## Util

#### I value Morality, since the word “ought” in the resolution implies a moral obligation.

#### Value Criterion for this round is Maximizing Expected Well Being-This means we look to improve the lives of the most amount of people

#### Utilitarianism is the only moral philosophy available to governments

Goodin 95 – Professor of Philosophy at the Research School of the Social Sciences at the Australian National University (Robert E., Cambridge University Press, “Utilitarianism As a Public Philosophy” pg 63)

My larger argument turns on the proposition that there is something special about the situation of public officials that makes utilitarianism more plausible for them (or, more precisely, makes them adopt a form of utilitarianism that we would find more acceptable) than private individuals. Before proceeding with that larger argument, I must therefore say what it is that is so special about public officials and their situations that makes it both more necessary and more desirable for them to adopt a more credible form of utilitarianism. Consider, first the argument from necessity. Public officials are obliged to make their choices under uncertainty, and uncertainty of a very special sort at that. All choices-public and private alike- are made under some degree of uncertainty, of course. But in the nature of things, private individuals will usually have more complete information on the peculiarities of their own circumstances and on the ramifications that alternative possible choices might have for them. Public officials, in contrast, at **relatively poorly informed as to the effects that their choices will have on individuals, one by one**. What they typically do know are generalities: averages and aggregates. They know what will happen most often to most people as a result of their various possible choices. But that is all. That is enough to allow public policy makers to use the utilitarian calculus – if they want to use it at all – to choose general rules of conduct. Knowing aggregates and averages, they can proceed to calculate the utility payoffs from adopting each alternative possible general rule. But they cannot be sure what the payoff will be to any given individual or on any particular occasion. Their knowledge of generalities, aggregates and averages is just not sufficiently fine-grained for that.

**AND,**

#### Conflicting moral claims necessitate util –

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MULHOLLAND Professor of Philosophy – Newfoundland 1986 Journal of Philosophy v.83 i.6 p. 328

For many, the persuasiveness of utilitarianism as a moral theory lies in its power to provide a way out of difficulties arising from the conflict of moral principles. The contention that utilitarianism permits people to override rights in case of conflict of principles or in those cases where some recognized utility requires that a right be disregarded, is then not an internal objection to utilitarianism. Nor does it even indicate a plausible alternative to the convinced utilitarian. For him, utilitarianism has its force partly in the coherence and simplicity of the principle in explaining the morality of such cases.

## Structural Violence

#### Structural violence is **based** in moral exclusion, which is flawed because exclusion is based on arbitrarily perceived difference.

**Winter and Leighton 01**. Winter, D. D., and Dana C. Leighton." Structural violence." Peace, conflict and violence: Peace psychology for the 21st century (2001): 99-101.

Finally, to recognize the operation of structural violence forces us to ask questions about how and why we tolerate it, questions which often have painful answers for the privileged elite who unconsciously support it. A final question of this section is how and why we allow ourselves to be so oblivious to structural violence. Susan Opotow offers an intriguing set of answers, in her article Social Injustice. She argues that our normal perceptual cognitive processes divide people into in-groups and out-groups. Those outside our group lie outside our scope of justice. Injustice that would be instantaneously confronted if it occurred to someone we love or know is barely noticed if it occurs to strangers or those who are invisible or irrelevant. We do not seem to be able to open our minds and our hearts to everyone, so we draw conceptual lines between those who are in and out of our moral circle. Those who fall outside are morally excluded, and become either invisible, or demeaned in some way so that we do not have to acknowledge the injustice they suffer. Moral exclusion is a human failing, but Opotow argues convincingly that it is an outcome of everyday social cognition. To reduce its nefarious effects, we must be vigilant in noticing and listening to oppressed, invisible, outsiders. Inclusionary thinking can be fostered by relationships, communication, and appreciation of diversity. Like Opotow, all the authors in this section point out that structural violence is not inevitable if we become aware of its operation, and build systematic ways to mitigate its effects. Learning about structural violence may be discouraging, overwhelming, or maddening, but these papers encourage us to step beyond guilt and anger, and begin to think about how to reduce structural violence. All the authors in this section note that the same structures (such as global communication and normal social cognition) which feed structural violence, can also be used to **empower citizens** to reduce it. In the long run, reducing structural violence by reclaiming neighborhoods, demanding social jus- tice and living wages, providing prenatal care, alleviating sexism, and celebrating local cultures, will be our most surefooted path to building lasting peace.

#### Thus, the standard is mitigating structural violence.

## Contention 1 is Biotech

#### The US leads and will continue to dominate biotech unless we do something truly stupid, like give China our cutting-edge, dual-use mRNA research

Moore 21

(Scott Moore, Director of the Penn Global China Program@UPenn, Young Professional and Water Resources Management Specialist at the World Bank Group, Environment, Science, Technology, Health Officer for China at the U.S. Dept of State, Giorgio Ruffolo Post-Doctoral Research Fellow with the Belfer Center for Science and International Affairs@Harvard [BIODEFENSE](https://www.lawfareblog.com/tagged/biodefense) In Biotech, the Industry of the Future, the U.S. Is Way Ahead of China By [Scott Moore](https://www.lawfareblog.com/contributors/smoore) Wednesday, February 17, 2021, 8:01 AM LAWfare <https://www.lawfareblog.com/biotech-industry-future-us-way-ahead-china> -CAT

It was supposed to be China’s moment of technological triumph—one that would show the world Beijing had not only conquered the coronavirus but also emerged as a biotechnology superpower. But when clinical data on China’s flagship CoronaVac vaccine finally flowed in, they showed it was barely more than 50 percent effective—just clearing the minimum standard set by the World Health Organization. In contrast, not one but two vaccines developed by U.S. firms have been found to be upward of 95 percent effective, a standard no other country’s vaccines have yet met in rigorous clinical trials. The United States’s overall track record in responding to the pandemic has been awful. Yet the success of its vaccine development efforts shows that when it comes to biotechnology, the industry of the future, the U.S. is way ahead of China and most of its other rivals. A continuing refrain from Washington in recent years has been that the United States is falling behind China in the development of critical emerging technologies. In some fields, this may be true. But not in biotechnology. To be sure, China’s biotech sector is growing at a torrid pace, and some of its firms are becoming leaders in certain areas, such as cancer treatment. Yet the U.S. retains a dominant position in research, development and commercialization, accounting for almost half of all biotech patents filed from 1999 to 2013. The triumph of its biotechnology industry during the coronavirus pandemic, producing two highly effective vaccines using an entirely new approach based on messenger RNA, and in record time, shows that the U.S.’s competitive edge in biotechnology remains largely intact. And that has important implications as Washington gears up for a sustained period of geopolitical competition with Beijing. Biotech is such a critical area for technological competition between the U.S. and China because it is transforming fields from medicine to military power. The great advances of the 19th century, like chemical fertilizers, resulted from mastering chemistry. In the 20th century, mastery of physics led to nuclear energy—and, more ominously, nuclear weapons. In the 21st century, biology offers a similar mix of peril and promise. This was illustrated dramatically by the award of the 2020 Nobel Prize for the discovery of an enzyme system known as CRISPR-Cas9, which allows an organism’s genomes to be edited with high precision. It is a transformational breakthrough. But while CRISPR shows great promise in the development of new cures for long-untreatable diseases, it could also lead to a whole new generation of deadly bioweapons. That’s a prospect that increasingly alarms U.S. intelligence officials. In 2016, then-Director of National Intelligence James Clapper warned Congress that “[r]esearch in genome editing conducted by countries with different regulatory or ethical standards than those of western countries probably increases the risk of the creation of potentially harmful biological agents or products.” Although Clapper didn’t name specific countries, it soon became clear that he was referring mainly to China. Four years later, his successor, John Ratcliffe, issued a far more pointed warning that “China has even conducted human testing on members of the People’s Liberation Army in hope of developing soldiers with biologically enhanced capabilities. There are no ethical boundaries to Beijing’s pursuit of power.” Such capabilities are almost certainly only speculative—but they underscore why biotech leadership is so important for national security as well as economic competitiveness. Beijing has long envied the United States’s dominant position in biotechnology and spent heavily to overtake it. Biotech has been a priority sector for state investment since the 1980s, and by one estimate Beijing had poured some $100 billion into the sector by 2018. Nowhere did it lavish more attention or invest more of its propaganda power than in developing a coronavirus vaccine. State media have spent months crowing that “China is working around the clock for breakthroughs in COVID-19 vaccines.” Yet despite this push, China’s vaccine program quickly took on a Potemkin air. In February 2020, barely two months after the onset of the pandemic and after a supposedly crash vaccine effort, a military doctor stood in front of a Chinese flag to receive what was billed as an experimental vaccine dose but was widely suspected to be a staged photo op. Now, having spent months talking up its two primary vaccine candidates to developing countries like Brazil and Indonesia, both of which have entered into purchase agreements with Chinese biotech firms, Chinese officials face severe mistrust among their nation’s overseas partners. For China’s leaders, the disappointing returns on their big bet on biotechnology look likely to cause them more headaches at home as well as abroad—there are already signs that affluent Chinese place more trust in foreign-developed coronavirus vaccines than the homegrown ones produced at such great expense. For U.S. officials, though, China’s relative underperformance in vaccine development presents an opportunity to reassert the United States’s leadership in biotechnology and public health and bolster the nation’s depleted soft power in the process. The Biden administration has already signaled it will reengage in multilateral bodies such as the World Health Organization. Yet the U.S. shouldn’t stop there. Washington should begin thinking now about how to emulate the success of the President’s Emergency Plan for AIDS Relief (PEPFAR)—which, though imperfect, is widely regarded as one of the most successful single public health interventions in history—to address growing disparities in access to coronavirus vaccines between countries. At the moment, vaccine supplies are controlled largely by rich countries, creating the risk of moral and public health failure if the gap persists. While COVID-19, the respiratory disease caused by the novel coronavirus, differs in many respects from AIDS, PEPFAR combined research, prevention, and access to therapeutics. Developing a comparable institutional structure to close the coronavirus vaccine access gap is the right thing to do—but it would also go a long way to restoring America’s battered global reputation. At the same time, the United States can’t afford to rest on its laurels in biotechnology, or any other field. Aside from China, other nations like Singapore and Israel have also invested heavily to develop their biotechnology sectors, with Israel in particular giving rise to a thriving biotech industry. U.S. public investment in basic scientific research and development has meanwhile been on the decline for decades, and there are worrying signs that America’s once world-beating innovation ecosystem is less productive, and less entrepreneurial, than it once was. Despite strengths in translational research, moreover, the frontiers of biology increasingly sit at the intersection with other disciplines like computer science, meaning that funding agencies, universities and other organizations need to break down disciplinary silos. Boosting support for biotechnology research, while reforming how that money is used, will go a long way toward shoring up the United States’s leading position in the global biotech sector. The U.S. biotechnology sector also faces other threats, not least growing espionage and intellectual property theft by foreign actors, especially those linked to China. Several high-profile cases brought by the U.S. Department of Justice’s China Initiative have involved biotechnology researchers, and American biotech firms have been top targets for cyber theft and intrusion. Sustained outreach to researchers and research institutions is critical to preventing such theft. But efforts to clamp down on the threats posed by espionage and intellectual property theft can easily go too far and must preserve the researcher mobility and data-sharing that is essential to doing cutting-edge science. Beyond its shores, the United States should work with its partners and allies to enhance export controls on dual-use biotechnology—used for both peaceful and military gain—especially DNA templates. Many forms of genetic material and synthetic biology products are already subject to U.S. export controls, but gaps remain, and screening for genetic sequence orders relies primarily on voluntary regulation by biotech firms. Better coordinating export controls among major economies and U.S. allies can dramatically reduce the risk of sophisticated bioweapons development in the decades to come. When it comes to biotechnology, the industry of the future, the U.S. remains well ahead of its rivals, including China. That’s something Americans can, and should, take pride in. But the U.S. must make proactive investments and undertake significant reforms now to ensure that things stay that way.

#### WTO weakening IPR would give China our cutting-edge, dual-use mRNA research

Lawder et al. 21

David Lawder, Andrea Shalal, Carl O’Donnell, Reuters, U.S. wants COVID vaccine patent waiver to benefit world, not boost China biotech. May 8, 2021. <https://www.reuters.com/world/china/us-wants-covid-vaccine-patent-waiver-benefit-world-not-boost-china-biotech-2021-05-08/> -CAT

The Biden administration is examining ways to ensure that a waiver of COVID-19 vaccine patents to aid poor countries will not hand sensitive U.S. biopharmaceutical technology to China and Russia, responding to a chorus of concerns, U.S. and industry officials say. President Joe Biden on Wednesday backed the U.S. entering negotiations at the World Trade Organization for the waiver of intellectual property rights as a means to boost vaccine supplies by allowing poorer countries to make their own. So far, vaccines have gone overwhelmingly to richer nations, which scooped up contracts for them earlier this year. COVID-19 infection rates in wealthy countries have dropped as vaccination rates increased this year, but infections are still rising in 36 countries, with India’s daily cases skyrocketing to nearly 400,000 a day. Western pharmaceutical companies, many of which have received government support to develop vaccines, strongly oppose the transfer of intellectual property to make them. They say poorer countries will be slow to set up manufacturing capacity and compete for scarce supplies, hitting production. Albert Bourla, CEO of Pfizer Inc, said on Friday that the proposed waiver would disrupt progress made so far in boosting vaccine supplies. “It will unleash a scramble for the critical inputs we require in order to make a safe and effective vaccine. Entities with little or no experience in manufacturing vaccines are likely to chase the very raw materials we require to scale our production, putting the safety and security of all at risk.” Many companies and now some U.S. officials fear the move would allow China to leapfrog years of research and erode the U.S. advantage in biopharmaceuticals. A senior Biden administration official said that while the priority is saving lives, the United States "would want to examine the effect of a waiver on China and Russia before it went into effect to ensure that it's fit for purpose." A question and answer document produced by the administration and shared with industry representatives also acknowledges concerns that intellectual property sharing could damage the United States's competitive advantage over China, an industry source familiar with the discussions told Reuters. The contents of the document read to a Reuters reporter by an industry representative said the Biden administration believes it can address those concerns through the WTO negotiations, but did not specify how. The source added that some agencies in the Biden administration have conflicting views of how to address the concerns in negotiations that are expected to take months. Spokespersons at the White House and U.S. Trade Representative's office had no immediate comment on the matter. Pfizer and Moderna spokespersons did not respond to requests for comment on technology transfer concerns, while a Novavax spokesperson referred Reuters to the company's statement opposing the waiver on Friday, which said proposals to "weaken intellectual property protections would not achieve equitable vaccine access." Enforcing limits on use of the technology could be very difficult, once handed over, some analysts say. Messenger RNA, used in COVID-19 vaccines by leaders Pfizer/BioNTech and Moderna, is a newly developed biotechnology that holds promise for treatments far beyond vaccines. China and Russia have their own vaccines that do not use this biotechnology. "It took Pfizer and Moderna years and years of research to develop these vaccines," said Gary Locke a former U.S. ambassador to China and U.S. Commerce Secretary. "China, Russia, India, South Africa and others want to gain access. Their intention is to get the underlying know-how so they can use it to develop further vaccines," Locke said. China's Fosun Pharma has struck a deal with BioNTech on COVID-19 vaccine product development, which would potentially give it access to some of the technology. China has high ambitions for its pharma industry and already is developing its own mRNA vaccine. Patents themselves are publicly accessible, noted James Pooley, intellectual property attorney and former deputy director general of the United Nations' World Intellectual Property Organization. But trade secrets developed by Pfizer/BioNTech, Moderna and others, "cook books" of manufacturing processes such as temperature and growing conditions, have not been made public. That may ultimately be a dual problem for negotiators. Before they protect the knowledge, U.S. officials would have to ensure access to it. Those companies would need to be persuaded to come to the bargaining table to give up such trade secrets. “What happens when it turns out that the U.S. can’t actually deliver the information that is critically important to implementing the inventions?” Pooley asked. “This will be seen as another failure by the U.S. and other rich countries to keep their promises.”

#### China already has a terrifying biosurveillance infrastructure that could supply the raw data for novel bioweapons

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(Scott Moore, Director of the Penn Global China Program@UPenn, Young Professional and Water Resources Management Specialist at the World Bank Group, Environment, Science, Technology, Health Officer for China at the U.S. Dept of State, Giorgio Ruffolo Post-Doctoral Research Fellow with the Belfer Center for Science and International Affairs@Harvard; “China’s Role In The Global Biotechnology Sector And Implications For U.S. Policy”, April 2020, <https://www.brookings.edu/wp-content/uploads/2020/04/FP_20200427_china_biotechnology_moore.pdf)//HW-CC> -recut CAT

The certainty that China will play an increasingly important role in the global biotechnology sector poses several issues for U.S. policymakers. The gravest of these pertain to national security. Though there is presently no sign that China’s capabilities exceed those of the United States, some researchers have noted that biotechnology is a focus of increasing attention GLOBAL CHINA CHINA’S ROLE IN THE GLOBAL BIOTECHNOLOGY SECTOR AND IMPLICATIONS FOR U.S. POLICY TECHNOLOGY 5 by the People’s Liberation Army.42 U.S. policymakers and security analysts have also raised concerns that the dominant market position of Chinese firms in producing active pharmaceutical ingredients might allow Beijing to disrupt U.S. access to lifesaving drugs in the event of a conflict.43 On the other hand, the use of tools like CRISPR, which is increasingly inexpensive and easy to use, by terrorists and non-state actors to potentially create novel bioweapons poses severe security threats to both the United States and China. It would seem to be in the interest of all states, including China, to strengthen efforts, currently led mostly by the private sector, to prevent dangerous actors from gaining access to DNA templates and other relevant materials.44 Though these prospects are alarming, the theft and use of biomedical data presents more immediate policy concerns. American life sciences research institutions have been subject to what U.S. officials characterize as prolific intellectual property theft and non-traditional intelligence collection by Chinese actors.45 At home, Beijing has already incorporated biometric data on certain populations, such as the Uighur minority group, into its already-formidable social control and surveillance apparatus.46 Chinese actors also appear to have targeted foreign citizens for covert biomedical data collection.47 Last year, the U.S. government forced a Chinese firm to sell its majority stake in an American social network that aggregates health care data from users, primarily over worries this information could be used to persuade Americans with access to sensitive information to spy for China.48 Such added U.S. government scrutiny has contributed to a sharp decline in Chinese investment in the U.S. biotechnology sector. Though small overall, such investment had been growing rapidly, and in 2018 the biotechnology sector constituted the single largest source of Chinese investment in the U.S. overall, surpassing real estate.49 As this impact suggests, access to and control over biomedical data also has profound implications for the economic competitiveness of the U.S. biotechnology sector. Many frontier areas of biotechnology, including the use of artificial intelligence for biomedical applications, depend on access to large quantities of individual patient data. Chinese biotechnology firms are likely to have access to larger quantities of such data than their competitors elsewhere thanks to the size of China’s population and relatively weak rules governing data collection and sharing. An existing biomedical database of patients from China’s national health care system, for example, allegedly covers some 600 million patients.50 The Chinese government is moreover increasingly aggressive about preventing foreign firms and organizations from accessing such data. In 2016, biomedical data was proclaimed a “national strategic resource,”51 and the export of such data is strictly controlled. Rules specifically bar any foreign use of Chinese biomedical data that “may jeopardize national security, national interests, or public security,” and in 2018 these were used to shut down several high-profile scientific collaborations including one involving Peking University and the University of Oxford.52 It should be noted, however, that while data quantity is important, so is data quality, and a combination of poor and inconsistent record-keeping and limited population diversity may diminish the utility of biomedical data produced in China for key applications like therapeutics development.53 In any case, the availability of biomedical datasets will be a key determinant of the relative competitiveness of the U.S. and Chinese biotechnology industries going forward. A final, and more hopeful, policy implication of China’s growing role in biotechnology is its potential to help address shared global challenges like infectious disease prevention and biodiversity protection. In the near term, the COVID-19 crisis has highlighted the need for expanded international cooperation on epidemiological data collection and analysis, vaccine development, and other areas related to biotechnology. While China’s openness to such cooperation at the moment is unclear, there are likely to be future opportunities to engage China in COVID-19 tracing, vaccine development, and deployment initiatives in third countries, especially in the less-developed world. In the longer term, synthetic biology, especially the use of gene drives to rapidly spread genetic modifications throughout a population, offers great promise to eliminate insect-borne diseases like malaria, and could also help endangered species adapt to climate change effects. As the 21st century advances, advanced biotechnology will both demand new forms GLOBAL CHINA CHINA’S ROLE IN THE GLOBAL BIOTECHNOLOGY SECTOR AND IMPLICATIONS FOR U.S. POLICY TECHNOLOGY 6 of global governance and present new arenas for both competition and cooperation between researchers, business leaders, and policymakers.

#### State-created bioweapons uniquely risk extinction in the hands of bioterrorists.

Piers Millett 17, Consultant for the World Health Organization, PhD in International Relations and Affairs, University of Bradford, Andrew Snyder-Beattie, “Existential Risk and Cost-Effective Biosecurity”, Health Security, Vol 15(4), <http://online.liebertpub.com/doi/pdfplus/10.1089/hs.2017.0028>

In the decades to come, advanced bioweapons could threaten human existence. Although the probability of human extinction from bioweapons may be low, the expected value of reducing the risk could still be large, since such risks jeopardize the existence of all future generations. We provide an overview of biotechnological extinction risk, make some rough initial estimates for how severe the risks might be, and compare the cost-effectiveness of reducing these extinction-level risks with existing biosecurity work. We find that reducing human extinction risk can be more cost-effective than reducing smaller-scale risks, even when using conservative estimates. This suggests that the risks are not low enough to ignore and that more ought to be done to prevent the worst-case scenarios. How worthwhile is it spending resources to study and mitigate the chance of human extinction from biological risks? The risks of such a catastrophe are presumably low, so a skeptic might argue that addressing such risks would be a waste of scarce resources. In this article, we investigate this position using a cost-effectiveness approach and ultimately conclude that the expected value of reducing these risks is large, especially since such risks jeopardize the existence of all futu­­r­e human lives. Historically, disease events have been responsible for the greatest death tolls on humanity. The 1918 flu was responsible for more than 50 million deaths,1 while smallpox killed perhaps 10 times that many in the 20th century alone.2 The Black Death was responsible for killing over 25% of the European population,3 while other pandemics, such as the plague of Justinian, are thought to have killed 25 million in the 6th century—constituting over 10% of the world’s population at the time.4 It is an open question whether a future pandemic could result in outright human extinction or the irreversible collapse of civilization. A skeptic would have many good reasons to think that existential risk from disease is unlikely. Such a disease would need to spread worldwide to remote populations, overcome rare genetic resistances, and evade detection, cures, and countermeasures. Even evolution itself may work in humanity’s favor: Virulence and transmission is often a trade-off, and so evolutionary pressures could push against maximally lethal wild-type pathogens.5,6 While these arguments point to a very small risk of human extinction, they do not rule the possibility out entirely. Although rare, there are recorded instances of species going extinct due to disease—primarily in amphibians, but also in 1 mammalian species of rat on Christmas Island.7,8 There are also historical examples of large human populations being almost entirely wiped out by disease, especially when multiple diseases were simultaneously introduced into a population without immunity. The most striking examples of total population collapse include native American tribes exposed to European diseases, such as the Massachusett (86% loss of population), Quiripi-Unquachog (95% loss of population), and theWestern Abenaki (which suffered a staggering 98% loss of population). In the modern context, no single disease currently exists that combines the worst-case levels **of transmissibility, lethality, resistance to countermeasures, and global reach**. But many diseases are proof of principle that each worst-case attribute can be realized independently. For example, some diseases exhibit nearly a 100% case fatality ratio in the absence of treatment, such as rabies or septicemic plague. Other diseases have a track record of spreading to virtually every human community worldwide, such as the 1918 flu,10 and seroprevalence studies indicate that other pathogens, such as chickenpox and HSV-1, can successfully reach over 95% of a population.11,12 Under optimal virulence theory, natural evolution would be an unlikely source for pathogens with the highest possible levels of transmissibility, virulence, and global reach. But advances in biotechnology might allow the creation of diseases that combine such traits. Recent controversy has already emerged over a number of scientific experiments that resulted in viruses with enhanced transmissibility, lethality, and/or the ability to overcome therapeutics.13-17 Other experiments demonstrated that mousepox could be modified to have a 100% case fatality rate and render a vaccine ineffective.18 In addition to transmissibility and lethality, studies have shown that other disease traits, such as incubation time, environmental survival, and available vectors, could be modified as well.19-21 Although these experiments had scientific merit and were not conducted with malicious intent, their implications are still worrying. This is especially true given that there is also a long historical track record of state-run bioweapon research applying cutting-edge science and technology to design agents not previously seen in nature. The Soviet bioweapons program developed agents with traits such as enhanced virulence, resistance to therapies, greater environmental resilience, increased difficulty to diagnose or treat, and which caused unexpected disease presentations and outcomes.22 Delivery capabilities have also been subject to the cutting edge of technical development, with Canadian, US, and UK bioweapon efforts playing a critical role in developing the discipline of aerobiology.23,24 While there is no evidence of state-run bioweapons programs directly **attempting** to develop or deploy bioweapons that would pose an existential risk, the logic of deterrence and mutually assured destruction could create such incentives in more unstable political environments or following a breakdown of the Biological Weapons Convention.25 The possibility of a war between great powers could also increase the pressure to use such weapons—during the World Wars, bioweapons were used across multiple continents, with Germany targeting animals in WWI,26 and Japan using plague to cause an epidemic in China during WWII.27 Non-state actors may also pose a risk, especially those with explicitly omnicidal aims. While rare, there are examples. The Aum Shinrikyo cult in Japan sought biological weapons for the express purpose of causing extinction.28 Environmental groups, such as the Gaia Liberation Front, have argued that “we can ensure Gaia's survival only through the extinction of the Humans as a species … we now have the specific technology for doing the job … several different [genetically engineered] viruses could be released”(quoted in ref. 29). Groups such as R.I.S.E. also sought to protect nature by destroying most of humanity with bioweapons.30 Fortunately, to date, non-state actors have lacked the capabilities needed to pose a catastrophic bioweapons threat, but this could change in future decades as biotechnology becomes more accessible and the pool of experienced users grows.31,32 What is the appropriate response to these speculative extinction threats? A balanced biosecurity portfolio might include investments that reduce a mix of proven and speculative risks, but striking this balance is still difficult given the massive uncertainties around the low-probability, high-consequence risks. In this article, we examine the traditional spectrum of biosecurity risks (ie, biocrimes, bioterrorism, and biowarfare) to categorize biothreats by likelihood and impact, expanding the historical analysis to consider even lower-probability, higher-consequence events (catastrophic risks and existential risks). In order to produce reasoned estimates of the likelihood of different categories of biothreats, we bring together relevant data and theory and produce some first-guess estimates of the likelihood of different categories of biothreat, and we use these initial estimates to compare the cost-effectiveness of reducing existential risks with more traditional biosecurity measures. We emphasize that these models are highly uncertain, and their utility lies more in enabling order-of-magnitude comparisons rather than as a precise measure of the true risk. However, even with the most conservative models, we find that reduction of low-probability, high-consequence risks can be more cost-effective, as measured by quality-adjusted life year per dollar, especially when we account for the lives of future generations. This suggests that despite the low probability of such events, society still ought to invest more in preventing the most extreme possible biosecurity catastrophes.

## Contention 2 is Innovation

#### Biotech industry strong now

Cancherini et al. 4/30 [(Laura, Engagement Manager @ McKinsey & Company, Joseph Lydon, Associate Partner @ McKinsey & Company, Jorge Santos Da Silva, Senior Partner at McKinsey & Company, and Alexandra Zemp, Partner at McKinsey & Company), “What’s ahead for biotech: Another wave or low tide?“, McKinsey & Company, 4-30-2021, https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/whats-ahead-for-biotech-another-wave-or-low-tide] TDI

Belying this downbeat mood, biotech has in fact had one of its best years so far. By January 2021, venture capitalists had invested some 60 percent more than they had in January 2020, with more than $3 billion invested worldwide in January 2021 alone.5 IPO activity grew strongly: there were 19 more closures than in the same period in 2020, with an average of $150 million per raise, 17 percent more than in 2020. Other deals have also had a bumper start to 2021, with the average deal size reaching more than $500 million, up by more than 66 percent on the 2020 average (Exhibit 3).6 What about SPACs? The analysis above does not include special-purpose acquisition companies (SPACs), which have recently become significant in IPOs in several industries. Some biotech investors we interviewed believe that SPACs represent a route to an IPO. How SPACs will evolve remains to be seen, but biotechs may be part of their story. Fundamentals continue strong When we asked executives and investors why the biotech sector had stayed so resilient during the worst economic crisis in decades, they cited innovation as the main reason. The number of assets transitioning to clinical phases is still rising, and further waves of innovation are on the horizon, driven by the convergence of biological and technological advances. In the present day, many biotechs, along with the wider pharmaceutical industry, are taking steps to address the COVID-19 pandemic. Together, biotechs and pharma companies have more than 250 vaccine candidates in their pipelines, along with a similar number of therapeutics. What’s more, the crisis has shone a spotlight on pharma as the public seeks to understand the roadblocks involved in delivering a vaccine at speed and the measures needed to maintain safety and efficacy standards. To that extent, the world has been living through a time of mass education in science research and development. Biotech has also benefited from its innate financial resilience. Healthcare as a whole is less dependent on economic cycles than most other industries. Biotech is an innovator, actively identifying and addressing patients’ unmet needs. In addition, biotechs’ top-line revenues have been less affected by lockdowns than is the case in most other industries. Another factor acting in the sector’s favor is that larger pharmaceutical companies still rely on biotechs as a source of innovation. With the top dozen pharma companies having more than $170 billion in excess reserves that could be available for spending on M&A, the prospects for further financing and deal making look promising. For these and other reasons, many investors regard biotech as a safe haven. One interviewee felt it had benefited from a halo effect during the pandemic. More innovation on the horizon The investors and executives we interviewed agreed that biotech innovation continues to increase in quality and quantity despite the macroeconomic environment. Evidence can be seen in the accelerating pace of assets transitioning across the development lifecycle. When we tracked the number of assets transitioning to Phase I, Phase II, and Phase III clinical trials, we found that Phase I and Phase II assets have transitioned 50 percent faster since 2018 than between 2013 and 2018, whereas Phase III assets have maintained much the same pace. There could be many reasons for this, but it is worth noting that biotechs with Phase I and Phase II assets as their lead assets have accounted for more than half of biotech IPOs. Having an early IPO gives a biotech earlier access to capital and leaves it with more scope to concentrate on science.

#### Any IP reduction sets a precedent which destroys future innovation

Ossowski 5/10 Yaël Ossowski. [Yaël Ossowski (@YaelOss) is deputy director of the Consumer Choice Center, a global consumer advocacy group.] “We Don’t Need to Lift Patents to Make Vaccines More Accessible.” Thedispatch.com, The Dispatch, 10 May 2021, thedispatch.com/p/we-dont-need-to-lift-patents-to-make. Accessed 28 Aug. 2021.

A full 14 months into the pandemic, nearly half of Americans who are eligible have received at least one vaccine dose. The end is in sight, and we have innovation to thank. And so, as our economy reopens and restrictions are being lifted, attention is turning to hard-hit nations like India and Brazil, currently experiencing skyrocketing case numbers. The question, then, is how to boost vaccinations abroad. The New York Times notes that India’s outbreak is causing the country to restrict export of its own vaccines, which could hurt Africa in particular, since those nations are relying on Indian vaccines. In the face of pressure to use every tool available to boost vaccinations abroad, the Biden administration announced last week that it supported a proposal to waive patent protections on the COVID vaccines. This measure, which is called a TRIPS Waiver (Trade-Related Aspects of Intellectual Property Rights) and was put forth last fall at the World Trade Organization by India and South Africa, would be far more than just a temporary fix for more shots. If the waiver is triggered, it would ostensibly nullify IP protections on COVID vaccines, allowing countries and companies to copy the formulas developed by private vaccine firms in hopes of making their own, with no guarantee of success or safety. The coalition backing Biden’s pledge includes Doctors Without Borders, Human Rights Watch, and World Health Organization Secretary-General Tedros Adhanom Ghebreyesus, who first backed this effort in 2020 before any coronavirus vaccine was approved. Intellectual property rights are protections that help foster innovation and provide legal certainty to innovators so that they can profit from and fund their efforts. A weakening of IP rules would actively hurt the most vulnerable—the same people that groups who support the IP waiver are nominally trying to help. The power to issue the waiver comes from a section in the 1995 treaty that created the World Trade Organization, meant to protect intellectual property among global trade partners. While a COVID vaccine waiver would be the most substantial one to date, similar efforts have been attempted on both HIV/AIDS medicines and generic drugs, the latter the only other successful case. The **push for a waiver ignores that many companies have voluntarily pledged to sell their vaccines at cost** or even offered to share information with other firms. Moderna, for its part, has stated it will not enforce the IP rights on its mRNA vaccine during the pandemic and will hand over any research to those who can scale up production. The developers of the Oxford-AstraZeneca vaccine have pledged to sell it at cost until the pandemic is over. Further, this measure would have far-reaching implications. Supporters claim that because COVID represents such a global threat and because Western governments have poured billions in to securing and helping produce vaccines, low and middle-income countries should be relieved of the burden of purchasing them. But rich countries are already donating vaccines to the World Health Organization’s COVAX program, which gifts countries vaccines free of charge. There are a few reasons that a TRIPS waiver is unlikely to be the most efficient solution. The vaccines require specialized knowledge to develop and produce these vaccines, and the mRNA vaccines require cold storage. As economist Alex Tabarrok has pointed out, vaccine makers have been scouring the globe for adequate vaccine facilities but fallen short. It seems implausible that any of this could be achieved outside the traditional procurement contracts we’ve seen in the European Union and the U.S. What is more likely is an increase of botched and unsafe vaccines that would be risky for vulnerable populations, as philanthropist Bill Gates has claimed in his opposition to the waiver. If the cost of researching and producing a COVID vaccine is truly $1 billion as is claimed, with no guarantee of success, there are relatively few biotechnology or pharmaceutical companies that can stomach that cost. And distribution would be an entirely different story. If Biden’s administration wants to help vulnerable nations, there is an easier way: release the tens of millions of doses of AstraZeneca vaccines sitting dormant in warehouses, which the FDA has not yet approved, and begin exporting our vaccine surplus to the most hard-hit countries. That’s precisely why the COVAX initiative was created, and why the U.S. should support it. Meanwhile, let’s also look at the future implications of moving now to restrict IP protections for the very companies that have delivered the life-saving vaccines that will get us out of our current pandemic. BioNTech, the German company headed by the husband-wife team of Uğur Şahin and Özlem Türeci that partnered with Pfizer for trials and distribution of their mRNA vaccine, was originally founded to use mRNA to cure cancer. Before the pandemic, they took on massive debt and scrambled to fund their research. Once the pandemic began, they pivoted their operations and produced one of the first mRNA COVID vaccines, which hundreds of millions of people have received. With billions in sales to governments and millions in direct private investment, we can expect the now-flourishing BioNTech to be at the forefront of mRNA cancer research, which could give us a cure. The same is true of many orphan and rare diseases that do not otherwise receive major funding. Would this have been possible without intellectual property protections? If we want to be able to confront and end this pandemic, we will continue to need innovation from both the vaccine makers and producers who make this possible. Granting a one-time waiver will create a precedent of nullifying IP rights for a host of other medicines, which would greatly endanger future innovation and millions of potential patients. Especially in the face of morphing COVID variants, we need all incentives on the table to protect us against the next phase of the virus. Rather than seeking to tear down those who have delivered the miracle of quick, cheap, and effective vaccines, we need to support their innovations and provide supplies to countries who need them. Symbolic gestures that will have drastic consequences, especially on the most vulnerable, just aren’t up to the task.

#### Empirics prove lower profit margins harms future innovation – R&D investments solve the aff by supplying drugs globally

Roberts 6-25 [James M. Roberts, Research Fellow For Economic Freedom and Growth at the Heritage Foundation with a master’s degree in international and development economics from Yale University, 6-25-2021, "Biden’s OK of Global Theft of America’s Intellectual Property Is Wrong, Dangerous," Heritage Foundation, <https://www.heritage.org/public-health/commentary/bidens-ok-global-theft-americas-intellectual-property-wrong-dangerous>]/Kankee

Mr. Biden wants to waive the World Trade Organization’s “Trade-Related Aspects of Intellectual Property Rights” (TRIPS) agreement for U.S. vaccines and let foreign countries issue “compulsory licenses“ allowing their domestic pharmaceutical companies to manufacture the medicines without adequately compensating the companies that invented them. Practically speaking, countries such as India and South Africa are unlikely to manufacture the vaccines. They lack an advanced infrastructure for cold supply-chain distribution and many other crucial resources required by these products’ capital-intensive, state-of-the-art manufacturing process. But the Biden policy is bad for many other reasons. Developing breakthrough medications takes tremendous ingenuity and immense financial investments. It’s an extraordinarily high-risk endeavor, and the prospect of making a profit is what convinces private companies to undertake those risks. Signaling that the United States will not fight to defend their intellectual property rights actively undermines innovation and manufacturing in American health care and medicines. It also erodes patient protections by undermining quality control. Foreign companies may take the president’s policy as a green light to produce reverse-engineered, counterfeit substitutes. Already there are reports of ineffective and even dangerous counterfeit COVID-19 vaccines being sold around the world. Those pushing to break U.S. pharmaceutical patents say they want to do so for altruistic reasons. Consequently, they also insist that the prices for the medications be set far below their actual value. But history shows us that forcing private companies to provide vaccines at an “affordable price,” regardless of the cost to the companies, actually impedes the manufacture of high-quality vaccines. Moreover, it inhibits the future development of vaccines needed to meet as-yet-unknown diseases. Washington first imposed vaccine price controls as part of Hillary Clinton’s 1993 healthcare-for-all crusade. As the Wall Street Journal later noted, it was a body blow to the U.S. vaccine industry. Ironically, government-decreed prices left the companies unable to produce enough vaccines to meet Mrs. Clinton’s admittedly admirable goal of universal immunization of children. Since then, U.S. firms have largely eschewed the vaccine market because they could not recoup their R&D and manufacturing costs and earn enough profit to fund future innovation. Ultimately, compulsory licensing legalizes the theft of intellectual property. Recognizing this, senators from both sides of the aisle have joined with other government officials and industry leaders to call on the administration to reverse this bad decision. The U.S. patent protection system has served the nation well since its founding. It is and has been a bulwark of American prosperity, but the strength of that protection has been weakening in the past few decades. Compulsory licensing contributes to the erosion of that protection. As the U.S. and the rest of the world emerge from the pandemic, it is clear that more innovative medicines and vaccines will be needed for future protection from viruses and other emerging biological threats. The best way to prevent and treat those new diseases is to ensure that private American pharmaceutical companies continue their innovative research and vaccine production. That way, U.S.-manufactured vaccines can be made available to all Americans quickly. And governments can subsidize their export and sale to other countries far more effectively and less expensively than through compulsory licensing schemes. Meanwhile, let’s hope Mr. Biden listens to the more reasonable and less-agenda driven voices in this debate and reverses course on the TRIPS waiver.

## Case

#### Trade secrets are the real problem – the 1AC method fails

Zaitchik 4/22 (Alexander, Alexander Zaitchik is an American freelance journalist who writes on politics, media, and the environment. He has written for The Nation, The New Republic, the Intercept, Rolling Stone, the Guardian, Foreign Policy, the Baffler, the International Herald Tribune, Wired, the San Francisco Chronicle, and The Believer, Jacobin Magazine, among others) “Moderna’s Pledge Not to Enforce the Patents on Their COVID-19 Vaccine Is Worthless.” Jacobinmag.com, 4.22.2021, [www.jacobinmag.com/2021/04/moderna-patents-covid-19-vaccine](http://www.jacobinmag.com/2021/04/moderna-patents-covid-19-vaccine). Accessed 9 Aug. 2021. ‌//AA

Suspending enforcement around valuable intellectual property in the midst of a public health crisis appeared, at first glance, like a credible display of noblesse oblige, to be welcomed even if it carried a whiff of incense meant to displace the stink of recent corporate scandals. The media dutifully covered Moderna’s patent pledge as evidence of corporate social commitment in a time of crisis. The patent pledge was widely reported on the assumption that it would, as Reuters put, “allow other drugmakers to develop shots using the company’s technology.” The company was safe in its assumption that scrutiny would stop there, and the public impression would remain that of a sacrifice to help end the pandemic. But this impression is false, and not just because Moderna’s legal claims on technologies developed with government money is provisional in the first place. Moderna’s patent pledge was an empty gesture for another reason quite apart from its long-standing junior partnership with the National Institutes of Health (NIH). Their entire ploy was premised on outdated public perceptions about how **i**ntellectual **p**roperty works in the twenty-first century. Modern Patents on Biomedicines Almost Never Contain the Information Needed to Mass Produce Them. The patent is a form of intellectual property, not a synonym. As inherited shorthand for knowledge monopolies, “patent” is a throwback, a progressively old-fashioned catchall reference that obscures more than it explains, like calling the supercomputer in your pocket a telephone. Understanding why requires revisiting the patent’s origins as a social contract. Emerging in Renaissance Italy, the first patents functioned as royal permission slips; having one meant you could benefit exclusively from a technology, process, or trade. This privilege was half of a limited-term bargain with the sovereign: in exchange for the monopoly, the recipient of the patent agreed to introduce a new and productive form of knowledge into the realm, to be diffused when the patent expired. As technological invention grew more complex, patents required more detailed information to serve as effective notes of collateral: to get the monopoly privilege, inventors had to reveal and submit all of their knowledge — sometimes called “trade secrets” — to the state. Until 1880, the US Patent and Trademark Office required applicants to submit miniature, three-dimensional models, along **with blueprints, instructions, and diagrams** containing everything that someone “skilled in the art” would need to reproduce the invention. When the monopoly term expired, the secrets were spilled into the public domain and, it was hoped, made productive at lower, newly competitive prices. In 2021, that social contract is as quaint as the miniature riverboat buoyancy device a young Abraham Lincoln submitted for patent consideration in 1849. In high technology fields like biomedicine, modern patent applications rarely contain the knowledge required to manufacture the invention. This is by political design, the result of an industry push to change the rules under an obliging Reagan administration and that era’s Democratic Congress. Four decades later, the patent game is one of deterring reproduction, even and especially by those most “skilled in the art.” Key aspects of an invention and its practice are systematically shielded, often indefinitely, by a layered intellectual property barricade involving patents, copyright, and “undisclosed information,” a broad, opaque and relatively new category of intellectual property (**IP**) that contains three subcategories vital to making things like vaccines: know-how, trade secrets, and data. It is within these categories, not in the publicly filed patent, that the most valuable secrets are kept. Industry-oriented legal theorists and intellectual property law professionals sometimes call undisclosed information “the padlock on the patent.” Rare is the new technology without these padlocks to secure a corporation’s crown jewels beyond reach — before, during, and after the term of the legal monopoly. According to the US Defend Trade Secrets Act of 2016 (DTSA), which together with the Uniform Trade Secrets Act of 1985 (UTSA) has been integrated into the global intellectual property regime enforced by the World Trade Organization (WTO), **anything a company deems valuable can be shielded by an undisclosed information claim, including all forms and types of financial, business, scientific, technical, economic, or engineering information, including patterns, plans, compilations, program devices, formulas, designs, prototypes, methods, techniques, processes, procedures, programs, or codes, whether tangible or intangible, and whether or how stored, compiled, or memorialized physically, electronically, graphically, photographically or in writing.**

#### plan gets circumvented – foreign countries will just create patent protections for medicines that are almost close to the patented formula which still creates biopiracy

#### IP protections can be used as defensive measures for protection of traditional knowledge – empirics flow neg

Tesh Dagne 14, [© Tesh Dagne 2014. LL.B; LL.M; JSD; Assistant Professor of Law, Thompson Rivers University Faculty of Law, Kamloops, BC. This paper is part of a research project on control of access for the utilization of biodiversity resources, funded under the TRU Internal Research Fund. The author acknowledges the TRU Research Office for the support. Also, the author thanks Jessica DeMarinis for great research assistance. Protecting Traditional Knowledge in International Intellectual Property Law: Imperatives for Protection and Choice of Modalities, 14 J. Marshall Rev. Intell. Prop. L. 25 (2014)]/.anop

Given the effectiveness of IPRs in regulating economic relations, segments of stakeholders have recently become receptive to the possible use of IP as frameworks to protect TK for external use.110 Proposals to protect TK through IP mostly include either the use of existing IPRs, or the use of their modified versions in some cases, or the use of their amended version in others. Examples in the latter category include the application of case law interpreting unmodified statutes of IPRs in a manner that responds to the interest of ILCs. In this line, the Australian Aboriginal artists successfully invoked claims of copyrights and unfair trade practices against carpets imported from Vietnam that replicated Aboriginal arts.111 In resolving the dispute that arose, the Federal Court of Australia granted compensatory damages for “personal suffering” to take account of cultural aspects.112 It decided that even though only individuals could be recognized as copyright owners: [T]here may be scope…for the distribution of the proceeds of the action to those traditional owners who have legitimate entitlements, according to Aboriginal law, to share the compensation paid by someone who has, without permission, reproduced the artwork of an Aboriginal artist.”113 The jurisprudence developed from this and similar cases have generally helped to introduce the issue of TK into the Australian IPRs establishment.114 For example, the National Indigenous Arts Advocacy Association in Australia adopted the Indigenous Label of Authenticity in 1999 to help promote the marketing of the art and cultural products, and to deter the sale of products that are falsely labeled as originating from Aboriginal peoples.115 The result of the certification of authenticity in this manner, however, has not proved fruitful and thus, the initiative has been abandoned.116 New Zealand uses existing IPRs to provide defensive measures of TK protection.117 The New Zealand Trade Marks Act was amended to prohibit the registration of trademarks that would likely offend a significant segment of the community, including the indigenous Maori people.118 In addition, the Act allows the invalidation of a registered mark upon application by a person “culturally aggrieved,” even if the mark is distinctive of a registered owner.119 Bearing in mind the holistic nature of TK, it combines the use of IPRs with initiatives for sui generis approach to TK.120 In Canada, there has yet to be any amendments to IPRs legislation based on protection for TK and TK-based resources.121 As a working paper from the Department of Indian and Northern Development indicates, however, indigenous peoples in Canada directly utilize existing Copyrights and Trademark systems to establish rights on the products of their knowledge.122 This includes the use of copyrights in the woodcarvings of Pacific coast artists, including masks and totem poles, and in the silver jewelry of Haida artists.123 In the trademark regime, the Department of Indian and Northern Affairs uses the symbol Igloo as a certification mark, which identifies Inuit artwork as authentic.124 In addition, members and groups of Aboriginal peoples protect a number of marks as official marks and certification marks to identify a wide specter of goods and services, ranging from traditional art and artwork to food products, clothing, tourist services, and enterprises.125

#### The WTO can’t enforce the aff- causes circumvention.

Lamp 19 [Nicholas; Assistant Professor of Law at Queen’s University; “What Just Happened at the WTO? Everything You Need to Know, Brink News,” 12/16/19; <https://www.brinknews.com/what-just-happened-at-the-wto-everything-you-need-to-know/>] Justin

Nicolas Lamp: For the first time since the establishment of the WTO in 1995, the Appellate Body cannot accept any new appeals, and that has knock-on effects on the whole global trade dispute settlement system. When a member appeals a WTO panel report, it goes to the Appellate Body, but if there is no Appellate Body, it means that that panel report will not become binding and will not attain legal force.

The absence of the Appellate Body means that members can now effectively block the dispute settlement proceedings by what has been called appealing panel reports “into the void.”

The WTO panels will continue to function as normal. When a panel issues a report, it will normally be automatically adopted — unless it is appealed. And so, even though the panel is working, the respondent in a dispute now has the option of blocking the adoption of the panel’s report. It can, thereby, shield itself from the legal consequences of a report that finds that the member has acted inconsistently with its WTO obligations.