is far from over. Although Americans can now see the light at the end of the tunnel thanks to the rapid rollout of vaccines, most of the world isn’t so lucky. The virus is [currently raging in India and throughout South America](https://www.nytimes.com/interactive/2021/world/covid-cases.html), overwhelming health care systems and inflicting suffering and loss on a horrific scale. And consider the fact that Australia, which has been successful in suppressing the virus, recently announced it was sticking to plans to keep its borders closed until mid-2022. Criticisms of the TRIPS waiver that focus only on the next few months are therefore short-sighted: this pandemic could well drag on long enough for elimination of patent restrictions to enable new vaccine producers to make a positive difference.

Furthermore, and probably even more important, this is almost certainly not the last pandemic we will face. Urbanization, the spread of factory-farming methods, and globalization all combine to increase the odds that a new virus will make the jump from animals to humans and then spread rapidly around the world. Prior to the current pandemic, the 21st century already saw outbreaks of SARS, H1N1, MERS, and Ebola. Everything we do and learn in the current crisis should be viewed from the perspective of getting ready for next time.

#### **Vaccines are key to preventing infectious diseases**

Excler et al 4/12 Jean Louis Excler [Dr. Jean-Louis Excler is Pediatrician and Vaccinologist. He has been serving as Senior Consultant for the US Military HIV Research Program since 2010 for advanced development of HIV vaccine candidates in Thailand. He joined in November 2015 the International Vaccine Institute, Seoul, Republic of Korea as Head of Clinical Development and Regulatory until September 2018 and is now Program Director, New Initiatives] Melanie Saville [Physician specialized in virology with more than 17 years of experience in the vaccine industry. Holding leadership positions in the development and licensure of first and best in class vaccines.] Seth Berkley [Seth Franklin Berkley is an American medical epidemiologist, the CEO of the GAVI Alliance and a global advocate of the power of vaccines. He is the founder and former president and CEO of the International AIDS Vaccine Initiative.] Jerome H. Kim [Jerome Hahn Kim is Director General of the International Vaccine Institute (IVI). He was educated at University of Hawaiʻi at Mānoa where he studied Biology and History, the Yale School of Medicine, and completed his training at Duke University Medical Center.], 4/12/2021, <https://www.nature.com/articles/s41591-021-01301-0> //kangu

EID = emerging infectious diseases

Vaccines are the cornerstone of the management of infectious disease outbreaks and are the surest means to defuse pandemic and epidemic risk. The faster a vaccine is deployed, the faster an outbreak can be controlled. As discussed in the previous section, the standard vaccine development cycle is not suited to the needs of explosive pandemics. New vaccine platform technologies however may shorten that cycle and make it possible for multiple vaccines to be more rapidly developed, tested and produced[34](https://www.nature.com/articles/s41591-021-01301-0#ref-CR34). Table [2](https://www.nature.com/articles/s41591-021-01301-0#Tab2) provides examples of the most important technical vaccine platforms for vaccines developed or under development for emerging viral infectious diseases. Two COVID-19 vaccines were developed using mRNA technology (Pfizer–BioNTech[35](https://www.nature.com/articles/s41591-021-01301-0#ref-CR35) and Moderna[36](https://www.nature.com/articles/s41591-021-01301-0#ref-CR36)), both showing safety and high efficacy, and now with US Food and Drug Administration (FDA) emergency use authorization (EUA)[37](https://www.nature.com/articles/s41591-021-01301-0#ref-CR37),[38](https://www.nature.com/articles/s41591-021-01301-0#ref-CR38) and European Medicines Agency (EMA) conditional marketing authorization[39](https://www.nature.com/articles/s41591-021-01301-0#ref-CR39),[40](https://www.nature.com/articles/s41591-021-01301-0#ref-CR40). While innovative and encouraging for other EIDs, it is too early to assert that mRNA vaccines represent a universal vaccine approach that could be broadly applied to other EIDs (such as bacterial or enteric pathogens). While COVID-19 mRNA vaccines are a useful proof of concept, gathering lessons from their large-scale deployment and effectiveness studies still requires more work and time. While several DNA vaccines are licensed for veterinary applications, and DNA vaccines have shown safety and immunogenicity in human clinical trials, no DNA vaccine has reached licensure for use in humans[41](https://www.nature.com/articles/s41591-021-01301-0#ref-CR41). Recombinant proteins vary greatly in design for the same pathogen (for example, subunit, virus-like particles) and are often formulated with adjuvants but have longer development times. Virus-like particle-based vaccines used for hepatitis B and human papillomavirus are safe, highly immunogenic, efficacious and easy to manufacture in large quantity. The technology is also easily transferable. Whole inactivated pathogens (for example, SARS-CoV-2, polio, cholera) or live attenuated vaccines (for example, SARS-CoV-2, polio, chikungunya) are unique to each pathogen. Depending on the pathogen, these vaccines also may require biosafety level 3 manufacturing (at least for COVID-19 and polio), which may limit the possibility of technology transfer for increasing the global manufacturing capacity. Other vaccines are based on recombinant vector platforms, subdivided into nonreplicating vectors (for example, adenovirus 5 (Ad5), Ad26, chimpanzee adenovirus-derived ChAdOx, highly attenuated vectors like modified vaccinia Ankara (MVA)) and live attenuated vectors such as the measles-based vector or the vesicular stomatitis virus (VSV) vector. Either each vector is designed with specific inserts for the pathogen targeted, or the same vector can be designed with different inserts for the same disease. The development of the Merck Ebola vaccine is an example. ERVEBO is a live attenuated, recombinant VSV-based, chimeric-vector vaccine, where the VSV envelope G protein was deleted and replaced by the envelope glycoprotein of Zaire ebolavirus. ERVEBO is safe and highly efficacious, now approved by the US FDA and the EMA, and WHO prequalified, making VSV an attractive ‘platform’ for COVID-19 and perhaps for other EID vaccines[26](https://www.nature.com/articles/s41591-021-01301-0#ref-CR26) although the −70 °C ultracold chain storage requirement still presents a challenge. Other equally important considerations are speed of development, ease of manufacture and scale-up, ease of logistics (presentation, storage conditions and administration), technology transfer to other manufacturers to ensure worldwide supply, and cost of goods. Viral vectors such as Ad5, Ad26 and MVA have been used in HIV as well as in Ebola vaccines[42](https://www.nature.com/articles/s41591-021-01301-0#ref-CR42). Finally, regulatory authorities do not approve platforms but vaccines. Each vaccine is different. However, with each use of a specific technology, regulatory agencies may, over time, become more comfortable with underlying technology and the overall safety and efficacy of the vaccine platform, allowing expedited review and approvals in the context of a pandemic[43](https://www.nature.com/articles/s41591-021-01301-0#ref-CR43). With COVID-19, it meant that the regulatory authorities could permit expedited review of ‘platform’ technologies, such as RNA and DNA, that had been used (for other conditions) and had safety profiles in hundreds of people. A heterologous prime–boost (HPB) vaccine approach has been extensively explored for HIV[44](https://www.nature.com/articles/s41591-021-01301-0#ref-CR44) and Ebola vaccines[42](https://www.nature.com/articles/s41591-021-01301-0#ref-CR42). It is being investigated for COVID-19 vaccines with the Oxford–AstraZeneca AZD1222 and Gamaleya Sputnik V COVID-19 vaccines[45](https://www.nature.com/articles/s41591-021-01301-0#ref-CR45) or with the Pfizer–BioNTech vaccine ([https://www.comcovstudy.org.uk](https://www.comcovstudy.org.uk/)). Other HPB combinations might be considered involving mRNA, DNA, viral vector-based and protein-based vaccines. This may offer the potential benefit of improving the immune response and avoiding mutlidose reactogenicity or anti-vector immune responses. Additionally, people previously vaccinated with the standard regimen (for example, single or two dose) could be offered a booster immunization with a different vaccine. This might mitigate current shortages in vaccines, particularly in low- and middle-income countries (LMICs). Such a matrix of HPB possibilities deserves further consideration by manufacturers, funders and regulators supported by clinical trial studies and assessment of implementation challenges. Important improvements could speed up availability. Standardized labeling of vaccines so that they can be interchanged across countries and regions, date of production rather than expiration so that shelf life can be tracked, three-dimensional bar coding to allow critical information to be updated, standard indemnification and liability language that would allow agreement with all manufacturers, a no-fault compensation mechanism for serious adverse events related to vaccine administration, and regulatory harmonization are all critical and being worked on as part of the COVID-19 vaccine response and must be optimized for future outbreaks.

#### Pandemic outbreaks are likely and catastrophic

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(Lisa, with Vin Gupta. “The Next Pandemic Will Be Arriving Shortly.” https://foreignpolicy.com/2018/09/28/the-next-pandemic-will-be-arriving-shortly-global-health-infectious-avian-flu-ebola-zoonotic-diseases-trump/?utm\_source=PostUp&utm\_medium=email&utm\_campaign=Editors%20Picks%20%209/28/2018%20-%20Brand%20South%20Africa&utm\_keyword=Editor#39;s%20Picks%20OC)

There are plenty of security threats that could keep a former homeland security advisor awake. There is the possibility of a terrorist attack, a cyber-cataclysm, or any number of natural disasters—all threats that are capable of visiting destruction on entire communities in a matter of hours. Right at the top of that list is the threat of a deadly pandemic—an outbreak of infectious disease that rapidly crosses international borders.

In January 2017, while one of us was serving as a homeland security advisor to outgoing President Barack Obama, a deadly pandemic was among the scenarios that the outgoing and incoming U.S. Cabinet officials discussed in a daylong exercise that focused on honing interagency coordination and rapid federal response to potential crises. The exercise is an important element of the preparations during transitions between administrations, and it seemed things were off to a good start with a commitment to continuity and a focus on biodefense, preparedness, and the Global Health Security Agenda—an initiative begun by the Obama administration to help build health security capacity in the most critically at-risk countries around the world and to prevent the spread of infectious disease. But that commitment was short-lived.

Pandemic disease is arguably one of the greatest threats to global stability and security.

But investments to contend with such outbreaks have declined to their lowest levels since the height of the Ebola response in 2014, with U.S. federal dollars cut by over 50 percent from those peak levels.

The prevailing laissez-faire attitude toward funding pandemic preparedness within President Donald Trump’s White House is creating new vulnerabilities in the health infrastructure of the United States and leaving the world with critical gaps to contend with when the next global outbreak of infectious disease hits.

The investments made after the 2014 Ebola crisis have been slashed in recent proposed federal budgets from the Centers for Disease Control, the agency that works to stop deadly diseases in their tracks, and the U.S. Agency for International Development, which responds to international disasters, including the Ebola outbreak. Moreover, Timothy Ziemer, the top White House official in charge of pandemic preparedness, has left his job, and the biosecurity office he ran was summarily disbanded.

This lack of focus and relative decline in funding is dangerous, given the steady stream of global reports suggesting that transmission of potentially deadly zoonotic diseases, where pathogens move from animals to humans, is rising at an alarming rate. Some attribute this to climate change, with warmer climates everywhere extending the life cycles of mosquito-borne diseases and allowing them to reach higher altitudes and more temperate latitudes. This means that viral diseases such as Zika, dengue fever, and the West Nile virus are transmittable across a larger geographical area later into the year.

As a result, in 2018, it is impossible to reconcile the redirection of funds away from preparing for pandemics with these realities on the ground. Ebola, the quintessential zoonotic killer, has risen again, now in the Democratic Republic of the Congo, with World Health Organization officials describing the outbreak as on the “precipice” of a potential spread to neighboring countries. While this year’s response was far more rapid and effective than responses to prior outbreaks in Africa, cases continue to rise in hard-to-reach places with little health care infrastructure near Congo’s borders with Rwanda and Uganda, prompting fears of regional spread.

Perhaps most terrifying, difficult to treat and highly fatal strains of H7N9 avian influenza are spreading throughout China.

This strain of bird flu causes rapid respiratory illness with associated multiorgan dysfunction that’s easily spread by a small droplet. That’s why it’s so difficult to control and why recurrent epidemics continue to crop up: There have been five epidemics of H7N9 since 2013 in China alone, the most recent between the fall of 2016 and fall of 2017. Across these epidemics, among the 1,565 confirmed cases, about 40 percent of infected individuals died.

That is a staggering number that should frighten us all—particularly given that China, unlike other resource-limited states in Asia, has at least some capability to rapidly respond to emerging crises through its own Center for Disease Control and Prevention, which can deploy critical care and other public health emergency services.

Consider that it takes only one infected carrier of bird flu to escape screening or detection at a train station or airport to transform a local health crisis into a global pandemic. As there are over 60 nonstop flights between China and the United States daily, with an estimated total of 30,000 passengers traveling between the two countries each day, this possibility is more than a remote and existential threat. Transmission of bird flu to the United States is just a flight away, which is why durable investments in the Global Health Security Agenda are so important, allowing the U.S. government to address deadly pathogen transmission early and hopefully to do so before it reaches U.S. shores.

The WHO has tried to increase attention and enhance preparedness by strongly supporting the Joint External Evaluation, an assessment of each country’s capabilities in preventing, detecting, and responding to a potential outbreak. According to the first analyses of these results, global readiness to combat the next pandemic is broadly lacking. The starkest finding was that nearly 90 percent of the core public health capacities regarded as essential to pandemic preparedness, across a broad cross-section of countries, are not sufficiently developed to cope with the next major outbreak.

Although countries in Africa and Southeast Asia performed worse, on average, than those elsewhere, preparedness levels were insufficient to varying degrees almost everywhere.

The indicators in need of most attention related to antimicrobial drug resistance. The provision of vaccines for preventable diseases was a rare bright spot, with most countries now meeting basic thresholds for coverage of priority diseases among their populations.

This latter finding shows us what can work: Vaccine coverage rates have improved since the early 2000s in some of the hardest-to-reach places in no small part because of the Global Alliance for Vaccines and Immunization (GAVI)—a bipartisan-supported multinational effort dating back nearly two decades. GAVI helps redirect private and publicly allocated philanthropy and technical expertise to countries suffering from high burdens of vaccine-preventable diseases. Their impressive gains have been undeniable, most notably broad reductions in preventable causes of mortality for those under 5 years old from diarrheal and respiratory diseases.

The Global Health Security Agenda was designed, in part, to do for pandemic preparedness what GAVI has done so well for improved vaccination rates. In the wake of Ebola, the goal was to bolster preparedness response and detection and, most of all, to focus on prevention abroad so the United States wouldn’t have to fight a pandemic at home.

Unfortunately, the financial commitments to the agenda have been dramatically reduced under Trump, leaving us all vulnerable to an unparalleled array of emerging health threats the likes of which we haven’t seen since 1918, when an outbreak of a deadly disease known as “Spanish flu” killed nearly 50 million people globally. In the face of clear signs that the world is unprepared for the next outbreak, that devastating epidemics are a flight away, and that funding to combat these realities has been significantly cut back, the failure to take this crisis seriously is potentially deadly.

#### Extinction

Naish 12 [John, citing John Oxford (Professor of Virology at St. Bartholomew’s and the Royal London Hospital, and Scientific Director of Retroscreen Virology Ltd.) and David Quammen (Virology author—National Geographic), 10-14-12, Daily Mail, “The Armageddon virus: Why experts fear a disease that leaps from animals to humans could devastate mankind in the next five years”, http://www.dailymail.co.uk/sciencetech/article-2217774/The-Armageddon-virus-Why-experts-fear-disease-leaps-animals-humans-devastate-mankind-years.html]

When the Health Protection Agency warned the world of this newly- emerging virus last month, it ignited a stark fear among medical experts. Could this be the next bird flu, or even the next ‘Spanish flu’ — the world’s biggest pandemic, which claimed between 50 million and 100 million lives across the globe from 1918 to 1919? In all these outbreaks, the virus responsible came from an animal. Analysts now believe that the Spanish flu pandemic originated from a wild aquatic bird. The terrifying fact is that viruses that manage to jump to us from animals — called zoonoses — can wreak havoc because of their astonishing ability to catch us on the hop and spread rapidly through the population when we least expect it. One leading British virologist, Professor John Oxford at Queen Mary Hospital, University of London, and a world authority on epidemics, warns that we must expect an animal-originated pandemic to hit the world within the next five years, with potentially cataclysmic effects on the human race. Such a contagion, he believes, will be a new strain of super-flu, a highly infectious virus that may originate in some far-flung backwater of Asia or Africa, and be contracted by one person from a wild animal or domestic beast, such as a chicken or pig. By the time the first victim has succumbed to this unknown, unsuspected new illness, they will have spread it by coughs and sneezes to family, friends, and all those gathered anxiously around them. Thanks to our crowded, hyper-connected world, this doomsday virus will already have begun crossing the globe by air, rail, road and sea before even the best brains in medicine have begun to chisel at its genetic secrets. Before it even has a name, it will have started to cut its lethal swathe through the world’s population. If this new virus follows the pattern of the pandemic of 1918-1919, it will cruelly reap mass harvests of young and fit people. They die because of something called a ‘cytokine storm’ — a vast overreaction of their strong and efficient immune systems that is prompted by the virus. This uncontrolled response burns them with a fever and wracks their bodies with nausea and massive fatigue. The hyper-activated immune system actually kills the person, rather than killing the super-virus. Professor Oxford bases his prediction on historical patterns. The past century has certainly provided us with many disturbing precedents. For example, the 2003 global outbreak of Sars, the severe acute respiratory syndrome that killed nearly 1,000 people, was transmitted to humans from Asian civet cats in China. In November 2002, it first spread among people working at a live animal market in the southern Guangdong province, where civets were being sold. Nowadays, the threat from such zoonoses is far greater than ever, thanks to modern technology and human population growth. Mass transport such as airliners can quickly fan outbreaks of newly- emerging zoonoses into deadly global wildfires. The Sars virus was spread when a Chinese professor of respiratory medicine treating people with the syndrome fell ill when he travelled to Hong Kong, carrying the virus with him. By February 2003, it had covered the world by hitching easy lifts with airline passengers. Between March and July 2003, some 8,400 probable cases of Sars had been reported in 32 countries. It is a similar story with H1N1 swine flu, the 2009 influenza pandemic that infected hundreds of millions throughout the world. It is now believed to have originated in herds of pigs in Mexico before infecting humans who boarded flights to myriad destinations. Once these stowaway viruses get off the plane, they don’t have to learn a new language or new local customs. Genetically, we humans are not very diverse; an epidemic that can kill people in one part of the world can kill them in any other just as easily. On top of this, our risk of catching such deadly contagions from wild animals is growing massively, thanks to humankind’s relentless encroachment into the world’s jungles and rainforests, where we increasingly come into contact for the first time with unknown viral killers that have been evolving and incubating in wild creatures for millennia. This month, an international research team announced it had identified an entirely new African virus that killed two teenagers in the Democratic Republic of the Congo in 2009. The virus induced acute hemorrhagic fever, which causes catastrophic widespread bleeding from the eyes, ears, nose and mouth, and can kill in days. A 15-year-old boy and a 13-year-old girl who attended the same school both fell ill suddenly and succumbed rapidly. A week after the girl’s death, a nurse who cared for her developed similar symptoms. He only narrowly survived. The new microbe is named Bas-Congo virus (BASV), after the province where its three victims lived. It belongs to a family of viruses known as rhabdoviruses, which includes rabies. A report in the journal PLoS Pathogens says the virus probably originated in local wildlife and was passed to humans through insect bites or some other as-yet unidentified means. There are plenty of other new viral candidates waiting in the wings, guts, breath and blood of animals around us. You can, for example, catch leprosy from armadillos, which carry the virus in their shells and are responsible for a third of leprosy cases in the U.S. Horses can transmit the Hendra virus, which can cause lethal respiratory and neurological disease in people. In a new book that should give us all pause for thought, award-winning U.S. natural history writer David Quammen points to a host of animal-derived infections that now claim lives with unprecedented regularity. The trend can only get worse, he warns. Quammen highlights the Ebola fever virus, which first struck in Zaire in 1976. The virus’s power is terrifying, with fatality rates as high as 90 per cent. The latest mass outbreak of the virus, in the Congo last month, is reported to have killed 36 people out of 81 suspected cases. According to Quammen, Ebola probably originated in bats. The bats then infected African apes, quite probably through the apes coming into contact with bat droppings. The virus then infected local hunters who had eaten the apes as bushmeat. Quammen believes a similar pattern occurred with the HIV virus, which probably originated in a single chimpanzee in Cameroon. Studies of the virus’s genes suggest it may have first evolved as early as 1908. It was not until the Sixties that it appeared in humans, in big African cities. By the Eighties, it was spreading by airlines to America. Since then, Aids has killed around 30 million people and infected another 33 million. There is one mercy with Ebola and HIV. They cannot be transmitted by coughs and sneezes. ‘Ebola is transmissible from human to human through direct contact with bodily fluids. It can be stopped by preventing such contact,’ Quammen explains. ‘If HIV could be transmitted by air, you and I might already be dead. If the rabies virus — another zoonosis — could be transmitted by air, it would be the most horrific pathogen on the planet.’ Viruses such as Ebola have another limitation, on top of their method of transmission. They kill and incapacitate people too quickly. In order to spread into pandemics, zoonoses need their human hosts to be both infectious and alive for as long as possible, so that the virus can keep casting its deadly tentacles across the world’s population. But there is one zoonosis that can do all the right (or wrong) things. It is our old adversary, flu. It is easily transmitted through the air, via sneezes and coughs. Sars can do this, too. But flu has a further advantage. As Quammen points out: ‘With Sars, symptoms tend to appear in a person before, rather than after, that person becomes highly infectious. ‘That allowed many Sars cases to be recognised, hospitalised and placed in isolation before they hit their peak of infectivity. But with influenza and many other diseases, the order is reversed.’ Someone who has an infectious case of a new and potentially lethal strain of flu can be walking about innocently spluttering it over everyone around them for days before they become incapacitated. Such reasons lead Professor Oxford, a world authority on epidemics, to warn that a new global pandemic of animal-derived flu is inevitable. And, he says, the clock is ticking fast. Professor Oxford’s warning is as stark as it is certain: ‘I think it is inevitable that we will have another big global outbreak of flu,’ he says. ‘We should plan for one emerging in 2017-2018.’ But are we adequately prepared to cope? Professor Oxford warns that vigilant surveillance is the only real answer that we have. ‘New flu strains are a day-to-day problem and we have to be very careful to keep on top of them,’ he says. ‘We now have scientific processes enabling us to quickly identify the genome of the virus behind a new illness, so that we know what we are dealing with. The best we can do after that is to develop and stockpile vaccines and antiviral drugs that can fight new strains that we see emerging.’ But the Professor is worried our politicians are not taking this certainty of mass death seriously enough. Such laxity could come at a human cost so unprecedentedly high that it would amount to criminal negligence. The race against newly-emerging animal-derived diseases is one that we have to win every time. A pandemic virus needs to win only once and it could be the end of humankind.

### util

#### The standard is maximizing expected well-being.

#### 1] Phenomenal introspection --- it’s the most epistemically reliable --- historical moral disagreement over internal conceptions of morality such as questions of race, gender, class, religion, etc prove the fallibility of non-observational based ethics --- introspection means we value happiness because we can determine that we each value it --- just as I can observe a lemon’s yellowness, we can make those judgements about happiness.

#### 2] Actor specificity. Policymaking must be consequentialist since collective action results in conflicts that only util can resolve. Side constraints freeze state action since policy makers have to consider tradeoffs between multiple people. States lack intentionality since they're composed of multiple individuals—there is no act-omission distinction for them since they create permissions and prohibitions in terms of policies so authorizing action could never be considered an omission since the state assumes culpability in regulating the public domain.

#### 3] Only consequentialism explains degrees of wrongness—if I break a promise to meet up for lunch, that is not as bad as breaking a promise to take a dying person to the hospital. Only the consequences of breaking the promise explain why the second one is much worse than the first. Intuitions outweigh—they’re the foundational basis for any argument and theories that contradict our intuitions are most likely false even if we can’t deductively determine why

#### Extinction first

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

There appears to be lot of disagreement in moral philosophy. Whether these many apparent disagreements are deep and irresolvable, I believe there is at least one thing it is reasonable to agree on right now, whatever general moral view we adopt: that it is very important to reduce the risk that all intelligent beings on this planet are eliminated by an enormous catastrophe, such as a nuclear war. How we might in fact try to reduce such existential risks is discussed elsewhere. My claim here is only that we – whether we’re consequentialists, deontologists, or virtue ethicists – should all agree that we should try to save the world. According to consequentialism, we should maximize the good, where this is taken to be the goodness, from an impartial perspective, of outcomes. Clearly one thing that makes an outcome good is that the people in it are doing well. There is little disagreement here. If the happiness or well-being of possible future people is just as important as that of people who already exist, and if they would have good lives, it is not hard to see how reducing existential risk is easily the most important thing in the whole world. This is for the familiar reason that there are so many people who could exist in the future – there are trillions upon trillions… upon trillions. There are so many possible future people that reducing existential risk is arguably the most important thing in the world, even if the well-being of these possible people were given only 0.001% as much weight as that of existing people. Even on a wholly person-affecting view – according to which there’s nothing (apart from effects on existing people) to be said in favor of creating happy people – the case for reducing existential risk is very strong. As noted in this seminal paper, this case is strengthened by the fact that there’s a good chance that many existing people will, with the aid of life-extension technology, live very long and very high quality lives. You might think what I have just argued applies to consequentialists only. There is a tendency to assume that, if an argument appeals to consequentialist considerations (the goodness of outcomes), it is irrelevant to non-consequentialists. But that is a huge mistake. Non-consequentialism is the view that there’s more that determines rightness than the goodness of consequences or outcomes; it is not the view that the latter don’t matter. Even John Rawls wrote, “All ethical doctrines worth our attention take consequences into account in judging rightness. One which did not would simply be irrational, crazy.” Minimally plausible versions of deontology and virtue ethics must be concerned in part with promoting the good, from an impartial point of view. They’d thus imply very strong reasons to reduce existential risk, at least when this doesn’t significantly involve doing harm to others or damaging one’s character. What’s even more surprising, perhaps, is that even if our own good (or that of those near and dear to us) has much greater weight than goodness from the impartial “point of view of the universe,” indeed even if the latter is entirely morally irrelevant, we may nonetheless have very strong reasons to reduce existential risk. Even egoism, the view that each agent should maximize her own good, might imply strong reasons to reduce existential risk. It will depend, among other things, on what one’s own good consists in. If well-being consisted in pleasure only, it is somewhat harder to argue that egoism would imply strong reasons to reduce existential risk – perhaps we could argue that one would maximize her expected hedonic well-being by funding life extension technology or by having herself cryogenically frozen at the time of her bodily death as well as giving money to reduce existential risk (so that there is a world for her to live in!). I am not sure, however, how strong the reasons to do this would be. But views which imply that, if I don’t care about other people, I have no or very little reason to help them are not even minimally plausible views (in addition to hedonistic egoism, I here have in mind views that imply that one has no reason to perform an act unless one actually desires to do that act). To be minimally plausible, egoism will need to be paired with a more sophisticated account of well-being. To see this, it is enough to consider, as Plato did, the possibility of a ring of invisibility – suppose that, while wearing it, Ayn could derive some pleasure by helping the poor, but instead could derive just a bit more by severely harming them. Hedonistic egoism would absurdly imply she should do the latter. To avoid this implication, egoists would need to build something like the meaningfulness of a life into well-being, in some robust way, where this would to a significant extent be a function of other-regarding concerns (see chapter 12 of this classic intro to ethics). But once these elements are included, we can (roughly, as above) argue that this sort of egoism will imply strong reasons to reduce existential risk. Add to all of this Samuel Scheffler’s recent intriguing arguments (quick podcast version available here) that most of what makes our lives go well would be undermined if there were no future generations of intelligent persons. On his view, my life would contain vastly less well-being if (say) a year after my death the world came to an end. So obviously if Scheffler were right I’d have very strong reason to reduce existential risk. We should also take into account moral uncertainty. What is it reasonable for one to do, when one is uncertain not (only) about the empirical facts, but also about the moral facts? I’ve just argued that there’s agreement among minimally plausible ethical views that we have strong reason to reduce existential risk – not only consequentialists, but also deontologists, virtue ethicists, and sophisticated egoists should agree. But even those (hedonistic egoists) who disagree should have a significant level of confidence that they are mistaken, and that one of the above views is correct. Even if they were 90% sure that their view is the correct one (and 10% sure that one of these other ones is correct), they would have pretty strong reason, from the standpoint of moral uncertainty, to reduce existential risk. Perhaps most disturbingly still, even if we are only 1% sure that the well-being of possible future people matters, it is at least arguable that, from the standpoint of moral uncertainty, reducing existential risk is the most important thing in the world. Again, this is largely for the reason that there are so many people who could exist in the future – there are trillions upon trillions… upon trillions. (For more on this and other related issues, see this excellent dissertation). Of course, it is uncertain whether these untold trillions would, in general, have good lives. It’s possible they’ll be miserable. It is enough for my claim that there is moral agreement in the relevant sense if, at least given certain empirical claims about what future lives would most likely be like, all minimally plausible moral views would converge on the conclusion that we should try to save the world. While there are some non-crazy views that place significantly greater moral weight on avoiding suffering than on promoting happiness, for reasons others have offered (and for independent reasons I won’t get into here unless requested to), they nonetheless seem to be fairly implausible views. And even if things did not go well for our ancestors, I am optimistic that they will overall go fantastically well for our descendants, if we allow them to. I suspect that most of us alive today – at least those of us not suffering from extreme illness or poverty – have lives that are well worth living, and that things will continue to improve. Derek Parfit, whose work has emphasized future generations as well as agreement in ethics, described our situation clearly and accurately: “We live during the hinge of history. Given the scientific and technological discoveries of the last two centuries, the world has never changed as fast. We shall soon have even greater powers to transform, not only our surroundings, but ourselves and our successors. If we act wisely in the next few centuries, humanity will survive its most dangerous and decisive period. Our descendants could, if necessary, go elsewhere, spreading through this galaxy…. Our descendants might, I believe, make the further future very good. But that good future may also depend in part on us. If our selfish recklessness ends human history, we would be acting very wrongly.” (From chapter 36 of On What Matters)