### Advantage 1 is disease

#### Vaccines will not cover LMICs until at least 2023—but fortunately there is massive room for supply increase

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Since consequentialist justifications treat the value of IP as purely instrumental, they are also vulnerable to counterarguments showing that a sought-after goal is not the sole or most important end. During the COVID-19 pandemic, we submit that the vaccinating the world is an overriding goal. With existing IP protections intact, the world has **fallen well short** of this goal. Current forecasts show that at the current pace, there will **not be enough vaccines to cover the world’s population** until 2023 or 2024.15 IP protections further frustrate the goal of universal access to vaccines by limiting who can manufacturer them. The WHO reports that 80% of global sales for COVID-19 vaccines come from five large multinational corporations.16 Increasing the number of manufacturers globally would not only **increase supply,** but reduce prices, making vaccines more affordable to L[ow and] M[iddle] I[ncome] C[ountrie]s. It would stabilise supply, minimising disruptions of the kind that occurred when India halted vaccine exports amidst a surge of COVID-19 cases.

It might be objected that waiving IP protections will not increase supply, because it takes years to **establish manufacturing capacity**. However, since the pandemic began, we have learnt it takes less time. Repurposing facilities and vetting them for safety and quality can often happen in 6 or 7months, about half the time previously thought.17 Since COVID-19 will not be the last pandemic humanity faces, expanding manufacturing capacity is also necessary preparation for **future pandemics**. Nkengasong, Director of the African Centres for Disease Control and Prevention, put the point bluntly, ‘Can a continent of 1.2billion people—projected to be 2.4billion in 30 years, where one in four people in the world will be African—continue to import 99% of its vaccine?’18

#### Extended COVID in developing countries will exacerbate inequalities fostered by COVID—job loss, poverty, and lack of health insurance all increase

Pley et al 21-- Pley, Caitlin M. [University of Cambridge Department of Medicine, Public Policy Researcher], et al. "The global impact of the COVID-19 pandemic on the prevention, diagnosis and treatment of hepatitis B virus (HBV) infection." BMJ Global Health 6.1 (2021): e004275. (AG DebateDrills)

The COVID-19 pandemic is amplifying existing economic and public health inequalities. The pandemic is likely to cause a worldwide recession and the contraction of national economies, pushing millions more below the poverty line, especially in countries without universally accessible health systems and already high levels of outof-pocket spending on health.21 Furthermore, the most vulnerable members of society are not only more likely to be affected by HBV, but they are also more likely to have comorbid non-communicable diseases that raise the risk of a severe COVID-19 disease course. Rural and indigenous communities in LMICs, as reported in India and Nigeria, are most severely affected by movement restrictions, as they impede access to health centres and the ability to earn a living wage.6 Individuals working in unstable employment arrangements risk losing their health insurance, and those working in the informal sector frequently already pay for healthcare expenditures out-of-pocket, with no access to fiscal stimulus packages and other social safety nets if they lose their employment. Such issues extend to HICs, such as the USA, where a large number of job losses have led to 6.2million people losing their health insurance since the onset of the COVID-19 pandemic.22 Drops in healthcare coverage will likely lead to worsening of chronic conditions, including CHB, and may reduce the incentive to seek testing services when treatment is unaffordable.

#### The plan also sets a precedent to seamlessly shift to a direct support model during pandemics--that solves future pandemics but avoids the innovation DA.

Brink **Lindsey 21**. Vice President, Niskanen Center; Writes for Brookings, “Why Intellectual Property and Pandemics Don’t Mix,” Brookings, June 3, 2021, <https://www.brookings.edu/blog/up-front/2021/06/03/why-intellectual-property-and-pandemics-dont-mix/>, RJP, **DebateDrills**.

**PUBLIC HEALTH EMERGENCIES AND DIRECT GOVERNMENT SUPPORT**

For pandemics and other public health emergencies, patents’ mix of costs and benefits is misaligned with what is needed for an effective policy response. The basic patent bargain, even when well struck, is to pay for more innovation down the road with slower diffusion of innovation today. In the context of a pandemic, that bargain is a bad one and should be rejected entirely. Here the imperative is to accelerate the diffusion of vaccines and other treatments, not slow it down. Giving drug companies the power to hold things up by blocking competitors and raising prices pushes in the completely wrong direction.

What approach to encouraging innovation should we take instead? How do we incentivize drug makers to undertake the hefty R&D costs to develop new vaccines without giving them exclusive rights over their production and sale? The most effective approach during a public health crisis is direct government support: public funding of R&D, advance purchase commitments by the government to buy large numbers of doses at set prices, and other, related payouts. And when we pay drug makers, we should not hesitate to pay generously, even extravagantly: we want to offer drug companies big profits so that they prioritize this work above everything else, and so that they are ready and eager to come to the rescue again the next time there’s a crisis.It was direct support via Operation Warp Speed that made possible the astonishingly rapid development of COVID-19 vaccines and then facilitated a relatively rapid rollout of vaccine distribution (relative, that is, to most of the rest of the world). And it’s worth noting that a major reason for the faster rollout here and in the United Kingdom compared to the European Union was the latter’s [misguided penny-pinching](https://www.nytimes.com/2021/05/17/opinion/europe-vaccines-commission.html?smid=tw-share). The EU bargained hard with firms to keep vaccine prices low, and as a result their citizens ended up in the back of the queue as various supply line kinks were being ironed out. This is particularly ironic since the Pfizer-BioNTech vaccine was developed in Germany. As this fact underscores, the chief advantage of direct support isn’t to “get tough” with drug firms and keep a lid on their profits. Instead, it is to accelerate the end of the public health emergency by making sure drug makers profit handsomely from doing the right thing.Patent law and direct support should be seen not as either-or alternatives but as complements that apply different incentives to different circumstances and time horizons. Patent law provides a decentralized system for encouraging innovation. The government doesn’t presume to tell the industry which new drugs are needed; it simply incentivizes the development of whatever new drugs that pharmaceutical firms can come up with by offering them a temporary monopoly. It is important to note that patent law’s incentives offer no commercial guarantees. Yes, you can block other competitors for a number of years, but that still doesn’t ensure enough consumer demand for the new product to make it profitable. DIRECT SUPPORT MAKES PATENTS REDUNDANT The situation is different in a pandemic. Here the government knows exactly what it wants to incentivize: the creation of vaccines to prevent the spread of a specific virus and other drugs to treat that virus. Under these circumstances, the decentralized approach isn’t good enough. There is no time to sit back and let drug makers take the initiative on their own timeline. Instead, the government needs to be more involved to incentivize specific innovations now. As recompense for letting it call the shots (pardon the pun), the government sweetens the deal for drug companies by insulating them from commercial risk. If pharmaceutical firms develop effective vaccines and therapies, the government will buy large, predetermined quantities at prices set high enough to guarantee a healthy return. For the pharmaceutical industry, it is useful to conceive of patent law as the default regime for innovation promotion. It improves pharmaceutical companies’ incentives to develop new drugs while leaving them free to decide which new drugs to pursue – and also leaving them to bear all commercial risk. In a pandemic or other emergency, however, it is appropriate to shift to the direct support regime, in which the government focuses efforts on one disease. In this regime, it is important to note, the government provides qualitatively superior incentives to those offered under patent law. Not only does it offer public funding to cover the up-front costs of drug development, but it also provides advance purchase commitments that guarantee a healthy return. It should therefore be clear that the pharmaceutical industry has no legitimate basis for objecting to a TRIPS waiver. Since, because of the public health crisis, drug makers now qualify for the superior benefits of direct government support, they no longer need the default benefits of patent support. Arguments that a TRIPS waiver would deprive drug makers of the incentives they need to keep developing new drugs, when they are presently receiving the most favorable incentives available, can be dismissed as the worst sort of special pleading. That said, it is a serious mistake to try to cast the current crisis as a morality play in which drug makers wear the black hats and the choice at hand is between private profits and public health. We would have no chance of beating this virus without the formidable organizational capabilities of the pharmaceutical industry, and providing the appropriate incentives is essential to ensure that the industry plays its necessary and vital role. It is misguided to lament that private companies are profiting in the current crisis: those profits are a drop in the bucket compared to the staggering cost of this pandemic in lives and economic damage. What matters isn’t the existence or size of the profits, but how they are earned. We have good reason to want drug makers to profit from vaccinating the world: the comparative price is minuscule, and the incentive effects are a vital safeguard of public health in the event of future crises. What we want to avoid at all costs is putting drug makers in the position where drug companies can profit from standing in the way of rapid global vaccination. That is why intellectual property rights need to be taken out of the equation. Vaccinating the world in any kind of reasonable time frame will require large-scale technology transfer to drug firms in other countries and rapid expansion of their production capacity. And looking beyond the current pandemic to the longer term, we need [ample, redundant global vaccine production capacity](https://www.vox.com/future-perfect/22397914/vaccine-mrna-adenovirus-manufacturing-process-investment) that is widely distributed around the planet. To achieve these goals as rapidly as possible will require the active cooperation of the U.S. pharmaceutical industry, which is why the direct support model now needs to be extended. What is needed now is an Operation Warp Speed for the world, in which we make it worth current vaccine producers’ while to share their know-how broadly and ramp up global capacity. Here again, we must recognize that the choice isn’t between people on the one hand and profits on the other. Rather, the key to good pandemic response policy is ensuring that incentives are structured so that drug company profit-seeking and global public health are well aligned. That means opting out of the default, decentralized patent bargain in favor of generous but well-focused direct government support.

#### Pandemics disrupt developing countries’ healthcare—preventing prolonged pandemics is key to overall health

Pley et al 21-- Pley, Caitlin M. [University of Cambridge Department of Medicine, Public Policy Researcher], et al. "The global impact of the COVID-19 pandemic on the prevention, diagnosis and treatment of hepatitis B virus (HBV) infection." BMJ Global Health 6.1 (2021): e004275. (AG DebateDrills)

There is previous evidence to show that routine immunisation programmes are highly vulnerable to disruption resulting from epidemics, political upheaval or economic crises. When vaccination coverage rates sharply dipped in West Africa during the 2013–2016 Ebola outbreak, the incidence of measles rapidly rebounded.7 Although HBV global vaccination coverage has steadily increased since the 1990s, previous experience shows correlation of declines in vaccination coverage with political and economic unrest that disrupt infrastructure (figure 1). Since the progression to overt liver disease occurs slowly, the impact of a drop in HBV vaccination coverage may go unnoticed for decades in settings without adequate diagnostic infrastructure. Preliminary data from the Institute for Health Metrics and Evaluation indicate that overall global vaccination coverage levels in 2020 have dropped to levels last seen in the 1990s, threatening 25 years of progress in just 6 months.8 The USA’s federally financed ‘Vaccines for Children’ Programme has documented notable declines in vaccine ordering and administration after declaration of the national emergency on 13 March 2020, although more markedly in children older than 24 months than younger children, reflecting some success in maintaining routine vaccination of infants.9 In England, electronic health records have shown that coverage of the measles, mumps, rubella vaccination dropped by 19.8% when physical distancing measures were implemented between February and April 2020, compared with the same period in 2019.10 Reduced vaccination coverage may have particularly strong repercussions on HBV incidence in infancy and early childhood, contributing to an increase in the global burden of chronic infection and providing a long-term source of onward transmission that threatens progress towards the 2030 elimination goals. The repercussions of the COVID-19 pandemic on HBV vaccination and control may even outweigh the number of direct COVID-19 deaths in the long term. A recent model has projected that for one excess COVID-19 death attributable to visiting a vaccination delivery point, mostly in the older household contacts of children, the deaths of 84 children under 5years could be prevented if routine childhood immunisation programmes were sustained in sub-Saharan Africa.11

#### Future pandemics cause extinction

**Bar-Yam 16** [Yaneer. Professor and President, New England Complex System Institute; PhD in Physics, MIT. “Transition to extinction: Pandemics in a connected world.” July 3. <http://necsi.edu/research/social/pandemics/transition>] TR

Watch as one of the more aggressive—brighter red — strains rapidly expands. After a time it goes extinct leaving a black region. Why does it go extinct? The answer is that it spreads so rapidly that it kills the hosts around it. Without new hosts to infect it then dies out itself. That the rapidly spreading pathogens die out has important implications for evolutionary research which we have talked about elsewhere [1–7].¶ In the research I want to discuss here, what we were interested in is the effect of adding long range transportation [8]. This includes natural means of dispersal as well as **unintentional dispersal by humans**, like adding airplane routes, which is being done by real world airlines (Figure 2).¶ When we introduce long range transportation into the model, the success of more aggressive **strains** changes. They can **use** the **long range transportation to** find new hosts and **escape local extinction**. Figure 3 shows that the more transportation routes introduced into the model, the **more higher aggressive pathogens are able to survive and spread**.¶ As we add more long range transportation, there is a critical point at which pathogens become so aggressive **that the entire host population dies**. The pathogens die at the same time, but that is not exactly a consolation to the hosts. We call this the phase transition to extinction (Figure 4). With increasing levels of global transportation, **human civilization may be approaching such a** critical **threshold**.¶ In the paper we wrote in 2006 about the dangers of global transportation for pathogen evolution and pandemics [8], we mentioned the risk from Ebola. Ebola is a horrendous disease that was present only in isolated villages in Africa. It was far away from the rest of the world only because of that isolation. Since Africa was developing, it was only a matter of time before it reached population centers and airports. While the model is about evolution, it is really about which pathogens will be found in a system that is highly connected, and Ebola can spread in a highly connected world.¶ The traditional approach to public health uses historical evidence analyzed statistically to assess the potential impacts of a disease. As a result, many were surprised by the spread of Ebola through West Africa in 2014. As the connectivity of the world increases, past experience is not a good guide to future events.¶ A key point about the **phase transition to extinction is** its **suddenness**. Even **a system that seems stable, can be destabilized by a few** more long-range **connections**, and connectivity is continuing to increase.¶ So how close are we to the tipping point? We don’t know but it would be good to find out before it happens.¶ While Ebola ravaged three countries in West Africa, it only resulted in a handful of cases outside that region. One possible reason is that many of the airlines that fly to west Africa stopped or reduced flights during the epidemic [9]. In the absence of a clear connection, public health authorities who downplayed the dangers of the epidemic spreading to the West might seem to be vindicated.¶ As with the choice of airlines to stop flying to west Africa, our analysis didn’t take into consideration how people respond to epidemics. It does tell us what the outcome will be unless we respond fast enough and well enough to stop the spread of future diseases, which may not be the same as the ones we saw in the past. As the world becomes more connected, the dangers increase.¶ Are people in western countries safe because of higher quality health systems? Countries like **the U.S.** have highly skewed networks of **social interactions with** some very highly connected individuals that can be **“superspreaders.”** The chances of such an individual becoming infected may be low but **events like a mass outbreak pose a much greater risk** if they do happen. If a sick food service worker in an airport infects 100 passengers, or a contagion event happens in mass transportation, **an outbreak could** very well **prove unstoppable**.

### Advantage 2 is African instability

A prolonged economic contraction in Africa pushes millions more into poverty and also forever ends projects key to future economic progress

Lakemann and Tafese 20-- Lakemann, Tabea, Jann Lay, and Tevin Tafese. "Africa after the covid-19 lockdowns: economic impacts and prospects." (2020): 14.

The most recent economic data suggests that economic activity declined dramatically during the lockdowns. The very sharp decline in South Africa is particularly worrying, as it is likely to affect neighboring economies as well. At the same time, some countries in West and East Africa are already showing signs of recovery that may take place more quickly than anticipated. Looking solely at African aggregate growth performance and aggregate poverty will be misleading. Short-term impacts, especially on urban poverty, have likely been severe: The evidence is clear that informal workers across the continent have suffered drastic income losses during the lockdowns, as few have been shielded by social protection or other policies. It remains to be seen how quickly they can recover from the shock, but there is some empirical silver lining here as well. As elsewhere in the world, industries have been affected heterogeneously by the pandemic and the associated restrictions. This also holds for the external sector. Trade has declined dramatically, but our analysis reveals important differences between export products. Oil exporters have been adversely affected by the oil price slump and impacts on products traded in GVCs have been diverse, ranging from strong declines in textiles and apparel to increases in some food products. Food imports have hardly been affected, as global food supply chains have, overall, proven relatively resilient thus far. Finally, FDI is likely to drop substantially in 2020. Although there is again sectoral variation, this drop will not spare investments considered key for an acceleration of Africa’s economic development and the creation of productive employment. The drop in FDI demonstrates the uncertainty that looms over the hope for quick recovery. Huge setbacks to economic progress and poverty reduction in Africa can only be avoided with a quick recovery. A prolonged economic recession would not only cause poverty to rise further, but the medium- to long-term costs of the shock could be exacerbated by political turmoil or even increased conflict.

#### These direct impacts combine with indirect effects on the job market to create a vicious cycle where productivity loss increases political instability, deteriorating economic conditions and foreign confidence further, fostering even more turmoil

Carmody 20-- Carmody, Pádraig. "Meta-trends in global value chains and development: interacting impacts with COVID-19 in Africa." Transnational Corporations Journal 27.2 (2020).

The indirect impacts have, potentially, even wider effects. First amongst these is a “negative multiplier”. Dramatic reductions in the formal economy will have substantial knock-on effects on the informal sector, with potentially massive implications for poverty and unemployment. The United Nations Economic Commission for Africa forecasts that up to half of all formal sector jobs in Africa could be lost as a result of the pandemic, whereas McKinsey predicts 18 million formal and 100 million informal jobs could be at risk (Thomas, 2020). While the urban informal economy may be locked in an exploitative relationship with the formal one (Santos, 1979), it is nonetheless largely dependent on it for its survival. Reductions in remittances from urban areas or from relatives living overseas may affect rural areas particularly badly. In rural Western Kenya average income declines of 25 per cent were recorded from early April to the end of May 2020 as lockdown measures were introduced and then eased (Miguel, 2020)3 . Flows of remittances to Sub-Saharan Africa are projected to decline by 23.1 per cent in 2020 (World Bank cited in African Business, 2020). As formal sector jobs are lost, less income circulates through the economy and tax revenues are reduced. This may also have potentially severe political economy effects as “productive” social contracts (Nugent, 2019) may be further undermined, where they exist, as informalization deepens and proliferates, driving marginal productivity even further down. This may, in turn, exacerbate problems of governance and corruption in certain countries, with myriad, but generally negative economic consequences; again potentially compromising the ability to attract inward inflows of productive FDI. Reduced tax revenues may also mean reductions in infrastructural investment and social expenditure, increased indebtedness, or most likely, both – again reducing economic growth – with the potential to generate a vicious circle. While there have been some initiatives to try to limit the impact of increased indebtedness, such as a debt moratorium by the Group of 20 (G20) for low income countries until the end of the year, the head of the International Monetary Fund (IMF) has argued that many countries will need debt restructuring, rather than just a freeze (Reuters, 2020). As economic conditions deteriorate in many African countries they will find it increasingly difficult to source finance from international capital markets, which may reorient to service developed countries seeking to finance their budget deficits. Consequently, many have already been forced to ask the IMF for emergency assistance. However, the strict conditions attached to IMF loans have generally not been conducive, or have been actively detrimental, to development efforts on the continent (Mkandawire and Soludo, 1999). Dozens of countries on the continent are now under, or requesting, IMF financial assistance, even if that organization has also offered some debt relief (Mizner, 2020)4 . The (enforced) return or reinforcement of economic orthodoxy on the continent will reduce policy space for developmental states, such as Ethiopia, to emerge in the future (Carmody, Kragelund and Riboredo, 2020).

#### African instability results in global draw-in as natural resource wealth and weak governance make Africa a prime target for proxy wars

Yeisley 11, Mark O. "Bipolarity, proxy wars, and the rise of China." Strategic Studies Quarterly 5.4 (2011): 75-91. (assistant professor of international relations at the School of Advanced Air and Space Studies). (AG DebateDrills)

Of primary interest is open access to Africa’s significant deposits of oil and other energy resources. For example, China has 4,000 military personnel in Sudan to protect its interests in energy and mineral investments there; it also owns 40 percent of the Greater Nile Oil Production Company.54 Estimates indicate that within the next few decades China will obtain 40 percent of its oil and gas supplies from Africa.55 Trade and investment in Africa have also been on the rise; trade has grown more than 10 percent annually in the past decade. Between 2002 and 2004, African exports to China doubled, ranking it third behind the United States and France in trade with the continent. Chinese investment is also growing; more than 700 Chinese business operations across Africa total over $1 billion. Aid and direct economic assistance are increasing as well, and China has forgiven the debt of some 31 African nations.56 Africa is thus a vital foreign interest for the Chinese and must be for the United States; access to its mineral and petroleum wealth is crucial to the survival of each.57 Although the US and Chinese economies are tightly interconnected, the nonrenewable nature of these assets means competition will remain a zero-sum game. Nearly all African states have been independent entities for less than 50 years; consolidating robust domestic state institutions and stable governments remains problematic.58 Studies have shown that weak governments are often prime targets for civil conflicts that prove costly to control.59 Many African nations possess both strategic resources and weak regimes, making them vulnerable to internal conflict and thus valuable candidates for assistance from China or the United States to help settle their domestic grievances. With access to African resources of vital strategic interest to each side, competition could likely occur by proxy via diplomatic, economic, or military assistance to one (or both) of the parties involved. Realist claims that focusing on third-world issues is misplaced are thus fallacious; war in a future US-China bipolar system remains as costly as it was during the Cold War. Because of the fragile nature of many African regimes, domestic grievances are more prone to result in conflict; US and Chinese strategic interests will dictate an intrusive foreign policy to be both prudent and vital. US-Sino proxy conflicts over control of African resources will likely become necessary if these great powers are to sustain their national security postures, especially in terms of strategic defense.60

#### US-China conventional war goes nuclear.

[Caitlin **Talmadge** (10-15-20**18**), PhD in Political Science from MIT, BA in Government from Harvard, Professor of Security Studies at Georgetown University, “Beijing’s Nuclear Option,” Foreign Affairs, [https://www.foreignaffairs.com/articles/china/2018-10-15/beijings-nuclear-option]//recut](https://www.foreignaffairs.com/articles/china/2018-10-15/beijings-nuclear-option%5d//recut) CHS PK

**As China’s power has grown in recent years, so, too, has the risk of war with the United States.** Under President Xi Jinping, China has increased its political and economic pressure on Taiwan and built military installations on coral reefs in the South China Sea, fueling Washington’s fears that Chinese expansionism will threaten U.S. allies and influence in the region. U.S. destroyers have transited the Taiwan Strait, to loud protests from Beijing. American policymakers have wondered aloud whether they should send an aircraft carrier through the strait as well. Chinese fighter jets have intercepted U.S. aircraft in the skies above the South China Sea. Meanwhile, U.S. President Donald Trump has brought long-simmering economic disputes to a rolling boil.

A war between the two countries remains unlikely, but **the prospect of a military confrontation**—resulting, for example, from a Chinese campaign against Taiwan—no longer seems as implausible as it once did. And the odds of such a confrontation **going nuclear are higher than most policymakers and analysts think.**

Members of China’s strategic community tend to dismiss such concerns. Likewise, U.S. studies of a potential war with China often exclude nuclear weapons from the analysis entirely, treating them as basically irrelevant to the course of a conflict. Asked about the issue in 2015, Dennis Blair, the former commander of U.S. forces in the Indo-Pacific, estimated the likelihood of a U.S.-Chinese nuclear crisis as “somewhere between nil and zero.”

This **assurance is misguided. If deployed against China, the Pentagon’s preferred style of conventional warfare would be a potential recipe for nuclear escalation.** Since the end of the Cold War, **the United States’ signature approach to war has been** simple: **punch deep into enemy territory in order to rapidly knock out the opponent’s key military assets at minimal cost. But the Pentagon developed this formula in wars against Afghanistan, Iraq, Libya, and Serbia, none of which was a nuclear power.**

**China**, by contrast, **not only has nuclear weapons; it has also intermingled them with its conventional military forces, making it difficult to attack one without attacking the other**. This means that **a major U.S. military campaign targeting China’s conventional forces would likely also threaten its nuclear arsenal**. Faced with such a threat, **Chinese leaders could decide to use their nuclear weapons while they were still able to.**

**A**s **U.S. and Chinese** leaders navigate a relationship fraught with mutual suspicion, they must come to grips with the fact that a **conventional war could skid into a nuclear confrontation**. Although this risk is not high in absolute terms**, its consequences for the region and the world would be devastating**. As long as the United States and China continue to pursue their current grand strategies, the risk is likely to endure. This means that leaders on **both sides should dispense with the illusion that they can easily fight a limited war**. They should focus instead on managing or resolving the political, economic, and military tensions that might lead to a conflict in the first place.

#### Extinction – nuclear winter, crude oil amplifies, smoke covers the world

**Snyder 17** (Brian F.Snyder and Leslie E. Ruyle, 12-15-2017, [Brian F. Snyder. Department of Environmental Science, Louisiana State University, United States. Leslie E. Ruyle. Center on Conflict and Development, Texas A&M University, United States]"The abolition of war as a goal of environmental policy," No Publication, <https://www.sciencedirect.com/science/article/pii/S0048969717316431?via%3Dihub)//CHS> PK

While the precise impacts of a hypothetical nuclear war are difficult to predict, the **detonation of the world's nuclear weapons would plausibly kill all or nearly all humans on Earth and initiate a mass extinction event**. There are a total of about 9400 nuclear warheads in active service around the world, with approximately 8300 of these weapons in U.S. and Russian arsenals (Kristensen and Norris, 2017a). Because of government secrecy, it is difficult to reliably estimate the total explosive power contained in these warheads, but in most cases, each warhead ranges between 100 and 1200 kt of TNT equivalent (for comparison, the bombs dropped on Hiroshima and Nagasaki had yields of approximately 15–20 kt). The combined arsenals of the U.S. and Russia likely have a yield of at least 2–3 billion tons of TNT equivalent (Kristensen and Norris, 2017b,c). 2.1. Nuclear winter **In the 1980s climate scientists used simple and early climate models to estimate the effects of large-scale nuclear wars on climate. The estimates they derived were catastrophic.** For example, Turco et al. (1983) reported temperature reductions of 43 °C for 4 months in the Northern Hemisphere following nuclear war using the explosive power of 10 billion tons of TNT.1 As the cold war ended, interest in modelling the climate effects of nuclear war declined and some policy-makers considered the threat of nuclear winter to be either disproved or exaggerated (Martin, 1988). Toon et al. (2007) and Robock et al. (2007) reignited interest in the climate effects of nuclear war. Toon et al. (2008) modeled the effects of a medium scale nuclear war with a total explosive yield of 440 million tons of explosive yield (far less than current U.S. and Russian arsenals) and estimated global soot2 emissions of 180 Tg. Using a more conservative estimate of 150 Tg of soot, Toon et al. estimated that this emission would be sufficient to reduce global temperatures by about 8 °C and energy flux by 150 W/m2 ; for comparison, the cumulative greenhouse gas emissions to the atmosphere since the industrial revolution have increased energy flux by 3 W/m2 (Butler and Montzka, 2017). Robock et al. (2007) modeled a similar 150 Tg smoke emission and found similar results including temperature reduction of about 8 °C lasting for several years. Low temperatures reduced evapotranspiration and weakened the global hydrological cycle and Hadley cells. As a result, precipitation decreased globally by 45% with especially dramatic decreases in the agricultural areas of the United States. In the Northern Hemisphere, **growing seasons would be shortened by about 100 days for about 3 years**. This would preclude most food production over most of the world for several years. Mills et al. (2014) conducted a detailed analysis of the effects of a small (1.5 million ton) regional exchange lofting just 5 Tg of soot into the atmosphere. This war would be equivalent to an exchange of 100 Hiroshima-sized bombs between, for example, India, Pakistan, or China. Mills et al. found global temperature decreases of 1.6 °C. To our knowledge, no one has studied the effects of a multi-billion ton nuclear exchange using modern atmospheric models. If, as Toon et al. and Robock et al. suggest, a 440 million ton war results in temperature reductions of 8 °C for a decade and a 100 day reduction in the growing season, **it is reasonable to assume that a one to five billion ton war would not be survivable for the majority of people on earth.** However, as populations and population centers grow, the effects of nuclear wars on the biosphere will also grow. The consequences of nuclear winter increase as the amount of fuel (buildings, cars, biomass, liquid and solid fuels) added to a targeted area increase. As population centers grow and densify over time, the amount of soot added to the stratosphere as the result of any given nuclear exchange may increase (depending in part on building materials). As a result, **the nuclear winter resulting from a 400 million ton yield global war in 2020 may be far more severe than if the same war occurred in 2000**. Further, there are reasons to believe that **the soot emissions from a hypothetical nuclear exchange are conservative because they focus on urban areas and often do not incorporate non-urban energy infrastructure**. For example, if ignited and burned completely, the U.S. Strategic Petroleum Reserve (SPR) alone contains about 14.5 Tg of soot emissions.3 Including all crude held in U.S. commercial facilities, the potential soot emissions increase to 24 Tg. **Thus, incorporating crude oil storage in the U.S. alone would increase soot generation estimates by about 16**%. Similarly, nuclear war planners would be likely to target coal, oil and gas fields in the U.S., Russia, and their allies. **This unaccounted for fuel could increase the total soot contribution to the atmosphere, potentially deepening the resulting nuclear winte**r. 2.2. Acute effects of particulate matter Studies of nuclear winter typically focus on the effects of smoke lofted into the stratosphere during nuclear firestorms. However, a larger proportion of smoke following nuclear war will be trapped in the troposphere where it would have significantly acute impacts on human and non-human species. Crutzen et al. (1984) calculated that **following a major nuclear war (about 5 billion tons of explosives, roughly the combined U.S. and Russian deployed nuclear arms as of 2017) smoke would cover about 30–40% of the earth's surface with airborne smoke concentrations on the order of 5 mg/m3 .** While initially this smoke would be composed of very small particles (b0.1 μm), the particles would rapidly coalesce into the 0.1 to 3 μm range, roughly consistent with the wellstudied PM2.5. For comparison, the EPA's National Ambient Air Quality standard for PM2.5 is 0.012 mg/m3 and as of 2017, the highest PM2.5 concentrations in Asia are typically around 0.3 to 1 mg/m3 .

### Solvency

#### Plan: Member nations of the WTO ought to grant a TRIPS waiver for COVID medicines

#### India and South Africa have signaled ability to increase vaccine production after a TRIPS waiver—this is also our solvency advocate

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This view has come under increasing fire. Two competing positions have emerged. First, India and South Africa petitioned the WTO for a temporary waiver of IP rights for medical products pertaining to preventing, containing or treating COVID19.2 The wavier would apply to all WTO members and lift restrictions in four TRIPS sections: copyright and related rights, industrial designs, patents and protection of undisclosed information. It would be annually reviewed and last for a set length, determined by the WTO Council. Proponents of the proposal argue that IP protections have ‘hindered urgent scale-up of vaccine production’ and that ‘many countries—especially LMICs countries—may face institutional and legal difficulties when using TRIPS flexibilities’.12 To break the divide, WTO Director General, Okonjo-Iweala, proposed ‘a third way’ in which ‘we… license manufacturing to countries so that we can have adequate supplies while still making sure that IP issues are taken care of.’13 This approach permits companies to retain ownership while licensing other companies to manufacture their vaccines.

#### The plan is also a prerequisite to starting a technology transfer hub

WHO 4/21—WHO, 4-21-2021, “Establishment of a COVID-19 mRNA vaccine technology transfer hub to scale up global manufacturing,” <https://www.who.int/news-room/articles-detail/establishment-of-a-covid-19-mrna-vaccine-technology-transfer-hub-to-scale-up-global-manufacturing>. (AG DebateDrills)

WHO and its partners are seeking to expand the capacity of low- and middle-income countries (LMICs) to produce COVID-19 vaccines and scale up manufacturing to increase global access to these critical tools to bring the pandemic under control.

WHO will facilitate the establishment of one (or more, as appropriate) technology transfer hub(s) that will use a hub and spoke model (REF) to transfer a comprehensive technology package and provide appropriate training to interested manufacturers in LMICs. This initiative will initially prioritize the mRNA-vaccine technology2 but could expand to other technologies in the future.

The intention is for these hubs to enable the establishment of production process at an industrial or semi-industrial level permitting training and provision of all necessary standard operating procedures for production and quality control. It is essential that the technology used is either free of intellectual property constraints in LMICs, or that such rights are made available to the technology hub and the future recipients of the technology through non-exclusive licenses to produce, export and distribute the COVID-19 vaccine in LMICs, including through the COVAX facility. Preference will be given to applicants who have already generated clinical data in humans, as such clinical data will contribute to accelerated approval of the vaccines in LMICs.

It is anticipated that WHO will work with funders and donors to mobilize financial support to establish the hubs and, as they are being established, to support the transfer of technology to selected manufacturers in LMICs, taking into consideration the need to establish permanent vaccine production capacity in regions where this is currently mostly absent. This broader objective will ensure that all WHO regions will be able to produce vaccines as essential preparedness measures against future infectious threats.

#### Countries including Canada, Bangladesh, Denmark, and African nations have capacity to produce millions of doses

Meldrum and Cheng 21-- ANDREW MELDRUM and MARIA CHENG, AP News, “Vaccine technology transfer center to open in South Africa,” 6/21/2021, <https://apnews.com/article/united-nations-south-africa-africa-technology-coronavirus-vaccine-3cbdee395502802b55db2b5c81e6becd>. (AG, DebateDrills)

Poor countries in Africa and elsewhere are facing dire shortages of COVID-19 jabs despite some countries having the ability to produce vaccines, lamented Lara Dovifat, a campaign and advocacy adviser for Doctors Without Borders. “The faster companies share the know-how, the faster we can put an end to this pandemic,” she said in a statement. Numerous factories in Canada, Bangladesh, Denmark and elsewhere have previously called for companies to immediately share their technology, saying their idle production lines could be churning out millions of doses if they weren’t hampered by intellectual property and other restrictions. More than 1 billion coronavirus vaccines have been administered globally, but fewer than 1% have been in poor countries. South Africa accounts for nearly 40% of Africa’s total recorded COVID-19 infections and is currently suffering a rapid surge, but vaccine rollout has been slow, marked by delayed deliveries among other factors. South Africa currently does not manufacture any COVID-19 vaccines from scratch, but its Aspen Pharmacare assembles the Johnson & Johnson shot by blending large batches of the ingredients sent by J&J and then putting the product in vials and packaging them, a process known as fill and finish. Earlier this month the company had to discard 2 million doses because they had ingredients produced in the U.S. in a factory under suspect conditions.

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

**pleasure is intrinsically valuable and pain disvaluable.**

**Moen 16** [Ole Martin Moen, Research Fellow in Philosophy at University of Oslo “An Argument for Hedonism” Journal of Value Inquiry (Springer), 50 (2) 2016: 267–281] SJDI

Let us start by observing, empirically, that **a widely shared judgment about intrinsic value and disvalue is that pleasure is intrinsically valuable and pain is intrinsically disvaluable.** **On virtually any proposed list of intrinsic values and disvalues (we will look at some of them below), pleasure is included among the intrinsic values and pain among the intrinsic disvalues.** This inclusion makes intuitive sense, moreover, for **there is something undeniably good about the way pleasure feels and something undeniably bad about the way pain feels, and neither the goodness of pleasure nor the badness of pain seems to be exhausted by the further effects that these experiences might have.** “Pleasure” and “pain” are here understood inclusively, as encompassing anything hedonically positive and anything hedonically negative.2 **The special value statuses of pleasure and pain are manifested in how we treat these experiences in our everyday reasoning about values.** If you tell me that you are heading for the convenience store, **I might ask: “What for?” This is a reasonable question, for when you go to the convenience store you usually do so**, not merely for the sake of going to the convenience store, but **for the sake of achieving something further that you deem to be valuable.** You might answer, for example: “To buy soda.” This answer makes sense, for soda is a nice thing and you can get it at the convenience store. I might further inquire, however: “What is buying the soda good for?” This further question can also be a reasonable one, for it need not be obvious why you want the soda. You might answer: “Well, I want it for the pleasure of drinking it.” **If I then proceed by asking “But what is the pleasure of drinking the soda good for?” the discussion is likely to reach an awkward end. The reason is that the pleasure is not good for anything further; it is simply that for which going to the convenience store and buying the soda is good.**3 As Aristotle observes**: “We never ask [a man] what his end is in being pleased, because we assume that pleasure is choice worthy in itself.**”4 Presumably, a similar story can be told in the case of pains, for if someone says “This is painful!” we never respond by asking: “And why is that a problem?” We take for granted that if something is painful, we have a sufficient explanation of why it is bad. If we are onto something in our everyday reasoning about values, it seems that **pleasure and pain are both places where we reach the end of the line in matters of value.**