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#### Text: The member nations of the World Trade Organization should appoint an international panel of scientists including National Academies and corresponding organizations to decide if they should reduce intellectual property protections for medicines and manage similar conflicts of interest between intellectual property. Member states ought to abide by the ruling produced by the panel.

#### International panel of science diplomats can rule over IP---that’s key to science diplomacy.

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At the global level, science diplomacy is defined as cooperation among countries in order to solve complex problems through scientific research and education (1). For example, science diplomacy plays an important role in resolving global issues related to the ecosystem (such as clean water, food safety, energy conservation, and preservation of the environment). It also addresses problems related to the healthcare industry. For example, scientists have served at the international level to forge the Middle Eastern Cancer Consortium a decade ago to facilitate better healthcare and improve cancer research in the region. Whether one considers science for diplomacy or diplomacy for science, international science collaborations benefit from allowing science diplomats (broadly defined as science envoys, science attaches, embassy fellows) to help establish positive international relationships between the U.S., Europe, Latin America, Africa or Asia, particularly when proprietary disputes arise (2, 3). These various types of science diplomats already exist; some, like embassy fellows and science envoys, have one-year appointments so their role may be limited, while attaches usually have two or three year appointments that may allow them to be more successful in long, protracted negotiations. In any event, we believe that scientists can play more of a role in advancing international scientific cooperation. A key point addressed here is how to balance security concerns against the need for free exchange of information needed for innovation and growth. Both the National Science Foundation and the National Institutes of Health are already engaged in supporting American science and strengthening collaborations abroad. Such efforts take advantage of international expertise, facilities, and equipment. Here, we provide a rationale for the use of diplomacy to address scientific challenges. This approach allows some scientists working as diplomats to help manage complex and potentially conflicting situations that arise between scientific communities and their governments. Such issues include managing disputes such as licensing agreements for intellectual property (IP) and providing protection of IP. International collaborations can not only support but also accelerate the advancement of science. However, collaborations may carry risk if IP is misappropriated for other purposes. International collaborations should have a basis in strategy and specific goals (for example, drug discovery) in order to justify the use of government and/or corporate funds. About a decade ago, a group of academics from the University of Manchester in the United Kingdom assembled the “Manchester Manifesto,” subtitled “Who Owns Science” (6). This document addressed the lack of alignment between commercial interests, intellectual rights, and credit to the researcher. In our (and commonly held) view, the groups representing these disparate values could benefit from diplomatic mediation. More recently, it has become increasing apparent that managing China as a science and technology superpower represents another challenge for the U.S. Resolution of issues such as ownership of IP, rights to reagents, or use of skilled laboratory personnel from international collaborations may require the efforts of science diplomats. There are few international offices or “guardians” to protect junior and senior scientists in corporate or academic sectors from misuse of reagents or piracy. China’s failure to respect IP rights, and the resulting piracy, has drawn much attention. The media have also focused on the failure of watchdog government agencies to detect and manage these unwanted activities. Industrial espionage compromises U.S. interests. Moreover, Chinese and Russian hackers have cyberattacked U.S. technology companies, financial institutions, media groups, and defense contractors. In 2018, industrial spying was even reported in a major medical school in New York City where scientists were alleged to have illegally shared research findings with Chinese companies. The U.S. has a long history of hiring research personnel from other countries to staff its laboratories and industrial R&D centers. These scientists and engineers have made critical contributions to our nation’s well-being and security. These young Chinese and South Asian graduates of U.S. programs a generation ago now staff our research enterprise. However, recent trends in U.S. graduate school applications in science, technology, engineering and mathematics (STEM) reflect a downturn in foreign applicants, particularly from China. It is becoming increasingly apparent that the number of American-born students seeking STEM degrees is not sufficient to satisfy future demands of our high-tech workforce. While our own educational reforms must be augmented, we cannot ignore the need to continue to recruit overseas talent. We believe that foreign scientists can continue to make critical discoveries in the U. S. provided that their talent is nurtured, developed, and harnessed for the common good. At the same time, American companies cannot hire foreign scientists if they take the ideas they generate in U.S. laboratories back to their home countries without proper credit or permission. If the advancement of science is to succeed, greater diplomatic cooperation is needed to solve and manage proprietary issues for the benefit of all (5, 6). So, how does one strike the proper balance between security and growth? Science is a universal social enterprise; international conferences lead to friendships and productive collaborations between nations. Given that the U.S. and Chinese governments recognize the need for international communication and collaboration then surely there should be a mechanism for adjudicating anticipated conflicts. One approach would be for government, industrial, and academic stakeholders to form an international panel of scientists and engineers to manage any conflicts of interest between the need to protect proprietary information crucial to a company’s competitive edge, and the need for students and young faculty members to publish their findings. Smaller scale efforts along these lines have recently given rise to unique global partnerships, such as fellowship support by major pharmaceutical companies, which aim to address these conflicts to the benefit of both parties. An added feature of such arrangements is that they often provide corporate financing for research (9). Can this corporate-academic partnership model be adapted to multinational joint R&D efforts while protecting IP? This question falls squarely within the purview of international science diplomacy, whereby science diplomats can establish rules of conduct governing joint global technology development with proper IP protection. Despite the highly publicized and legitimate piracy allegations against China, at least some data indicates that the Chinese legal system is responding positively to worldwide pressure to honor foreign IP. A 2016 study by Love, Helmers, and Eberhardt, for example, found that between 2006 and 2011, foreign companies brought over 10 percent of patent infringement cases in China, and won over 70 percent of those cases (10). Today, “win rates” average around 80 percent, and “injunction rates,” around 98 percent (10). As Chinese scientists and engineers increasingly enter the top tier of the innovation space, their growing awareness of their own need for IP protection could be a powerful motivating force for the protection of all IP. As stated earlier, science diplomats could catalyze this progress even further by direct negotiations with those parties involved in the conflicts. An obvious flaw in this optimistic outlook is that scientists in the U.S. wield more influence with their government than scientists in China wield with theirs. And to the extent that the Chinese government could be encouraging IP theft, this must be addressed first by those international companies/firms who want to do business with the Chinese. Chinese investments, as well as tech incubators and targeted acquisitions, can enable access to U.S. technologies for commercial development. Although this conveys a level of risk to the developers, it may provide valuable opportunities for U.S. companies as well. In many respects, the extensive engagement and collaboration in innovation between the U.S. and China, often characterized by open exchanges of ideas, talent, and technologies, can be mutually beneficial in enriching and accelerating innovation in both countries. In summary, we believe that science diplomats could help address the increasingly complex issues that arise between accelerating scientific and engineering advances, and the need to protect national security and corporate IP. We also propose that this might be accomplished by asking the National Academies to recommend academic, corporate, and government scientific leaders to serve on an international scientific advisory board, and for the corresponding organizations in other countries to do the same. Access to the free flow of information promotes new knowledge and innovation. A return to a more restrictive intellectual environment is not only harmful to progress, but also nearly impossible to manage in the current internet age. A good place to start would be to engage the newly appointed head of the White House Office of Science and Technology Policy (the Science Advisor to the President of the United States), and working groups within established organizations. These organizations include the American Association for the Advancement of Science (AAAS) or the National Academies of Science, Engineering and Medicine, and corresponding international organizations. What incentive is there for a busy and successful scientist to serve in such capacity? It is the same altruism that motivates us to accept assignments as journal editors, manuscript reviewers, or funding agency panelists for the advancement of science toward the greater good.

#### Solves every existential threat.

**Haynes 18**—research associate in the Neurobiology Department at Harvard Medical School (Trevor, “Science Diplomacy: Collaboration in a rapidly changing world,”<http://sitn.hms.harvard.edu/flash/2018/science-diplomacy-collaboration-rapidly-changing-world/>, dml) // Re-Cut Justin

Today’s world is extremely interconnected. Most of us take this fact for granted, but its implications cannot be overstated. The rate at which information, resources, and people are able to move from one part of the world to another continues to accelerate at an alarming rate. Undoubtedly, this development has done society immense good. In the last century, global life expectancy has doubled, the percentage of people living in extreme poverty has dropped by about 60%, and world literacy rates have increased by a similar margin. But while these statistics paint a promising picture of human civilization, human progress rests on a fragile foundation of international cooperation; the challenges presented by an interconnected world are immense. War, natural disasters, and economic collapse now exert their effects globally, creating economic and ecological disasters and mass human migrations on an unprecedented scale. And with the US pulling out of major multilateral agreements on trade, climate change mitigation, and denuclearization, you might wonder if our ability to collaborate across borders productively is really up to the task. Global challenges require global solutions, and global solutions require collaboration between countries both big and small, rich and poor, authoritative and democratic. There are few human enterprises capable of providing continuity across these differences, and as technological solutions are becoming available to some of our most pressing issues, two in particular will be necessary to getting the job done: science and diplomacy. While science has long been utilized as a means to reach political ends—think of British explorer James Cook’s mapping of unexplored continents or the United States’ Manhattan Project—a more formal integration of scientists into the diplomatic process is being undertaken. This effort, which has led to scientists and academics playing a direct role in foreign policy development and international relations, has given birth of a new branch of diplomacy: science diplomacy. What is science diplomacy? As both the term and concept of science diplomacy have only recently gained traction in scientific and diplomatic circles, it’s been given a variety of definitions. But common to them all is the focus on applying scientific expertise to an international effort. The focus of these efforts is to solve international problems collaboratively while balancing economic prosperity, environmental protection, and societal wellbeing. The challenge of reaching this balance in the face of a booming global population cannot be understated, but this new branch of diplomacy is already at work and is producing results. International agreements such as the Paris Climate Agreement and the Iran Nuclear Deal are two famous examples, and science diplomacy is also establishing international collaboration in many other important arenas. While these lesser known efforts may not dominate the headlines, they are quietly tackling the global issues of today and preparing us for those of tomorrow. Natural disasters don’t respect national boundaries (and neither does the aftermath) In 2013, the number of refugees displaced by natural disasters—hurricanes, droughts, earthquakes—outnumbered those displaced by war. Current projections estimate as many as 1 billion people may be displaced by natural disasters by the year 2050. That would mean 1 in 9 people on the planet displaced and looking for a home. Compare this to the estimated 12 million refugees displaced by the war in Syria, and a frightening picture begins to form. As natural disasters continue to increase in both their frequency and intensity, solutions for mitigating the risk of total catastrophe will be underpinned by science, technology, and the ability of the international community to collaborate. Many organizations are starting to tackle these problems through the use of science diplomacy. The center for Integrated Research on Disaster Risk (IRDR) is composed of ten national committees—a network of government sponsored research institutions across the world in countries ranging the political and economic scale. These working groups have committed to improving disaster-risk-reduction science and technology while providing guidance to policy makers charged with implementing disaster prevention and mitigation strategies. IRDR is governed by a committee comprising experienced scientists and natural disaster experts. Its members come from all over the world—the US, China, Uganda, Norway, Mexico, Venezuela, and more. The diversity of this organization starts at the top and is crucial to developing comprehensive risk-reduction strategies. Data and insights from countries with varying areas of expertise are being shared and built upon, facilitating more accurate natural disaster forecasting and better strategies for mitigating their destructive power. And by including representatives from countries of varying political and economic power in its leadership, IRDR ensures that its work will consider the needs of the global community at large, rather than just nations with considerable wealth and political standing. The results of this type of international collaboration speak for themselves. Although humanity is grappling with more natural disasters than ever before, deaths related to these incidents continue to trend downward. Operating outside of the typical political framework that dominates foreign relations, IRDR provides a model for effective collaboration across the geopolitical spectrum in the face of a major global issue. Explore or Exploit? Managing international spaces Over the last few decades the polar ice cap that covers much of the Arctic Ocean has been shrinking. So much so, that during the warm season vast areas of previously solid ice have become open waters, creating opportunities for new trade routes and exposing the Arctic’s enormous reserves of oil and natural gas. Depending on your values, this will sound either like an opportunity for huge economic development of the region or the inevitable exploitation of one of the last untouched natural territories on the planet. And if you live there, like the half a million indigenous people who currently do, how this territory is managed will determine where you can live, how (and if) you can make a living, and what the health of the ecosystems that have supported Arctic life for millennia will look like. Luckily, such a scenario was predicted decades ago. In 1987, Mikhail Gorbachev, then leader of the then Soviet Union, delivered a speech outlining his aspirations for the arctic to be explored rather than exploited—to radically reduce military presence, create a collaborative multinational research effort, cooperate on matters of environmental security, and open up the Northern Sea Route for trade. This speech laid the foundation for the Arctic Council (Figure 1), which is one of the most successful examples of science diplomacy at work. Composed of the eight Arctic nations, including geopolitical rivals US and Russia, and numerous groups of indigenous peoples, the Arctic Council was established to maintain Gorbachev’s vision for the region while giving the indigenous peoples a seat at the negotiating table. The council’s activities are conducted by six scientific and technology-based working groups who conduct research in the area and provide knowledge and recommendations to the council members. As a result of this research, and allowing scientists to take part in the negotiations, the Arctic council has enacted several legally binding agreements regarding the sustainable development and environmental protection of the Arctic Ocean. These agreements have facilitated cooperation on a number of important issues including search and rescue operations, prevention and containment of maritime oil pollution, and, most recently, enhanced data sharing and scientific research collaborations. Against a backdrop of rapidly deteriorating diplomatic relations, the US and Russia have co-chaired task forces that laid the foundation for these agreements, proving to the world that meaningful results can be achieved through the avenue of science diplomacy, regardless of geopolitics. Science diplomacy going forward The technical expertise that characterizes science diplomacy will continue to be in demand across many realms of foreign policy. For example, synthetic biology and gene-editing technology continue to factor into matters regarding agriculture and trade. Also, digital currencies, such as bitcoin, have changed the way economists and businesses are approaching markets. Finally, machine learning and artificial intelligence are being used by governments as a means for population control, giving rise to a new type of governance—digital authoritarianism. While this expertise will be necessary for managing such issues, building international coalitions can’t be done through a purely scientific and technical lens. Convincing others to cooperate means providing them with a convincing argument to do so, and in terms they understand and find compelling. To achieve this, scientists must be trained to communicate their expertise in a way that moves stakeholders in policy discussions to act. This means appealing to motivations they have been largely taught to put to the side—whether they be political, economic, or emotional in nature—without obscuring the data and insights they have to offer. For our leaders, policy makers, and diplomats to effectively understand issues underpinned by science and technology, experts in these fields must continue to be integrated into the mechanisms of governance. With scientists in the US running for elections in numbers like never before, we can expect this trend to continue. And in the face of a rising wave of nationalism across the world, it is crucial that we do everything we can to foster collaboration. The future of human civilization depends on it.

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#### Pharmaceutical innovation is the bedrock of US competitiveness and economic growth now – boosts the US manufacturing base and helps us outrun China.

Robert D. Atkinson, PhD, 19 [President @ Information Technology & Innovation Foundation, PhD City and Regional Planning], "China’s Biopharmaceutical Strategy: Challenge or Complement to U.S. Industry Competitiveness?," Information Technology & Innovation Foundation, 8-12-2019, <https://itif.org/publications/2019/08/12/chinas-biopharmaceutical-strategy-challenge-or-complement-us-industry> C.VC

Over the last two decades, China has successfully challenged American industrial competitiveness in many industries, but as China has gone all in on its “Made in China 2025” strategy, the challenge will increasingly be to U.S. advanced and innovation-based industries. However, America still maintains competitive advantage over many nations, including China, in the biopharmaceutical industry. In fact, since 2001, while U.S. manufacturing jobs have fallen, the number of biopharmaceutical jobs has increased over 20 percent. In short, biopharma is a U.S. manufacturing success story.

However, “Made in China 2025,” as well as other plans, target life sciences for global leadership. China is taking a range of steps, including regulatory changes, funding of biomedical research and venture capital (VC), restructuring of the industry to eliminate many smaller producers, expanding medical tourism, and expediting listings on the Hong Kong exchange, to propel China to become a major global biopharma competitor—particularly by developing a world-class generics industry. However, while some of these policy actions are fair and legitimate, many are not because they are “innovation mercantilist” in nature, seeking to unfairly benefit Chinse firms at the expense of U.S. and other foreign firms. In other words, China is seeking to challenge the United States in one of the most high-value-added, innovation-intensive industries in the world—the kind of industry for which the United States has held a competitive advantage for decades.

To be sure, the Chinese market is large, growing rapidly, and represents significant market opportunities for producers in the United States, so U.S. policy should continue to push for market access. However, Chinese policies, if coupled with potential U.S. policy errors—particularly drug price controls that would slow down U.S. biopharma innovation—could mean that within the next decade or two, the U.S. biopharmaceutical industry could lose significant market share and jobs to China, hurting not only the U.S. economy and workers, but also global biopharmaceutical innovation.1 However, unlike when the United States lost emerging technology industries such as solar panels to China, today, no one should be able to claim ignorance of China’s playbook and end game. Should U.S. policymakers decide it is in the U.S. national interest to have a globally leading life-sciences industry, they will need to respond appropriately, particularly ensuring U.S. policies, including drug-pricing policies, support industry investment in research and development (R&D) and innovation.

This report first discusses the competitive position of the U.S. biopharmaceutical industry and why a competitive industry is in the U.S. national interest. It then examines the competitive position of China’s biopharma industry, followed by a review of Chinese mercantilist industrial policies in other industries. The report then reviews China’s strategy and policies for growing the biopharmaceutical industry. Finally, it discusses how the U.S. government should respond.

The biopharmaceutical sector includes research, discovery, testing, and manufacturing of medicines and therapeutics that cure disease and improve patient health. As life-sciences industry experts David Beier and George Baeder have written, there are at least four essential policy components nations need for a strong life-sciences innovation industry: “1) strong research and development infrastructure (including skilled researchers); 2) effective intellectual property protection; 3) integration in global standards of trade, IP [intellectual property], and drug regulation; and 4) functioning markets offering sufficient reimbursement.”2 The United States is one of the few nations with all four components, which is a major reason why it is highly competitive in life sciences, although with recent calls for drug price controls, it is at risk of seeing a weakening of the second and fourth f actors.

These strengths are why employment in the biopharmaceutical industry (classified as a manufacturing industry by the U.S. government) grew 26 percent between 1998 and 2019, while total U.S. nonfarm employment increased 23 percent, and employment in manufacturing declined 27 percent.3 Moreover, wages in the industry exceeded the average private wage by 50 percent or more in 43 states, and by more than 75 percent in 24 states.4

The sector, along with medical devices, performed $111.8 billion of R&D in 2016 (the most recent year for which public data is available), of which $85.9 billion was self-funded.5 Of the total research performed, $79.4 billion was invested in the United States. Partly because 19 percent of its domestic employment was involved in research, the pharmaceutical industry accounted for 20.4 percent of all domestic R&D in the United States.6 Moreover, the United States increased its share of pharmaceutical R&D expenditures among developed countries between 1995 and 2010 from 43 percent to 57 percent.7 One reason is U.S. firms have kept most of their research activity at home, while European and Japanese firms have shifted some R&D to the United States.

This is why the United States remains the predominant powerhouse of drug discovery and production, ranking first in nearly all measures of innovation.8 The Biopharmaceutical Competitiveness and Investment Survey ranked the United States first among mature markets in 2017, followed by Switzerland, Germany, and the United Kingdom.9 The United States scored higher than the average of its top-three competitors in each of the survey’s five categories, in addition to recently being ranked as the top location for life-sciences jobs in the world.10 That same year, 11 of the top 25 pharmaceutical companies were headquartered in the United States, accounting for 48 percent of total sales from this group. Moreover, in 2015, the United States attracted 74 percent of all worldwide venture-capital investments in the biopharmaceutical industry.11

The United States leads the world in life-sciences innovation. In the 2000s, more new chemical entities were developed and approved by regulatory authorities in the United States than in the next five nations—Switzerland, Japan, the United Kingdom, Germany, and France—combined.12 Broadening the lens to the years 1997 to 2016, U.S.-headquartered enterprises accounted for 42 percent of new chemical and biological entities introduced and approved around the world, far outpacing contributions from European Union member countries, Japan, China, and other nations.13

But this has not always been the case. In the latter half of the 1970s, European-headquartered enterprises introduced more than twice as many new drugs to the world as did those in the United States (149 to 66).14 Throughout the 1980s, fewer than 10 percent of new active substances were introduced first in the United States, as figure 1 shows. And, as recently as 1990, the global research-based pharmaceutical industry invested 50 percent more in Europe than in the United States.15 As Shankar Singham of the Institute of Economic Affairs noted, “Europe was the unquestioned center of biopharmaceutical research and development for centuries, challenged only by Japan in the post-war period.”16

Figure 1: U.S. share of new active substances (NAS) launched in world market17

Yet, in recent decades, that picture has changed. Whereas less than 10 percent of new drugs were first introduced in the United States in the 1980s, by the 2010s, more than 60 percent of new drugs were first introduced in the United States.18 By 2006, pharmaceutical companies invested 40 percent more in the United States than in Europe. And the United States has been the world’s largest funder of biomedical R&D investment over the past two decades—a share some analysts have estimated has reached as high as 80 percent.19 This has contributed to an unprecedented era of life-sciences innovation, and the retention and creation of good U.S. jobs. Over the last decade, biopharmaceutical companies have invested over half a trillion dollars in R&D, while more than 350 new medicines—many firsts of their kind—have been approved by the Food and Drug Administration (FDA).20

America’s wresting of global life-sciences leadership has been no accident, but rather the result of a series of intentional policy decisions designed to make America the world’s preeminent location for life-sciences research, product commercialization, and production. For instance, the United States’ introduction of the world’s first R&D tax credit in 1981 played a catalytic role in spurring greater levels of private-sector R&D. In the life-sciences sector, this was complemented by the 1986 introduction of the orphan drug tax credit, which allows drug manufacturers to claim a tax credit on research costs for orphan drugs (i.e., drugs for rare diseases affecting 200,000 or fewer U.S. patients). The 1992 introduction of the bipartisan Prescription Drug User Fee Act, which authorized the FDA to collect user fees associated with applications from the biopharmaceutical industry for regulatory approval of new human-drug submissions, has played a pivotal role in reducing the time it takes the FDA to make safety and efficacy determinations for new drugs—from the over 30 months it took on average in the mid-1980s to less than 10 months today.21 America’s strong IP system—including allowing 12 years of data exclusivity for biologics and providing a period of marketing exclusivity for drugs independent of exclusive patent rights, as well as providing patent linkage and patent term extension through the Hatch-Waxman Act—has helped spur investment.

Robust funding for the National Institutes of Health (NIH), especially the doubling of funding in the late 1990s and early 2000s, has helped lay the groundwork for robust biopharma innovation.22 The United States also benefits greatly from having a drug-pricing system that permits companies to earn sufficient revenues from one generation of biomedical innovation to reinvest in the next. That matters greatly because, as the Organization for Economic Cooperation and Development (OECD) has written, “There exists a high degree of correlation between pharmaceutical sales revenues and R&D expenditures.”23 Limited government price controls also make investing in the United States more attractive than in many other nations.24

The lesson of the U.S. gain in global competitive advantage in the biopharmaceutical industry should be clear. It was not based on absolute advantage (e.g., some nations being good in agriculture because they have a lot of arable land). Rather, it was and is based on competitive advantage (e.g., factors that are malleable by policy, such as a strong drug-approval system and reasonable drug pricing). As such, have competitive advantage in industries such as biopharmaceutical is something that has to be earned and worked at to retain. As some European nations and nations such as Japan found to their distress, competitive advantage is not a birthright; it can be lost. That should be the message for the United States: while the United States is doing well in the industry now, it could easily lose that advantage, particularly to China, which has targeted the industry for global leadership. This means that the United States needs to keep in place the right policies and make them even stronger while at the same time continuing to press China to roll back its innovation mercantilist practices in this industry.

#### Reducing IP protections kills incentives for medical advancements – harms innovation and long-term economic growth.

James Bacchus, JD, 20 [Adjunct Fellow @ Cato Institute, JD Florida State University, MA History from Yale, former Congressman from Florida], "An Unnecessary Proposal: A WTO Waiver of Intellectual Property Rights for COVID-19 Vaccines," Cato Institute, 12-16-2020, <https://www.cato.org/free-trade-bulletin/unnecessary-proposal-wto-waiver-intellectual-property-rights-covid-19-vaccines> C.VC

At the heart of this emerging trade debate is a belief by many people worldwide that all medicines should be “global public goods.” There is little room in such a belief for consideration of any rights to IP. As one group of United Nations human rights experts expressed: “There is no room for … profitability in decision‐​making about access to vaccines, essential tests and treatments, and all other medical goods, services and supplies that are at the heart of the right to the highest attainable standard of health for all.”16

This view is myopic. Subordinating IP rights temporarily to pressing public needs during a pandemic or other global health emergency is one thing. Eliminating any consideration of “profitability” in all policymaking relating to “access to vaccines, essential tests and treatments, and all other medical goods, services and supplies” is quite another.17 To be sure, there is a superficial moral appeal in such a view. But does this moral appeal hold up if such a “human rights” approach does not result in meeting those urgent public needs?

With the belief that medicines should be “public goods,” there is literally no support in some quarters for the application of the WTO TRIPS Agreement to IP rights in medicines. Any protection of the IP rights in such goods is viewed as a violation of human rights and of the overall public interest. This view, though, does not reflect the practical reality of a world in which many medicines would simply not exist if it were not for the existence of IP rights and the protections they are afforded.

Technically, IP rights are exceptions to free trade. A long‐​standing general discussion in the WTO has been about when these exceptions to free trade should be allowed and how far they should be extended. The continuing debate over IP rights in medicines is only the most emotional part of this overall conversation. Because developed countries have, historically, been the principal sources of IP rights, this lengthy WTO dispute has largely been between developed countries trying to uphold IP rights and developing countries trying to limit them. The debate over the discovery and the distribution of vaccines for COVID-19 is but the latest global occasion for this ongoing discussion.

The primary justification for granting and protecting IP rights is that they are incentives for innovation, which is the main source for long‐​term economic growth and enhancements in the quality of human life. IP rights spark innovation by “enabling innovators to capture enough of the benefits of their own innovative activity to justify taking considerable risks.”18 The knowledge from innovations inspired by IP rights spills over to inspire other innovations. The protection of IP rights promotes the diffusion, domestically and internationally, of innovative technologies and new know‐​how. Historically, the principal factors of production have been land, labor, and capital. In the new pandemic world, perhaps an even more vital factor is the creation of knowledge, which adds enormously to “the wealth of nations.” Digital and other economic growth in the 21st century is increasingly ideas‐​based and knowledge intensive. Without IP rights as incentives, there would be less new knowledge and thus less innovation.

In the short term, undermining private IP rights may accelerate distribution of goods and services—where the novel knowledge that went into making them already exists. But in the long term, undermining private IP rights would eliminate the incentives that inspire innovation, thus preventing the discovery and development of knowledge for new goods and services that the world needs. This widespread dismissal of the link between private IP rights and innovation is perhaps best reflected in the fact that although the United Nations Sustainable Development Goals for 2030 aspire to “foster innovation,” they make no mention of IP rights.19

As Stephen Ezell and Nigel Cory of the Information Technology and Innovation Foundation wrote, “A fundamental fault line in the debate over intellectual property pertains to the need to achieve a reasoned balance between access and exclusive rights.”20 This fault line is much on display in the WTO rules on IP rights. These rules recognize that “intellectual property rights are private rights” and that rules and disciplines are necessary for “the provision of effective and appropriate means for the enforcement of trade‐​related intellectual property rights.”21 Yet, where social and economic welfare is at stake, WTO members have sought to strike a balance in these rules between upholding IP rights and fulfilling immediate domestic needs.

Conclusion

The solution is not another impassioned and prolonged multilateral impasse inside the WTO. The solution is multilateral action in international institutions and international endeavors outside the WTO. It is the slow pace and the uncertain success in those other global arenas that have led developing countries to seek a waiver from the WTO. Rather than continuing to press for an unnecessary WTO waiver, they should redouble their combined efforts to reach solutions in those other arenas. And the United States, the European Union, the United Kingdom, and other developed countries should do more to work with them toward that end.

In no event should IP rights become legal obstacles to ensuring early access to affordable medicines for everyone in the world during a pandemic that has already killed more than a million people worldwide and threatens to kill millions more. But also, in no event should WTO members act in ways that would eliminate the incentives that are essential to inspire the innovations that make new medicines possible.

The right balance in the WTO trade rules on IP is a balance that provides all countries with sufficient flexibility to protect IP rights while also promoting access to life‐​saving medicines.22 For COVID-19 medicines, there is no proof at this time that this balance does not exist. Maintaining this balance must remain the aim of the WTO, and it must be the aim of every endeavor of multilateral cooperation in the fight to end this pandemic.

#### Decline of US economic leadership destabilizes the international order and causes extinction.

Haas 17 – Richard Haas, President of the Council on Foreign Relations, former Director of Policy Planning for the US State Department (2001-2003), and President George W. Bush's special envoy to Northern Ireland and Coordinator for the Future of Afghanistan. [A World in Disarray: American Foreign Policy and the Crisis of the Old Order, 1-10-17, Penguin Press]

A large portion of the burden of creating and maintaining order at the regional or global level will fall on the United States. This is inevitable for several reasons, only one of which is that the United States is and will likely remain the most powerful country in the world for decades to come. The corollary to this point is that no other country or group of countries has either the capacity or the mind-set to build a global order. Nor can order ever be expected to emerge automatically; there is no invisible hand in the geopolitical marketplace. Again, a large part of the burden (or, more positively, opportunity) falls on the principal power of the day. There is more than a little self-interest at stake. The United States cannot remain aloof, much less unaffected by a world in disarray. Globalization is more reality than choice. At the regional level, the United States actually faces the opposite problem, namely, that certain actors do have the mind-set and means to shape an order. The problem is that their views of order are in part or in whole incompatible with U.S. interests. Examples would include Iran and ISIS in the Middle East, China in Asia, and Russia in Europe.

It will not be an easy time for the United States. The sheer number and range of challenges is daunting. There are a large number of actors and forces to contend with. Alliances, normally created in opposition to some country or countries, may not be as useful a vehicle in a world in which not all foes are always foes and not all friends are always friendly. Diplomacy will count for a great deal; there will be a premium on dexterity. Consultations that aim to affect the actions of other governments and their leaders are likely to matter more than negotiations that aim to solve problems.

Another reality is that the United States for all its power cannot impose order. Partially this reflects what might be called structural realities, namely, that no country can contend with global challenges on its own given the very nature of these challenges. The United States could reduce its carbon footprint dramatically, but the effect on global climate would be modest if India and China failed to follow suit. Similarly, on its own the United States cannot maintain a world trading system or successfully combat terrorism or disease. Adding to these realities are resource limits. The United States cannot provide all the troops or dollars to maintain order in the Middle East and Europe and Asia and South Asia. There is simply too much capability in too many hands. Unilateralism is rarely a serious foreign policy option. Partners are essential. That is one of the reasons why sovereign obligation is a desirable compass for U.S. foreign policy. Earlier I made the case that it represents realism for an era of globalization. It also is a natural successor to containment, the doctrine that guided the United States for the four decades of the Cold War. There are basic differences, however. Containment was about holding back more than bringing in and was designed for an era when rivals were almost always adversaries and in which the challenges were mostly related to classical geopolitical competition.1 Sovereign obligation, by contrast, is designed for a world in which sometime rivals are sometime partners and in which collective efforts are required to meet common challenges.

Up to this point, we have focused on what the United States needs to do in the world to promote order. That is what one would expect from a book about international relations and American foreign policy. But a focus on foreign policy is not enough. National security is a coin with two sides, and what the United States does at home, what is normally thought of as belonging to the domestic realm, is every bit as much a part of national security as foreign policy. It is best to understand the issue as guns and butter rather than guns versus butter.

When it comes to the domestic side, the argument is straightforward. In order to lead and compete and act effectively in the world, the United States needs to put its house in order. I have written on what this entails in a book titled Foreign Policy Begins at Home.2 This was sometimes interpreted as suggesting a turn away from foreign policy. It was nothing of the sort. Foreign policy begins at home, but it ends there only at the country’s peril.3

Earlier I mentioned that the United States has few unilateral options, that there are few if any things it can do better alone than with others. The counterpart to this claim is that the world cannot come up with the elements of a working order absent the United States. The United States is not sufficient, but it is necessary. It is also true that the United States cannot lead or act effectively in the world if it does not have a strong domestic foundation. National security inevitably requires significant amounts of human, physical, and financial resources to draw on. The better the United States is doing economically, the more it will have available in the way of resources to devote to what it wants and needs to do abroad without igniting a divisive and distracting domestic debate as to priorities. An additional benefit is that respect for the United States and for the American political, social, and economic model (along with a desire to emulate it) will increase only if it is seen as successful.

The most basic test of the success of the model will be economic growth. U.S. growth levels may appear all right when compared with what a good many other countries are experiencing, but they are below what is needed and fall short of what is possible. There is no reason why the United States is not growing in the range of 3 percent or even higher other than what it is doing and, more important, not doing.4

### Underview

#### 1] Use util – it’s impartial, specific to public actors, and resolves infinite regress which explains all value. Reject flawed calc indicts that misunderstand happiness and rely on problematic intuitions.

Greene 15 — (Joshua Greene, Professor of Psychology @ Harvard, being interviewed by Russ Roberts, “Joshua Greene on Moral Tribes, Moral Dilemmas, and Utilitarianism”, The Library of Economics and Liberty, 1-5-15, Available Online at <https://www.econtalk.org/joshua-greene-on-moral-tribes-moral-dilemmas-and-utilitarianism/#audio-highlights>, accessed 5-17-20, HKR-AM) \*\*NB: Guest = Greene, and only his lines are highlighted/underlined

Guest: Okay. So, I think utilitarianism is very much misunderstood. And this is part of the reason why we shouldn't even call it utilitarianism at all. We should call it what I call 'deep pragmatism', which I think better captures what I think utilitarianism is really like, if you really apply it in real life, in light of an understanding of human nature. But, we can come back to that. The idea, going back to the tragedy of common-sense morality is you've got all these different tribes with all of these different values based on their different ways of life. What can they do to get along? And I think that the best answer that we have is--well, let's back up. In order to resolve any kind of tradeoff, you have to have some kind of common metric. You have to have some kind of common currency. And I think that what utilitarianism, whether it's the moral truth or not, is **provide** a kind of **common currency**. So, what is utilitarianism? It's basically the idea that--it's really two ideas put together. One is the idea of impartiality. That is, at least **as social decision makers**, we should regard everybody's interests as of equal worth. Everybody counts the same. And then you might say, 'Well, but okay, what does it mean to count everybody the same? What is it that really matters for you and for me and for everybody else?' And there the utilitarian's answer is what is sometimes called, somewhat accurately and somewhat misleadingly, happiness. But it's not really happiness in the sense of cherries on sundaes, things that make you smile. It's really the quality of conscious experience. So, the idea is that if you start with anything that you value, and say, 'Why do you care about that?' and keep asking, 'Why do you care about that?' or 'Why do you care about that?' you ultimately come down to the quality of someone's conscious experience. So if I were to say, 'Why did you go to work today?' you'd say, 'Well, I need to make money; and I also enjoy my work.' 'Well, what do you need your money for?' 'Well, I need to have a place to live; it costs money.' 'Well, why can't you just live outside?' 'Well, I need a place to sleep; it's cold at night.' 'Well, what's wrong with being cold?' 'Well, it's uncomfortable.' 'What's wrong with being uncomfortable?' 'It's just bad.' Right? At some point if you keep asking why, why, why, it's going to come down to the conscious experience--in Bentham's terms, again somewhat misleading, the pleasure and pain of either you or somebody else that you care about. So the utilitarian idea is to say, Okay, we all have our pleasures and pains, and as a moral philosophy we should all count equally. And so a good standard for **resolving** **public** **disagreements** is to say we should go with whatever option is going to produce the best overall experience for the people who are affected. Which you can think of as shorthand as maximizing happiness--although I think that that's somewhat misleading. And the solution has a lot of merit to it. But it also has endured a couple of centuries of legitimate criticism. And one of the biggest criticisms--and now we're getting back to the Trolley cases, is that utilitarianism doesn't adequately account for people's rights. So, take the footbridge case. It seems that it's wrong to push that guy off the footbridge. Even if you stipulate that you can save more people's lives. And so anyone who is going to defend utilitarianism as a meta-morality--that is, a solution to the tragedy of common sense morality, as a moral system to adjudicate among competing tribal moral systems--if you are going to defend it in that way, as I do, you have to face up to these philosophical challenges: is it okay to kill on person to save five people in this kind of situation? So I spend a lot of the book trying to understand the psychology of cases like the footbridge case. And you mention these being kind of unrealistic and weird cases. That's actually part of my defense.

Russ: Yeah, there's some plus to it, I agree.

Guest: Right. And the idea is that your amygdala is responding to an act of violence. And most acts of violence are bad. And so it is good for us to have a gut reaction, which is really a reaction in your amygdala that's then sending a signal to your ventromedial prefrontal cortex and so on and so forth, and we can talk about that. It's good to have that reaction that says, 'Don't push people off of footbridges.' But if you construct a case in which you stipulate that committing this act of violence is going to lead to the greater good, and it still feels wrong, I think it's a mistake to interpret that gut reaction as a challenge to the theory that says we should do whatever in general is going to promote the greater good. That is, our gut reactions are somewhat limited. They are good for everyday life. It's good that you have a gut reaction that says, 'Don't go shoving people off of high places.' But that shouldn't be a veto against a general idea that otherwise makes a lot of sense. Which is that in the modern world, we have a lot of different competing value systems, and that the way to resolve disagreements among those different competing value systems is to say, 'What's going to actually produce the best consequences?' And best consequences measured in terms of the quality of people's experience. So, that's kind of completing or partially completing the circle between the tragedy of the commons, that discussion, and how do we get to the Trolleys.

#### 2] Extinction outweighs---it’s the upmost moral evil and disavowal of the risk makes it more likely.

Burns 2017 (Elizabeth Finneron-Burns is a Teaching Fellow at the University of Warwick and an Affiliated Researcher at the Institute for Futures Studies in Stockholm, What’s wrong with human extinction?, <http://www.tandfonline.com/doi/pdf/10.1080/00455091.2016.1278150?needAccess=true>, Canadian Journal of Philosophy, 2017)

Many, though certainly not all, people might believe that it would be wrong to bring about the end of the human species, and the reasons given for this belief are various. I begin by considering four reasons that could be given against the moral permissibility of human extinction. I will argue that only those reasons that impact the people who exist at the time that the extinction or the knowledge of the upcoming extinction occurs, can explain its wrongness. I use this conclusion to then consider in which cases human extinction would be morally permissible or impermissible, arguing that there is only a small class of cases in which it would not be wrong to cause the extinction of the human race or allow it to happen. 2.1. It would prevent the existence of very many happy people One reason of human extinction might be considered to be wrong lies in the value of human life itself. The thought here might be that it is a good thing for people to exist and enjoy happy lives and extinction would deprive more people of enjoying this good. The ‘good’ in this case could be understood in at least two ways. According to the first, one might believe that you benefit a person by bringing them into existence, or at least, that it is good for that person that they come to exist. The second view might hold that if humans were to go extinct, the utility foregone by the billions (or more) of people who could have lived but will now never get that opportunity, renders allowing human extinction to take place an incidence of wrongdoing. An example of this view can be found in two quotes from an Effective Altruism blog post by Peter Singer, Nick Beckstead and Matt Wage: One very bad thing about human extinction would be that billions of people would likely die painful deaths. But in our view, this is by far not the worst thing about human extinction. The worst thing about human extinction is that there would be no future generations. Since there could be so many generations in our future, the value of all those generations together greatly exceeds the value of the current generation. (Beckstead, Singer, and Wage 2013) The authors are making two claims. The first is that there is value in human life and also something valuable about creating future people which gives us a reason to do so; furthermore, it would be a very bad thing if we did not do so. The second is that, not only would it be a bad thing for there to be no future people, but it would actually be the worst thing about extinction. Since happy human lives have value, and the number of potential people who could ever exist is far greater than the number of people who exist at any one time, even if the extinction were brought about through the painful deaths of currently existing people, the former’s loss would be greater than the latter’s. Both claims are assuming that there is an intrinsic value in the existence of potential human life. The second claim makes the further assumption that the forgone value of the potential lives that could be lived is greater than the disvalue that would be accrued by people existing at the time of the extinction through suffering from painful and/or premature deaths. The best-known author of the post, Peter Singer is a prominent utilitarian, so it is not surprising that he would lament the potential lack of future human lives per se. However, it is not just utilitarians who share this view, even if implicitly. Indeed, other philosophers also seem to imply that they share the intuition that there is just something wrong with causing or failing to prevent the extinction of the human species such that we prevent more ‘people’ from having the ‘opportunity to exist’. Stephen Gardiner (2009) and Martin O’Neill (personal correspondence), both sympathetic to contract theory, for example, also find it intuitive that we should want more generations to have the opportunity to exist, assuming that they have worth-living lives, and I find it plausible to think that many other people (philosophers and non-philosophers alike) probably share this intuition. When we talk about future lives being ‘prevented’, we are saying that a possible person or a set of possible people who could potentially have existed will now never actually come to exist. To say that it is wrong to prevent people from existing could either mean that a possible person could reasonably reject a principle that permitted us not to create them, or that the foregone value of their lives provides a reason for rejecting any principle that permits extinction. To make the first claim we would have to argue that a possible person could reasonably reject any principle that prevented their existence on the grounds that it prevented them in particular from existing. However, this is implausible for two reasons. First, we can only wrong someone who did, does or will actually exist because wronging involves failing to take a person’s interests into account. When considering the permissibility of a principle allowing us not to create Person X, we cannot take X’s interest in being created into account because X will not exist if we follow the principle. By considering the standpoint of a person in our deliberations we consider the burdens they will have to bear as a result of the principle. In this case, there is no one who will bear any burdens since if the principle is followed (that is, if we do not create X), X will not exist to bear any burdens. So, only people who do/will actually exist can bear the brunt of a principle, and therefore occupy a standpoint that is owed justification. Second, existence is not an interest at all and a possible person is not disadvantaged by not being caused to exist. Rather than being an interest, it is a necessary requirement in order to have interests. Rivka Weinberg describes it as ‘neutral’ because causing a person to exist is to create a subject who can have interests; existence is not an interest itself.3 In order to be disadvantaged, there must be some detrimental effect on your interests. However, without existence, a person does not have any interests so they cannot be disadvantaged by being kept out of existence. But, as Weinberg points out, ‘never having interests itself could not be contrary to people’s interests since without interest bearers, there can be no ‘they’ for it to be bad for’ (Weinberg 2008, 13). So, a principle that results in some possible people never becoming actual does not impose any costs on those ‘people’ because nobody is disadvantaged by not coming into existence.4 It therefore seems that it cannot be wrong to fail to bring particular people into existence. This would mean that no one acts wrongly when they fail to create another person. Writ large, it would also not be wrong if everybody decided to exercise their prerogative not to create new people and potentially, by consequence, allow human extinction. One might respond here by saying that although it may be permissible for one person to fail to create a new person, it is not permissible if everyone chooses to do so because human lives have value and allowing human extinction would be to forgo a huge amount of value in the world. This takes us to the second way of understanding the potential wrongness of preventing people from existing — the foregone value of a life provides a reason for rejecting any principle that prevents it. One possible reply to this claim turns on the fact that many philosophers acknowledge that the only, or at least the best, way to think about the value of (individual or groups of) possible people’s lives is in impersonal terms (Parfit 1984; Reiman 2007; McMahan 2009). Jeff McMahan, for example, writes ‘at the time of one’s choice there is no one who exists or will exist independently of that choice for whose sake one could be acting in causing him or her to exist … it seems therefore that any reason to cause or not to cause an individual to exist … is best considered an impersonal rather than individual-affecting reason’ (McMahan 2009, 52). Another reply along similar lines would be to appeal to the value that is lost or at least foregone when we fail to bring into existence a next (or several next) generations of people with worth-living lives. Since ex hypothesi worth-living lives have positive value, it is better to create more such lives and worse to create fewer. Human extinction by definition is the creation of no future lives and would ‘deprive’ billions of ‘people’ of the opportunity to live worth-living lives. This might reduce the amount of value in the world at the time of the extinction (by killing already existing people), but it would also prevent a much vaster amount of value in the future (by failing to create more people). Both replies depend on the impersonal value of human life. However, recall that in contractualism impersonal values are not on their own grounds for reasonably rejecting principles. Scanlon himself says that although we have a strong reason not to destroy existing human lives, this reason ‘does not flow from the thought that it is a good thing for there to be more human life rather than less’ (104). In contractualism, something cannot be wrong unless there is an impact on a person. Thus, neither the impersonal value of creating a particular person nor the impersonal value of human life writ large could on its own provide a reason for rejecting a principle permitting human extinction. It seems therefore that the fact that extinction would deprive future people of the opportunity to live worth-living lives (either by failing to create either particular future people or future people in general) cannot provide us with a reason to consider human extinction to be wrong. Although the lost value of these ‘lives’ itself cannot be the reason explaining the wrongness of extinction, it is possible the knowledge of this loss might create a personal reason for some existing people. I will consider this possibility later on in section (d). But first I move to the second reason human extinction might be wrong per se. 2.2. It would mean the loss of the only known form of intelligent life and all civilization and intellectual progress would be lost A second reason we might think it would be wrong to cause human extinction is the loss that would occur of the only (known) form of rational life and the knowledge and civilization that that form of life has created. One thought here could be that just as some might consider it wrong to destroy an individual human heritage monument like the Sphinx, it would also be wrong if the advances made by humans over the past few millennia were lost or prevented from progressing. A related argument is made by those who feel that there is something special about humans’ capacity for rationality which is valuable in itself. Since humans are the only intelligent life that we know of, it would be a loss, in itself, to the world for that to end. I admit that I struggle to fully appreciate this thought. It seems to me that Henry Sidgwick was correct in thinking that these things are only important insofar as they are important to humans (Sidgwick 1874, I.IX.4).5 If there is no form of intelligent life in the future, who would there be to lament its loss since intelligent life is the only form of life capable of appreciating intelligence? Similarly, if there is no one with the rational capacity to appreciate historic monuments and civil progress, who would there be to be negatively affected or even notice the loss?6 However, even if there is nothing special about human rationality, just as some people try to prevent the extinction of nonhuman animal species, we might think that we ought also to prevent human extinction for the sake of biodiversity. The thought in this, as well as the earlier examples, must be that it would somehow be bad for the world if there were no more humans even though there would be no one for whom it is bad. This may be so but the only way to understand this reason is impersonally. Since we are concerned with wrongness rather than badness, we must ask whether something that impacts no one’s well-being, status or claims can be wrong. As we saw earlier, in the contractualist framework reasons must be personal rather than impersonal in order to provide grounds for reasonable rejection (Scanlon 1998, 218–223). Since the loss of civilization, intelligent life or biodiversity are per se impersonal reasons, there is no standpoint from which these reasons could be used to reasonably reject a principle that permitted extinction. Therefore, causing human extinction on the grounds of the loss of civilization, rational life or biodiversity would not be wrong. 2.3. Existing people would endure physical pain and/or painful and/or premature deaths Thinking about the ways in which human extinction might come about brings to the fore two more reasons it might be wrong. It could, for example, occur if all humans (or at least the critical number needed to be unable to replenish the population, leading to eventual extinction) underwent a sterilization procedure. Or perhaps it could come about due to anthropogenic climate change or a massive asteroid hitting the Earth and wiping out the species in the same way it did the dinosaurs millions of years ago. Each of these scenarios would involve significant physical and/or non-physical harms to existing people and their interests. Physically, people might suffer premature and possibly also painful deaths, for example. It is not hard to imagine examples in which the process of extinction could cause premature death. A nuclear winter that killed everyone or even just every woman under the age of 50 is a clear example of such a case. Obviously, some types of premature death themselves cannot be reasons to reject a principle. Every person dies eventually, sometimes earlier than the standard expected lifespan due to accidents or causes like spontaneously occurring incurable cancers. A cause such as disease is not a moral agent and therefore it cannot be wrong if it unavoidably kills a person prematurely. Scanlon says that the fact that a principle would reduce a person’s well-being gives that person a reason to reject the principle: ‘components of well-being figure prominently as grounds for reasonable rejection’ (Scanlon 1998, 214). However, it is not settled yet whether premature death is a setback to well-being. Some philosophers hold that death is a harm to the person who dies, whilst others argue that it is not.7 I will argue, however, that regardless of who is correct in that debate, being caused to die prematurely can be reason to reject a principle when it fails to show respect to the person as a rational agent. Scanlon says that recognizing others as rational beings with interests involves seeing reason to preserve life and prevent death: ‘appreciating the value of human life is primarily a matter of seeing human lives as something to be respected, where this involves seeing reasons not to destroy them, reasons to protect them, and reasons to want them to go well’ (Scanlon 1998, 104). The ‘respect for life’ in this case is a respect for the person living, not respect for human life in the abstract. This means that we can sometimes fail to protect human life without acting wrongfully if we still respect the person living. Scanlon gives the example of a person who faces a life of unending and extreme pain such that she wishes to end it by committing suicide. Scanlon does not think that the suicidal person shows a lack of respect for her own life by seeking to end it because the person whose life it is has no reason to want it to go on. This is important to note because it emphasizes the fact that the respect for human life is person-affecting. It is not wrong to murder because of the impersonal disvalue of death in general, but because taking someone’s life without their permission shows disrespect to that person. This supports its inclusion as a reason in the contractualist formula, regardless of what side ends up winning the ‘is death a harm?’ debate because even if death turns out not to harm the person who died, ending their life without their consent shows disrespect to that person. A person who could reject a principle permitting another to cause his or her premature death presumably does not wish to die at that time, or in that manner. Thus, if they are killed without their consent, their interests have not been taken into account, and they have a reason to reject the principle that allowed their premature death.8 This is as true in the case of death due to extinction as it is for death due to murder. However, physical pain may also be caused to existing people without killing them, but still resulting in human extinction. Imagine, for example, surgically removing everyone’s reproductive organs in order to prevent the creation of any future people. Another example could be a nuclear bomb that did not kill anyone, but did painfully render them infertile through illness or injury. These would be cases in which physical pain (through surgery or bombs) was inflicted on existing people and the extinction came about as a result of the painful incident rather than through death. Furthermore, one could imagine a situation in which a bomb (for example) killed enough people to cause extinction, but some people remained alive, but in terrible pain from injuries. It seems uncontroversial that the infliction of physical pain could be a reason to reject a principle. Although Scanlon says that an impact on well-being is not the only reason to reject principles, it plays a significant role, and indeed, most principles are likely to be rejected due to a negative impact on a person’s well-being, physical or otherwise. It may be queried here whether it is actually the involuntariness of the pain that is grounds for reasonable rejection rather than the physical pain itself because not all pain that a person suffers is involuntary. One can imagine acts that can cause physical pain that are not rejectable — base jumping or life-saving or improving surgery, for example. On the other hand, pushing someone off a cliff or cutting him with a scalpel against his will are clearly rejectable acts. The difference between the two cases is that in the former, the person having the pain inflicted has consented to that pain or risk of pain. My view is that they cannot be separated in these cases and it is involuntary physical pain that is the grounds for reasonable rejection. Thus, the fact that a principle would allow unwanted physical harm gives a person who would be subjected to that harm a reason to reject the principle. Of course the mere fact that a principle causes involuntary physical harm or premature death is not sufficient to declare that the principle is rejectable — there might be countervailing reasons. In the case of extinction, what countervailing reasons might be offered in favour of the involuntary physical pain/ death-inducing harm? One such reason that might be offered is that humans are a harm to the natural environment and that the world might be a better place if there were no humans in it. It could be that humans might rightfully be considered an all-things-considered hindrance to the world rather than a benefit to it given the fact that we have been largely responsible for the extinction of many species, pollution and, most recently, climate change which have all negatively affected the natural environment in ways we are only just beginning to understand. Thus, the fact that human extinction would improve the natural environment (or at least prevent it from degrading further), is a countervailing reason in favour of extinction to be weighed against the reasons held by humans who would experience physical pain or premature death. However, the good of the environment as described above is by definition not a personal reason. Just like the loss of rational life and civilization, therefore, it cannot be a reason on its own when determining what is wrong and countervail the strong personal reasons to avoid pain/death that is held by the people who would suffer from it.9 Every person existing at the time of the extinction would have a reason to reject that principle on the grounds of the physical pain they are being forced to endure against their will that could not be countervailed by impersonal considerations such as the negative impact humans may have on the earth. Therefore, a principle that permitted extinction to be accomplished in a way that caused involuntary physical pain or premature death could quite clearly be rejectable by existing people with no relevant countervailing reasons. This means that human extinction that came about in this way would be wrong. There are of course also additional reasons they could reject a similar principle which I now turn to address in the next section. 2.4. Existing people could endure non-physical harms I said earlier than the fact in itself that there would not be any future people is an impersonal reason and can therefore not be a reason to reject a principle permitting extinction. However, this impersonal reason could give rise to a personal reason that is admissible. So, the final important reason people might think that human extinction would be wrong is that there could be various deleterious psychological effects that would be endured by existing people having the knowledge that there would be no future generations. There are two main sources of this trauma, both arising from the knowledge that there will be no more people. The first relates to individual people and the undesired negative effect on well-being that would be experienced by those who would have wanted to have children. Whilst this is by no means universal, it is fair to say that a good proportion of people feel a strong pull towards reproduction and having their lineage continue in some way. Samuel Scheffler describes the pull towards reproduction as a ‘desire for a personalized relationship with the future’ (Scheffler 2012, 31). Reproducing is a widely held desire and the joys of parenthood are ones that many people wish to experience. For these people knowing that they would not have descendants (or that their descendants will endure painful and/or premature deaths) could create a sense of despair and pointlessness of life. Furthermore, the inability to reproduce and have your own children because of a principle/policy that prevents you (either through bans or physical interventions) would be a significant infringement of what we consider to be a basic right to control what happens to your body. For these reasons, knowing that you will have no descendants could cause significant psychological traumas or harms even if there were no associated physical harm. The second is a more general, higher level sense of hopelessness or despair that there will be no more humans and that your projects will end with you. Even those who did not feel a strong desire to procreate themselves might feel a sense of hopelessness that any projects or goals they have for the future would not be fulfilled. Many of the projects and goals we work towards during our lifetime are also at least partly future-oriented. Why bother continuing the search for a cure for cancer if either it will not be found within humans’ lifetime, and/or there will be no future people to benefit from it once it is found? Similar projects and goals that might lose their meaning when confronted with extinction include politics, artistic pursuits and even the type of philosophical work with which this paper is concerned. Even more extreme, through the words of the character Theo Faron, P.D. James says in his novel The Children of Men that ‘without the hope of posterity for our race if not for ourselves, without the assurance that we being dead yet live, all pleasures of the mind and senses sometimes seem to me no more than pathetic and crumbling defences shored up against our ruins’ (James 2006, 9). Even if James’ claim is a bit hyperbolic and all pleasures would not actually be lost, I agree with Scheffler in finding it not implausible that the knowledge that extinction was coming and that there would be no more people would have at least a general depressive effect on people’s motivation and confidence in the value of and joy in their activities (Scheffler 2012, 43). Both sources of psychological harm are personal reasons to reject a principle that permitted human extinction. Existing people could therefore reasonably reject the principle for either of these reasons. Psychological pain and the inability to pursue your personal projects, goals, and aims, are all acceptable reasons for rejecting principles in the contractualist framework. So too are infringements of rights and entitlements that we accept as important for people’s lives. These psychological reasons, then, are also valid reasons to reject principles that permitted or required human extinction.

#### 3] That is the only egalitarian metric---anything else collapses cooperation on collective action crises and makes extinction inevitable

Khan 18 (Risalat, activist and entrepreneur from Bangladesh passionate about addressing climate change, biodiversity loss, and other existential challenges. He was featured by The Guardian as one of the “young climate campaigners to watch” (2015). As a campaigner with the global civic movement Avaaz (2014-17), Risalat was part of a small core team that spearheaded the largest climate marches in history with a turnout of over 800,000 across 2,000 cities. After fighting for the Paris Agreement, Risalat led a campaign joined by over a million people to stop the Rampal coal plant in Bangladesh to protect the Sundarbans World Heritage forest, and elicited criticism of the plant from Crédit Agricolé through targeted advocacy. Currently, Risalat is pursuing an MPA in Environmental Science and Policy at Columbia University as a SIPA Environmental Fellow, “5 reasons why we need to start talking about existential risks,” https://www.weforum.org/agenda/2018/01/5-reasons-start-talking-existential-risks-extinction-moriori/)

Infinite future possibilities I find the story of the Moriori profound. It teaches me two lessons. Firstly, that human culture is far from immutable. That we can struggle against our baser instincts. That we can master them and rise to unprecedented challenges. Secondly, that even this does not make us masters of our own destiny. We can make visionary choices, but the future can still surprise us. This is a humbling realization. Because faced with an uncertain future, the only wise thing we can do is prepare for possibilities. Standing at the launch pad of the Fourth Industrial Revolution, the possibilities seem endless. They range from an era of abundance to the end of humanity, and everything in between. How do we navigate such a wide and divergent spectrum? I am an optimist. From my bubble of privilege, life feels like a rollercoaster ride full of ever more impressive wonders, even as I try to fight the many social injustices that still blight us. However, the accelerating pace of change amid uncertainty elicits one fundamental observation. Among the infinite future possibilities, only one outcome is truly irreversible: extinction. Concerns about extinction are often dismissed as apocalyptic alarmism. Sometimes, they are. But repeating that mankind is still here after 70 years of existential warning about nuclear warfare is a straw man argument. The fact that a 1000-year flood has not happened does not negate its possibility. And there have been far too many nuclear near-misses to rest easy. As the World Economic Forum’s Annual Meeting in Davos discusses how to create a shared future in a fractured world, here are five reasons why the possibility of existential risks should raise the stakes of conversation: 1. Extinction is the rule, not the exception More than 99.9% of all the species that ever existed are gone. Deep time is unfathomable to the human brain. But if one cares to take a tour of the billions of years of life’s history, we find a litany of forgotten species. And we have only discovered a mere fraction of the extinct species that once roamed the planet. In the speck of time since the first humans evolved, more than 99.9% of all the distinct human cultures that have ever existed are extinct. Each hunter-gatherer tribe had its own mythologies, traditions and norms. They wiped each other out, or coalesced into larger formations following the agricultural revolution. However, as major civilizations emerged, even those that reached incredible heights, such as the Egyptians and the Romans, eventually collapsed. It is only in the very recent past that we became a truly global civilization. Our interconnectedness continues to grow rapidly. “Stand or fall, we are the last civilization”, as Ricken Patel, the founder of the global civic movement Avaaz, put it. 2. Environmental pressures can drive extinction More than 15,000 scientists just issued a ‘warning to humanity’. They called on us to reduce our impact on the biosphere, 25 years after their first such appeal. The warning notes that we are far outstripping the capacity of our planet in all but one measure of ozone depletion, including emissions, biodiversity, freshwater availability and more. The scientists, not a crowd known to overstate facts, conclude: “soon it will be too late to shift course away from our failing trajectory, and time is running out”. In his 2005 book Collapse, Jared Diamond charts the history of past societies. He makes the case that overpopulation and resource use beyond the carrying capacity have often been important, if not the only, drivers of collapse. Even though we are making important incremental progress in battles such as climate change, we must still achieve tremendous step changes in our response to several major environmental crises. We must do this even while the world’s population continues to grow. These pressures are bound to exert great stress on our global civilization. 3. Superintelligence: unplanned obsolescence? Imagine a monkey society that foresaw the ascendance of humans. Fearing a loss of status and power, it decided to kill the proverbial Adam and Eve. It crafted the most ingenious plan it could: starve the humans by taking away all their bananas. Foolproof plan, right? This story describes the fundamental difficulty with superintelligence. A superintelligent being may always do something entirely different from what we, with our mere mortal intelligence, can foresee. In his 2014 book Superintelligence, Swedish philosopher Nick Bostrom presents the challenge in thought-provoking detail, and advises caution. Bostrom cites a survey of industry experts that projected a 50% chance of the development of artificial superintelligence by 2050, and a 90% chance by 2075. The latter date is within the life expectancy of many alive today. Visionaries like Stephen Hawking and Elon Musk have warned of the existential risks from artificial superintelligence. Their opposite camp includes Larry Page and Mark Zuckerberg. But on an issue that concerns the future of humanity, is it really wise to ignore the guy who explained the nature of space to us and another guy who just put a reusable rocket in it? 4. Technology: known knowns and unknown unknowns Many fundamentally disruptive technologies are coming of age, from bioengineering to quantum computing, 3-D printing, robotics, nanotechnology and more. Lord Martin Rees describes potential existential challenges from some of these technologies, such as a bioengineered pandemic, in his book Our Final Century. Imagine if North Korea, feeling secure in its isolation, could release a virulent strain of Ebola, engineered to be airborne. Would it do it? Would ISIS? Projecting decades forward, we will likely develop capabilities that are unthinkable even now. The unknown unknowns of our technological path are profoundly humbling. 5. 'The Trump Factor' Despite our scientific ingenuity, we are still a confused and confusing species. Think back to two years ago, and how you thought the world worked then. Has that not been upended by the election of Donald Trump as US President, and everything that has happened since? The mix of billions of messy humans will forever be unpredictable. When the combustible forces described above are added to this melee, we find ourselves on a tightrope. What choices must we now make now to create a shared future, in which we are not at perpetual risk of destroying ourselves? Common enemy to common cause Throughout history, we have rallied against the ‘other’. Tribes have overpowered tribes, empires have conquered rivals. Even today, our fiercest displays of unity typically happen at wartime. We give our lives for our motherland and defend nationalistic pride like a wounded lion. But like the early Morioris, we 21st-century citizens find ourselves on an increasingly unstable island. We may have a violent past, but we have no more dangerous enemy than ourselves. Our task is to find our own Nunuku’s Law. Our own shared contract, based on equity, would help us navigate safely. It would ensure a future that unleashes the full potential of our still-budding human civilization, in all its diversity. We cannot do this unless we are humbly grounded in the possibility of our own destruction. Survival is life’s primal instinct. In the absence of a common enemy, we must find common cause in survival. Our future may depend on whether we realize this.

**War turns structural violence not vice versa**

***Bulloch 8***

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But the idea that poverty and peace are directly related presupposes that wealth inequalities are – in and of themselves – unjust, and that the solution to the problem of war is to alleviate the injustice that inspires conflict, namely poverty. However, it also suggests that poverty is a legitimate inspiration for violence, otherwise there would be no reason to alleviate it in the interests of peace. It has become such a commonplace to suggest that poverty and conflict are linked that it rarely suffers any examination. To suggest that war causes poverty is to utter an obvious truth, but to suggest the opposite is – on reflection – quite hard to believe. War is an expensive business in the twenty-first century, even asymmetrically. And just to examine Bangladesh for a moment is enough at least to raise the question concerning the actual connection between peace and poverty. The government of Bangladesh is a threat only to itself, and despite 30 years of the Grameen Bank, Bangladesh remains in a state of incipient civil strife. So although Muhammad Yunus should be applauded for his work in demonstrating the efficacy of micro-credit strategies in a context of development, it is not at all clear that this has anything to do with resolving the social and political crisis in Bangladesh, nor is it clear that this has anything to do with resolving the problem of peace and war in our times. It does speak to the Western liberal mindset – as Geir Lundestad acknowledges – but then perhaps this exposes the extent to which the Peace Prize itself has simply become an award that reflects a degree of Western liberal wish-fulfilment. It is perhaps comforting to believe that poverty causes violence, as it serves to endorse a particular kind of concern for the developing world that in turn regards all problems as fundamentally economic rather than deeply – and potentially radically – political.

#### Existential magnitude outweighs probability

Sandberg et al. 8 (Anders, Ph.D. in computational neuroscience from Stockholm University, and currently a James Martin Research Fellow at the Future of Humanity Institute at Oxford University, Milan Cirkovic, senior research associate at the Astronomical Observatory of Belgrade. He is also an assistant professor of physics at the University of Novi Sad in Serbia and Montenegro, Jason Matheny, Department of Health Policy and Management, Bloomberg School of Public Health, Johns Hopkins University, “How can we reduce the risk of human extinction?” [http://thebulletin.org/how-can-we-reduce-risk-human-extinction //](http://thebulletin.org/how-can-we-reduce-risk-human-extinction%20//) AKONG)

Humanity could be extinguished as early as this century by succumbing to natural hazards, such as an extinction-level asteroid or comet impact, supervolcanic eruption, global methane-hydrate release, or nearby supernova or gamma-ray burst. (Perhaps the most probable of these hazards, supervolcanism, was discovered only in the last 25 years, suggesting that other natural hazards may remain unrecognized.) Fortunately the probability of any one of these events killing off our species is very low--less than one in 100 million per year, given what we know about their past frequency. But as improbable as these events are, measures to reduce their probability can still be worthwhile. For instance, investments in asteroid detection and deflection technologies cost less, per life saved, than most investments in medicine. While an extinction-level asteroid impact is very unlikely, its improbability is outweighed by its potential death toll. The risks from anthropogenic hazards appear at present larger than those from natural ones. Although great progress has been made in reducing the number of nuclear weapons in the world, humanity is still threatened by the possibility of a global thermonuclear war and a resulting nuclear winter. We may face even greater risks from emerging technologies. Advances in synthetic biology might make it possible to engineer pathogens capable of extinction-level pandemics. The knowledge, equipment, and materials needed to engineer pathogens are more accessible than those needed to build nuclear weapons. And unlike other weapons, pathogens are self-replicating, allowing a small arsenal to become exponentially destructive. Pathogens have been implicated in the extinctions of many wild species. Although most pandemics "fade out" by reducing the density of susceptible populations, pathogens with wide host ranges in multiple species can reach even isolated individuals. The intentional or unintentional release of engineered pathogens with high transmissibility, latency, and lethality might be capable of causing human extinction. While such an event seems unlikely today, the likelihood may increase as biotechnologies continue to improve at a rate rivaling Moore's Law. Farther out in time are technologies that remain theoretical but might be developed this century. Molecular nanotechnology could allow the creation of self-replicating machines capable of destroying the ecosystem. And advances in neuroscience and computation might enable improvements in cognition that accelerate the invention of new weapons. A survey at the Oxford conference found that concerns about human extinction were dominated by fears that new technologies would be misused. These emerging threats are especially challenging as they could become dangerous more quickly than past technologies, outpacing society's ability to control them. As H.G. Wells noted, "Human history becomes more and more a race between education and catastrophe." Such remote risks may seem academic in a world plagued by immediate problems, such as global poverty, HIV, and climate change. But as intimidating as these problems are, they do not threaten human existence. In discussing the risk of nuclear winter, Carl Sagan emphasized the astronomical toll of human extinction: A nuclear war imperils all of our descendants, for as long as there will be humans. Even if the population remains static, with an average lifetime of the order of 100 years, over a typical time period for the biological evolution of a successful species (roughly ten million years), we are talking about some 500 trillion people yet to come. By this criterion, the stakes are one million times greater for extinction than for the more modest nuclear wars that kill "only" hundreds of millions of people. There are many other possible measures of the potential loss--including culture and science, the evolutionary history of the planet, and the significance of the lives of all of our ancestors who contributed to the future of their descendants. Extinction is the undoing of the human enterprise. There is a discontinuity between risks that threaten 10 percent or even 99 percent of humanity and those that threaten 100 percent. For disasters killing less than all humanity, there is a good chance that the species could recover. If we value future human generations, then reducing extinction risks should dominate our considerations.

#### Predictions are inevitable and good

Ward & Metternich 13 [Michael D. Ward received his B.S. degree in Chemistry from the William Paterson College of New Jersey in 1977 and his Ph.D. degree at Princeton University in 1981. He was a Welch postdoctoral fellow at the University of Texas, Austin, between 1981 and 1982. He joined the research staff at Standard Oil of Ohio in Cleveland in 1982, and in 1984 he became a member of the research staff at the Dupont Central Research and Development Laboratories in Wilmington, Delaware. Ward joined the faculty of the Department of Chemical Engineering and Materials Science at the University of Minnesota in 1990, where he held a joint appointment in the Department of Chemistry. Ward was named a Distinguished McKnight University Professor in 1999, and he was the Director of the University of Minnesota Materials Research Science and Engineering Center (MRSEC) from 1998 – 2005. Dr Nils W. Metternich is an Associate Professor in International Relations at the School of Public Policy. He joined the Department in 2013 and holds a PhD in political science from the University of Essex. Prior to joining UCL he was a postdoctoral research fellow at Duke University (2011-12). "Learning from the Past and Stepping into the Future: Toward a New Generation of Conflict Prediction." https://experts.syr.edu/en/publications/learning-from-the-past-and-stepping-into-the-future-toward-a-new-]

One frequent, and quickly surfaced, criticism of predictions in the social sciences is that social phenomena such as international crises are simply too complicated to predict by any means. Precisely because political conflicts are quite complicated, we should expand reasoning into mechanisms that can support the complications. Indeed, complex systems involve a wide variety of mechanisms and phenomena that are not easily described, let alone understood in isolation. A good example is meteorology, wherein we receive a variety of forecasts every day. These forecasts are typically generated by combining a large number of predictions that are based on meteorological models of weather, which in turn rely on the physics and chemistry of what is governing the various interacting systems. These systems each use a vast amount of measured data on the stocks and flows of various physical characteristics and allow for heterogeneity, so that predictions are not the same everywhere. Also, they permit an increasingly accurate scale of prediction.

Indeed, the first attempt at weather prediction comes from Richardson (1922) over a century ago, when he used his mathematical approach to predict (retrospectively) the weather for May 20, 1910, by hand, using data from that date to predict the weather 6 hours subsequently. When corrected by modern smoothing techniques, Richardson’s predictions were quite accurate, although he did not perceive them to be adequate at the time (Lynch 2006). To Richardson, a global model of weather forecasts would have taken tens of thousands of human calculators, which from his perspective seemed impossible. Most current global weather models are based on Richardson’s equations. Interestingly, Richardson turned away from weather predictions and wrote one of the first books on the statistical analysis of war: Statistics of Deadly Quarrels. After his experiences in the First World War, he thus focused on another complicated phenomenon to predict. Given advancements in theory, data collection, statistics, and computational power, we might be at an important point to push the boundaries of predicting political phenomenon beyond what we believed was possible only a few years ago. To preemptively declare defeat at the forecasting task seems foolish.

Finally, though some see the main benefit of prediction as creating a kind of social radar,21 the real benefit of prediction may actually be as a heuristic allowing further probing of the empirical validity of specific models. Political science— especially where samples and experiments are not feasible—has an enormous vulnerability to over-reliance on the available data. In a statistical sense, this is often seen as overfitting: We use all the data to generate models that are dependent on all the data. That no longer seems like a very good research design. Being able to use our models to describe data we haven’t seen before should be one gold standard criterion for model evaluation. In the face of a torrent of new data about the world, we can do this in almost real time. This permits the possibility of generating predictions about the future that may be useful beyond the validation of our theories.

#### Complexity is wrong and prevents policymaking

Dr. Sebastian L. V. Gorka et al 12, Director of the Homeland Defense Fellows Program at the College of International Security Affairs, National Defense University, teaches Irregular Warfare and US National Security at NDU and Georgetown, et al., Spring 2012, “The Complexity Trap,” Parameters, <http://www.carlisle.army.mil/USAWC/parameters/Articles/2012spring/Gallagher_Geltzer_Gorka.pdf>

We live in a world of unprecedented complexity, or so we are told. President Obama’s words above echo an increasingly common narrative in the American foreign policy and national security establishments: the forces of globalization, rising nonstate actors, irregular conflict, and proliferating destructive technologies have made crafting sound national security strategy more elusive than ever before. 2 If “strategy is the art of creating power” by specifying the relationship among ends, ways, and means, 3 then the existence of unprecedented complexity would seem to make this art not only uniquely difficult today but also downright dangerous, inasmuch as choosing any particular course of action would preclude infinitely adaptive responses in the future. As Secretary of Defense Robert Gates memorably described, the pre-9/11 challenges to American national security were “amateur night compared to the world today.” 4 And as former State Department Director of Policy Planning Anne-Marie Slaughter recently stated, there is a “universal awareness that we are living through a time of rapid and universal change,” one in which the assumptions of the twentieth century make little sense. 5 The “Mr. Y” article that occasioned her comments argued that, in contrast to the “closed system” of the twentieth century that could be controlled by mankind, we now live in an “open system” defined by its supremely complex and protean nature. 6 Unparalleled complexity, it seems, is the hallmark of our strategic age.¶ These invocations of complexity permeate today’s American national security documents and inform Washington’s post-Cold War and -9/11 strategic culture. The latest Quadrennial Defense Review begins its analysis with a description of the “complex and uncertain security landscape in which the pace of change continues to accelerate. Not since the fall of the Soviet Union or the end of World War II has the international terrain been affected by such farreaching and consequential shifts.” 7 In a similar vein, the National Intelligence Council’s Global Trends 2025 argues that the international system is trending towards greater degrees of complexity as power is diffused and actors multiply. 8 The Director of National Intelligence’s Vision 2015 terms our time the “Era of Uncertainty,” one “in which the pace, scope, and complexity of change are increasing.” 9 Disturbingly, the younger generation of foreign policy and national security professionals seems to accept and embrace these statements declaiming a fundamental change in our world and our capacity to cope with it. The orientation for the multi-thousand-member group of Young Professionals in Foreign Policy calls “conquering complexity” the fundamental challenge for the millennial generation. Complexity, it appears, is all the rage. ¶ We challenge these declarations and assumptions—not simply because they are empirically unfounded but, far more importantly, because they negate the very art of strategy and make the realization of the American national interest impossible. We begin by showing the rather unsavory consequences of the current trend toward worshipping at complexity’s altar and thus becoming a member of the “Cult of Complexity.” Next, we question whether the world was ever quite as simple as today’s avowers of complexity suggest, thus revealing the notion of today’s unprecedented complexity to be descriptively false. We then underscore that this idea is dangerous, given the consequences of an addiction to complexity. Finally, we offer an escape from the complexity trap, with an emphasis on the need for prioritization in today’s admittedly distinctive international security environment. Throughout, we hope to underscore that today’s obsession with complexity results in a dangerous denial of the need to strategize.

### dAdvantage

#### Patents are key to adequate regulation and testing of drugs -- AFF leads to rampant counterfeiting and unsafe medication, which threatens public health, kills most vulnerable patients, and causes narcotic/human trafficking to surge. Especially true now due to public desperation over COVID, rise in e-commerce, and expansion of substandard medicine manufacturers targeting critical life-saving drugs

IPKey 21 (IP Key – Run by EUIPO and the European Commission to provide news coverage and scientific knowledge concerning intellectual property rights, “Intellectual Property and Keeping Medicines Safe”, https://ipkey.eu/en/south-east-asia/news/intellectual-property-and-keeping-medicines-safe, 2 February 2021, EmmieeM)

If you are what you eat, and bad diets lead to bad health, imagine what unsafe medicines can do. We ask today, why the provenance of vaccines has attracted so much attention when the origin of medicines we take, in some cases, every day and without even thinking, is not questioned at all? How do we know we can trust medicines readily available on the market from seemingly legitimate sources? Where does intellectual property (IP) come into all of this and why is a proper IP application and registration process important? The global race to develop vaccines to fight the spread of COVID-19 has understandably captured the attention of the public worldwide. People of all generations and with little or no expertise in clinical trials have followed the process keenly, wishing and willing together that science can provide the answer to stopping the pandemic so what was called ‘normal’ life can return. This public interest has also rightly scrutinised the testing that is designed to make sure that these vaccines are safe and this same focus is thankfully putting medicines under the spotlight more broadly. When we talk about medicines, they are universally understood to mean a drug or other preparation for the treatment or prevention of a disease or illness. In essence, they serve to keep us feeling healthy, or make us feel better. But what about when they achieve the exact opposite, when they are in fact harmful, or even fatal? The cause is usually because of fake and counterfeit medicines. This is because something they both have in common is the lack of rigorous inspections by public authorities that seek to guarantee the safety of medicines for widespread use. What’s more, the proliferation of both kinds of these illegal medicines is worsened by a critical fact. Previously, they used to mainly be related to ‘lifestyle’ medicines, but now, even innovative or critical life-saving medicines, such as medicines that tackle cardiovascular diseases, are being increasingly created and are entering the market without official IP application and registration processes. But if they are both illegal and both cause harm, what’s the difference between fake and counterfeit medicines? Fake medicines pass themselves off as real, authorised medicines but they may actually contain ingredients that are of low quality or in the wrong dosage. Since they have not passed through the necessary evaluation of quality, safety and efficacy as required by authorisation procedures, they can be a major health threat. Counterfeit medicines, in contrast, are those medicines that do not comply with intellectual and industrial property rights, such as registered trade marks or patent rights. But it is important to stress, this is not just an IP issue. In the vast majority of cases (90%) they can also be harmful to a patient’s health, according to a study recently released by the European Union Intellectual Property Office (EUIPO) and the Organisation for Economic Cooperation and Development (OECD) on ‘Trade in Counterfeit Pharmaceutical Products’. The World Health Organization (WHO) also shared in the 2017 report, ‘WHO Global Surveillance and Monitoring System for Substandard and Falsified Medical Products’, that the estimated number of children who may die from pneumonia each year after consuming counterfeit medicines is between 72 000 and 169 000. But counterfeit medicines are not just a public health concern. Innovation and creativity are the cornerstones of modern economies and counterfeit medicines siphon off revenue that should justly have been earned by the rightful owners of the medicines that counterfeit medicines seek to imitate. Not just legal pharmaceutical companies are hurt. The public lose out on better and more effective medicines because less revenue can be dedicated to further research and development. Worryingly, experience shows that these products are finding their way into the legal supply chains more easily than ever, meaning the sale of counterfeit medicines is not limited to illegal trading channels, such as illegal retailers or online sales. Instead, innocent consumers and desperate patients with life-threatening conditions can unwittingly purchase them and be completely ignorant of the potentially harmful side effects. But the problem does not stop there, either. As highlighted by the United Nations Office on Drugs and Crime report, organised crime is often behind the production of counterfeit medicines, meaning their profits can be used to fuel other illicit trades of, for example, narcotics or even human trafficking practices that help perpetuate more violent crimes, including kidnappings and extortion. This process has been aided in part by the boom in e-commerce. Technological advancements and the growing tendency to buy online, especially during the pandemic, have made regulation more difficult and helped increase the prevalence of counterfeit goods. These conditions create the perfect environment for non-regulated sellers and, rather than big shipments, the European Commission’s report on the EU customs enforcement of intellectual property rights indicates that courier and postal traffic accounted for 84% of all detentions of counterfeit goods generally in the EU. But citizens can play a part in combating counterfeit medicines. Basic steps such as checking the origin of products or looking for stamps of authorities help, as does greater awareness of their existence. We must come together to fight them because counterfeit medicines have existed in the market now for a long time, and without sufficient awareness, consumption of these substances can lead to unexpected symptoms, permanent disabilities, and even loss of life.

#### Counterfeit medicines exacerbate structural violence – weaken political infrastructure and trust in the healthcare system while increasing corruption, funding criminal groups, exacerbating social instability, decreasing outside development assistance, and harming personal health and financial security

Institute of Medicine of the National Academies 13 (National Academies of Sciences is a private & non-profit center that convenes leading experts to offer policy-makers independent & objective advice, specifically comes from their Board on Global Health - Committee on Understanding the Global Public Health Implications of Substandard, Falsified, and Counterfeit Medical Products, “Countering the Problem of Falsified and Substandard Drugs”, https://www.nap.edu/read/18272/chapter/1, 2013, pgs. 68-74, EmmieeM)

ECONOMIC AND SOCIAL CONSEQUENCES Substandard and falsified medicines effect health directly and pose a danger to individual patients and to public health. They also have economic and social consequences, including the direct costs of additional treatment and indirect social costs of lost confidence in the health system and the government. Costs to the Health System First, the use of falsified and substandard medicines costs the health care system. Providers do not usually suspect that the drugs they prescribe are of poor quality and will respond to a poor therapeutic response by ordering more tests or by repeating the course of treatment. In poor countries, where medicines rank second only to food as a household expense (Cameron et al., 2008), an increase in the family medicines bill can be a palpable hardship. When government or donors supply medicines, they shoulder the added costs of falsified and substandard drugs. Chapter 4 describes the pressure on procurement agencies to fill drug orders for the lowest prices, a false frugality that can cause the wasting of an entire medicines budget on drugs with insufficient active ingredients. The costs only grow when expensive drugs are targeted or when they are sold in rich countries. It is not yet clear how much patients and insurance companies paid for falsified Avastin during the 2012 crisis, but the Wall Street Journal found that the fake product sold for almost $2,000 per vial (Weaver and Whalen, 2012). Drug resistance will increase costs to the health system, and not only because of increased clinical attention. Drug resistance reduces the effective life of a drug. Already the cheapest, oldest classes of anti-infective drugs are becoming useless. Society must bear the expense of new drug development, an ever-increasing cost (see Figure 2-3), because resistant pathogens require treatment with more complex drugs. A 2010 estimate put the cost of developing a single drug at $1.3 billion (Kaitin, 2010), and a 2003 study showed that the cost of drug development grew 7.4 percent faster than inflation (DiMasi et al., 2003). Aside from the direct financial costs of treatment, there are opportunity costs incurred to patients who miss work for additional doctors’ visits or become too sick to work. Chapter 3 will explain that the burden of falsified and substandard medicines is borne mostly by the poor in South and Southeast Asia and sub-Saharan Africa. Transport costs and opportunity costs are a known obstacle to health care for these patients (Whitty et al., 2008). Customers at gray pharmaceutical markets, including flea markets, unlicensed medicine shops, and bazaars, are often there because they cannot afford to miss work for a formal consultation (Whitty et al., 2008). For example, participants at the São Paulo site visit for this study explained that although medicines are free through the public health system in Brazil, miners and other daily-wage workers circumvent this system. They continue working and self-treat with medicines of dubious quality from the gray market. In Brazil, as in many parts of the world, falsified and substandard medicines extract the highest costs from those who can afford the least. Scientists and policy makers in developing countries are aware of the toll falsified and substandard drugs take on their health systems. A 2009 WHO expert working group rated fake medicines as a top priority for research in developing countries (Bates et al., 2009). Patients may begin to distrust modern pharmacies after experiences with falsified and substandard drugs. In Ugandan villages, the proportion of positive responses to the question “Do you expect that the antimalarial medicines sold by the nearest drug shop are fake?” correlates roughly with the actual percentage of poor-quality drugs (Björkman-Nyqvist et al., 2012). As well as having accurate doubts about individual pharmacies, consumers in places where fake drugs circulate have reason to lose faith in the public health system. A recent systematic review suggests that patients across a range of developing countries already have poor perceptions of the health system, especially the technical competence and clinical skills of the staff and the availability of medicines (Berendes et al., 2011). Poor-quality medicines stand to damage the perception of the health system even more. Qualitative research in China suggests that patients view the loosely regulated private health care system poorly, seeing it as rife with “fake doctors” and “fake drugs” (Lim et al., 2004, p. 227). During a site visit to Brazil, the IOM delegation heard that, although the Brazilian drugs regulatory authority is strong, the public still doubts the quality of many medicines. Participants consistently attributed this poor confidence to unplanned pregnancies following a 1998 lapse in the quality of oral contraceptives (Associated Press, 1998; Goering, 1998). Anvisa, the Brazilian drugs regulatory authority, was created in response to this and other medicine quality problems (Csillag, 1998). Rumors about contraceptive quality linger in Brazil, a kind of urban folklore. They are evidence, however, that fake medicine can do long-term damage to the reputation of the health system. Social and Developmental Costs In a larger sense, trade in falsified and substandard medicines undermines not just the health system but all public institutions. Corruption in the health system can cause patients to assume the drug supply is substandard (BBC, 2012). Falsified medicines are often the business of criminal cartels, including the Camorra crime group in Naples, the Russian mafia, and Latin American drug cartels, and terrorist organizations, such as Al-Qaeda and Hezbollah (Findlay, 2011). These organizations run profitable and untaxed businesses. Organized crime flourishes under authoritarian governments and weak rule of law, both common in developing countries (UNODC, 2009). Criminals grow wealthy under either system, eventually wealthy enough that tacit (or active) collaboration becomes necessary for private citizens and politicians to survive (UNODC, 2009). When criminals control politicians, governments cannot be trusted. Donors are then obliged to withhold development aid, as several countries have done in response to corruption in the Zambian health ministry (BBC, 2010; WHO, 2009). The sale in falsified medicines funds other criminal activities, buys weapons and ammunition, and conveys power and influence to corrupt officials (Findlay, 2011; UNODC, 2009). The United Nations Office on Development and Crime (UNODC) reckons that in West Africa the sale in falsified medicines may be worth as much as the billion-dollar oil and cocaine trafficking industries; their estimate of the worth of trafficked antimalarials alone is more than $400 million (see Figure 2-4). Chapter 4 describes why medicines fraud is sometimes called the perfect crime. Fake medicines generate income for criminals, and only the weakest evidence, if any, ties them to their crime. Acute cases of medicine poisoning can elicit public outcry, but more often bad drugs go unnoticed, blending in with lawful business. Victims of falsified and substandard drugs usually do not even know they are victims and are therefore deprived of their right to redress. The UNODC described the traffic in fake drugs as both as cause and an effect of political instability, explaining, “Living in a society where such widespread and serious fraud can occur undermines confidence in government, but the effects are so diffuse and uncertain that they are unlikely to generate an organized political response” (UNODC, 2009, p. 6). In many parts of the world, falsified and substandard medicines further erode the already weak political infrastructure that allows them to circulate, part of a vicious cycle of poverty and crime.

#### Poor countries don’t have the infrastructure to manufacture complex medicines regardless

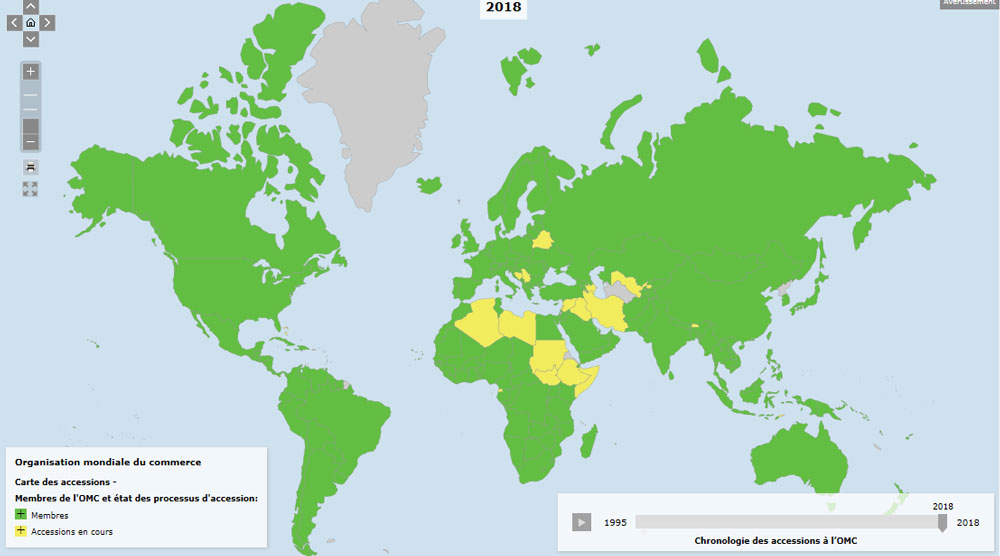
Hans **Sauer 21,** Deputy General Counsel and Vice President for Intellectual Property for the Biotechnology Innovation Organization, “Waiving IP Rights During Times of COVID: A ‘False Good Idea’,” IPWatchdog, 4-19-2021, https://www.ipwatchdog.com/2021/04/19/waiving-ip-rights-during-times-of-covid-a-false-good-idea/id=132399/

The Proposed Waiver is Unlikely to Help the Fight Against the Pandemic To begin with, one would think, the burden of establishing the need for such an extreme and disruptive measure should be on its proponents. Yet, in the face of unprecedented progress towards COVID vaccines, tests and treatments in record time, the waiver proponents can point to no credible instances in which IP has in fact hindered the development or production of COVID-19 countermeasures. Readers should judge for themselves by perusing the joint South African/Indian TRIPS Council submission purporting to demonstrate such IP barriers. Even cursory inspection shows that this proof consists of a number of pending patent applications, a handful of patents that haven’t been asserted, a few statements by politicians, and historical narratives having nothing to do with COVID-19. There have been a few instances of patent litigation, but none to block or delay COVID products. Interestingly, royalty-free licenses by drug originators to dozens of manufacturers in developing countries are counted as IP barriers to access. Perhaps recognizing the lack of affirmative proof supporting the need for a COVID IP waiver, proponents are increasingly trying to shift the burden to those who oppose the waiver, maybe best exemplified by World Health Organization Director General Tedros Ghebreyesus’ stance: “if not now, then when would a WTO waiver ever be justified?” Yet this is a poor substitute for an actual rationale, especially when the TRIPS Agreement and its addenda are already replete with IP flexibilities that have been justified for both national and multilateral use on the ground that they will be necessary in a public health emergency. The same proponents who have for decades with significant traction argued for an ever-growing expansion of these flexibilities now say that it is not worth even trying to use them; only the effective abrogation of all IP rights in relation to COVID-19 would be a quick enough measure to deal with the present crisis while it lasts. However, the proposed blanket suspension of IP rights is no quick fix for the pandemic, as it is unlikely to accelerate the delivery of COVID-19 vaccines. Waiver proponents have been unable to document the existence of idle global COVID vaccine manufacturing capacity **that could be unleashed by suspending IP rights.** Existing capacity to produce traditional vaccines with conventional manufacturing technology simply cannot quickly or easily be converted to produce the advanced COVID-19 vaccines currently deployed. Thus, developing country manufacturers that currently make e.g. diphtheria, yellow fever, or tetanus vaccines, cannot simply be re-tooled to make the high-end mRNA or vectored COVID vaccines we are eagerly waiting for. Very different facilities will be needed, and getting these built, certified, and operational will take time, money, and precious expertise. Waiver proponents also seem to forget that someone must keep making the whooping cough, polio, MMR, and other childhood vaccines against diseases that kill more children in the developing world than COVID ever will. Current global need for non-COVID vaccines is estimated at 3.5-5.5 billion doses per year, and those who talk about using existing capacity must realize that we cannot convert current manufacturing away from these critically-important products. On top of that, an estimated 14 billion doses of COVID vaccines will be needed globally. As GAVI – The Vaccine Alliance explains, it was always clear that demand for COVID vaccines would be high, immediate, and impossible to meet in the short term. This is no fault of the IP system. Vaccine manufacturing processes are complex, require specific know-how and equipment, and just cannot happen overnight. Some COVID-19 vaccines involve new technologies, such as mRNA and lipid nanoparticle encapsulation, for which no large-scale manufacturing facilities or copious raw materials existed at the outset of the pandemic. The worldwide capacity to build or convert new plants is likewise limited, specialized manufacturing equipment is difficult or impossible to source, and none of this is or was ever going to be achievable within a few months as the proponents of the TRIPS waiver assert. Not even counting the time it takes to construct and equip a new plant, just the regulatory certification of a completed new facility takes several months before it can begin commercial production, and the manufacture and quality control of a single batch of COVID-19 vaccine takes 3-4 months before it can be released. Anywhere between 100 and 1,000 quality controls are done at each step of the manufacturing process. Those who argue that an IP waiver would enable the free flow of COVID vaccines within months are raising impossible expectations.

### Solvency

#### The countries that their impact ev talks about (Sudanese crisis, Somalia, Syria, and the Yemenese rebels) are not even part of the WTO

WTO 18 [World Trade Organization, “WTO Accessions”] [DS] [https://www.wto.org/english/thewto\_e/acc\_e/acc\_e.htm]



#### Extinction is underrepresented in academic spaces as well

Javorsky 18 [Emilia Javorsky is a Boston-based physician-scientist focused on the invention, development and commercialization of new medical therapies. She also leads an Artificial Intelligence in Medicine initiative with The Future Society at the Harvard Kennedy School of Government. Why Human Extinction Needs a Marketing Department. January 15, 2018. https://www.xconomy.com/boston/2018/01/15/why-human-extinction-needs-a-marketing-department/]

Experts at Oxford University and elsewhere have estimated that the risk of a global human extinction event this century—or at least of an event that wipes out 10 percent or more of the world’s population— is around 1 in 10. The most probable culprits sending us the way of the dinosaur are mostly anthropogenic risks, meaning those created by humans. These include climate change, nuclear disaster, and more emerging risks such as artificial intelligence gone wrong (by accident or nefarious intent) and bioterrorism. A recent search of the scientific literature through ScienceDirect for “human extinction” returned a demoralizing 157 results, compared to the 1,627 for “dung beetle.” I don’t know about you, but this concerns me. Why is there so little research and action on existential risks (risks capable of rendering humanity extinct)?

A big part of the problem is a lack of awareness about the real threats we face and what can be done about them. When asked to estimate the chance of an extinction event in the next 50 years, U.S. adults in surveys reported chances ranging from 1 in 10 million to 1 in 100, certainly not 10 percent. The awareness and engagement issues extend to the academic community as well, where a key bottleneck is a lack of talented people studying existential risks.

Developing viable risk mitigation strategies will require widespread civic engagement and concerted research efforts. Consequently, there is an urgent need to improve the communication of the magnitude and importance of existential risks. The first step is getting an audience to pay attention to this issue.

That won’t be easy. Our social media-driven digital echo chambers present us with topics we already care about, so if you don’t already think about existential risk, it is unlikely you’ll come across it. Furthermore, in today’s media environment, research data must compete with a sea of misinformation, spin, and a daily deluge of “breaking” headlines. We have understandably become desensitized to alarms, especially on topics that have been sensationalized like “extinction.” We can only hear “the sky is falling” so much before we stop listening.