## OFF

### NC – DA [Long]

#### CP: We endorse the counter-hegemonic discourse the aff tries to implement but disagree that the member nations of the World Trade Organization should eliminate patents based on Indigenous Knowledge from patentability.

#### Pharmaceutical innovation is accelerating now – new medicines are substantially better than existing treatments.

Wills, MBA, and Lipkus, PhD, 20 – Todd J. Wills [Managing Director @ Chemical Abstracts Service, MBA from THE Ohio State University] and Alan H. Lipkus [Senior Data Analyst @ Chemical Abstracts Service, PhD Physical Chemistry from the University of Rochester], “Structural Approach to Assessing the Innovativeness of New Drugs Finds Accelerating Rate of Innovation,” ACS Medicinal Chemistry Letters, Vol. 11, 2020, <https://pubs.acs.org/doi/pdf/10.1021/acsmedchemlett.0c00319> C.VC

Despite recent concerns over an innovation crisis, this analysis shows pharmaceutical innovation has actually increased over the last several decades based on the structural novelty of approved NMEs. The higher proportion of Pioneers over the most recent decade is a sign that innovation within the industry is accelerating rather than slowing. It is also an encouraging sign for the state of innovation in drug discovery that these Pioneers are significantly more likely to be the source of promising new therapies that are expected to provide substantial clinical advantages over existing treatments. Drug hunters are discovering Pioneers in newer and less explored regions of chemical space as they are increasingly found on scaffolds first reported in the CAS REGISTRY five or less years prior to their IND year or on scaffolds populated with 50 or less other compounds at the time of IND.

As scale becomes less of a strategic advantage, Big Pharma’s share of Pioneers has decreased even though the number of Big Pharma originated Pioneers has increased. This has created a structural innovation gap between Big Pharma and the Rest of Ecosystem which has widened over the last two decades as the Rest of Ecosystem is now responsible for originating almost 3 out of every 4 Pioneers. Pioneers originated by the Rest of Ecosystem are increasingly on new scaffolds, while a majority of Big Pharma originated Pioneers have historically been on new scaffolds.

The work presented here was intended as a study of drug innovation at a macro level. As a result, it included substances of various sizes with different degrees of complexity belonging to a range of functional and drug classes. Even though it was outside the scope of the present work to study specific subsets, such focused studies could yield additional insights into how innovation at a more micro level has changed over time. Other interesting subsets of our data set are the shapes and scaffolds of the Settlers and Colonists. Many of these shapes and scaffolds are privileged in the sense that they are seemingly capable of serving as ligands for a diverse array of target proteins. A separate study of the Settlers and Colonists as well as their side chains could provide insights into possible target-specific innovation trends.

As it often takes more than 10 years after initial discovery for an experimental drug to gain FDA approval, any measure of drug innovation that relies on the time of approval incorporates a significant time lag between initial discovery and ultimate approval. However, characterizing drug innovation based on structural novelty provides a means to assess the forward-looking innovation potential of an experimental drug at the time of initial discovery by comparing its framework information (at the scaffold and shape level) with prior FDA-approved drugs. Therefore, a separate study of drug candidates with publically disclosed structures currently in clinical development could provide additional insights into innovation trends at an FDA regulatory review level and serve as a leading indicator of innovation trends at an FDA approval level.

Given the tremendous opportunity represented by the vast amount of chemical space yet to be explored, drug-hunters of all types will continue pushing the boundaries to find promising new therapies in previously unexplored areas of chemical space. The race to discover these new drugs will be fueled by further advancements in screening approaches and in-silico methods (including innovations related to machine learning algorithms and molecular representations). However, comprehensive data on known shapes and scaffolds can fast track the identification of meaningful open areas of chemical space (shapes or scaffolds that are potentially important but have never been used as the basis for a molecule) to further explore.

#### The biopharmaceutical industry is uniquely reliant on IP protections – undermining them would kill innovation by making an already expensive process completely unfeasible.

Kristina M. Lybecker, PhD, 17 [PhD Economics, Associate Professor of Economics @ Colorado College], “Intellectual Property Rights Protection and the Biopharmaceutical Industry: How Canada Measures Up,” Fraser Institute, January 2017, <https://www.fraserinstitute.org/sites/default/files/intellectual-property-rights-protection-and-the%20biopharmaceutical-industry.pdf> C.VC

The unique structure of the innovative biopharmaceutical industry necessitates a variety of intellectual property protection mechanisms. In particular, the industry is characterized by a research and development (R&D) process that is lengthy, expensive, uncertain, and risky. According to DiMasi and colleagues, the estimated cost of developing a new medicine is US$2.6 billion (DiMasi, Grabowski, and Hansen, 2016).2 In addition, the time required to develop a new drug is also significant, averaging 10 to 15 years without any guarantee of success (PhRMA, n.d.). While these figures are highly controversial, biopharmaceutical innovation is unquestionably an expensive and lengthy undertaking.3 For the biopharmaceutical industry, innovation and its protection are essential and the source of both profits and growth. As such, patent protection is disproportionally more important for ensuring that the innovator appropriates the returns to R&D for the biopharmaceutical industry than virtually any other. Extending the findings of the 1987 “Yale Survey” (Levin, Klevorick, Nelson, and Winter, 1987), the “Carnegie Mellon Survey” established that while patents are again considered “unambiguously the least effective appropriability mechanisms,” the drug industry and other scholars regard them as strictly more effective than alternative mechanisms (Cohen, Nelson, and Walsh, 1996). The industry’s disproportionate reliance on patents and other forms of intellectual property protection is confirmed in numerous other studies.4

In essence, IPR protections provide innovative biopharmaceutical firms with an assurance of some return on their investment, thus creating incentives for the development of new technologies that could otherwise be easily replicated and sold by competitors. Due to the tremendous fixed costs required to develop new treatments and cures, a significant potential exists for free riding by follower firms, a market failure that would prevent investment in innovation were it not for the patents and other forms of intellectual property protections that provide a limited period of market exclusivity or other such incentives. Fundamentally, patents amount to an efficiency tradeoff. Society provides innovators with a limited period of market exclusivity to encourage innovation in exchange for public access to this knowledge. In exchange for the temporary static loss from market exclusivity, society gains complete knowledge of the innovation through disclosure, a permanent dynamic gain. Through this tradeoff, the existing patent system corrects the market failure that would stymie innovation. In its Apotex Inc. v. Wellcome Foundation Ltd. finding, Justice Binnie wrote for the Supreme Court of Canada, “A patent, as has been said many times, is not intended as an accolade or civic award for ingenuity. It is a method by which inventive solutions to practical problems are coaxed into the public domain by the promise of a limited monopoly for a limited time. Disclosure is the quid pro quo for valuable proprietary rights to exclusivity which are entirely the statutory creature of the Patent Act” (para. 37).

The biopharmaceutical industry is characterized by a number of legal and economic issues that distinguish it from other research-intensive industries. Danzon (1999) describes three features that are particularly noteworthy. First, given that the biopharmaceutical industry is characterized by an unusually high rate of R&D, intellectual property protection provides for the potential for significant market power and monopoly pricing that raises numerous public health policy questions surrounding prices and profits. Second, virtually every aspect of the industry is heavily regulated, from safety and efficacy to promotion and advertising, to pricing and reimbursement. Danzon describes the impact of these regulations as “profound and multidimensional even within a single country, affecting consumption patterns, productivity, R&D and hence the supply of future technologies” (Danzon, 1999: 1056). Lastly, while research and development costs are borne solely by the innovator, the resulting product is a global public good. “Each country faces an incentive to adopt the regulatory policies that best control its pharmaceutical budget in the short run, free-riding on others to pay for the joint costs of R&D and ignoring cross-national spillovers of national regulatory policies through parallel trade and international price comparisons” (Danzon, 1999: 1056). The combination of these characteristics defines a set of unique economic and legal challenges for the innovation of new drugs and the public health policies that surround their production, marketing, and distribution.

Innovative companies make far greater investments in time, resources, and financial support than do generic firms. Notably, innovation-based companies spend more than 200 times that which generic companies spend on the development of a particular drug (CIPC, 2011: 10). In addition, the investment of time, from laboratory to market, is also close to double for innovative companies relative to generic producers. Table 1 highlights the differences in the drug development processes of innovative and generic companies. For innovative biopharmaceutical companies, the development process is expensive, risky, and time consuming, all of which points to the need for strong IP protection to encourage investment and ensure companies are able to recover their investments.

The risk involved in biopharmaceutical development is starkly illustrated in a recent report by Biotechnology Innovation Organization (BIO), which reports that less than one of every 10 drugs that enter clinical trials is ultimately approved by the Food and Drug Administration in the United States. The report finds a success rate of merely 9.6%, a calculation that is significantly smaller than the widely-cited 11.8% figure from a 2014 study by the Tufts University’s Center for the Study of Drug Development.5 The International Federation of Pharmaceutical Manufacturers and Associations (2012) estimates that more than 3,200 compounds were at different stages of development globally in 2011, but only 35 new medicines were launched (Dawson, 2015).

Fundamentally, research-based biopharmaceutical companies incur greater expenses and risk in the development of their products than do generic manufactures. These investments of time and financial resources should be recognized and the effective patent life should be sufficient to recoup these investments. Continued investment and innovation are contingent upon strong, effective intellectual property protection and the ability of innovative firms to recoup their investments. Patents and other forms of intellectual property protection are disproportionally important to the research-based biopharmaceutical industry. Consequently, the legal architecture necessary to foster a robust innovation-based industry is multifaceted and is a powerful force shaping the biopharmaceutical industry, its profitability, productivity, and innovative future.

#### 50% of medicine comes from IK

Eiland 08 [Dr. Eiland received a doctorate in Oriental Archaeology from Oxford University and an LLM from the Munich Intellectual Property Law Center], “Patenting Traditional Medicine”, Nomos Verlagsgesellschaft mbH & Co. KG, pg. 7-10, 2008 //SLC PK

* TM = traditional medicine

In 1982, it was estimated that about 50 % of all filled prescriptions in the US originated from drugs that were derived – one way or another – from natural substances. This generated US sales of about 20 billion.4 Another estimate found that 3/4 of the plants used in prescription drugs originally came to the attention of drug companies because of their use in TM.5 In 1995, the worldwide market value of TM derived pharmaceuticals was estimated to be $43 billon.6 While one could argue about the precise values, TM has significant pharmaceutical applications. Drug companies are interested in acquiring TM, both natural substances, as well as the knowledge about how to use them.

**Pharmaceutical innovation is key to protecting against future pandemics, bioterrorism, and antibiotic resistance.**

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As key actors in the healthcare innovation landscape, pharmaceutical and life sci-ences companies have been called on to develop medicines, vaccines and diagnostics for pressing public health challenges. The COVID-19 crisis is one such challenge, but there are many others. For example, MERS, SARS, Ebola, Zika and avian and swine flu are also infectious diseases that represent public health threats. Infectious agents such as anthrax, smallpox and tularemia could present threats in a **bioterrorism con-text**.1 The general threat to public health that is posed by **antimicrobial resistance** is also **well-recognised** as an area **in need of pharmaceutical innovation**. Innovating in response to these challenges does not always align well with pharmaceutical industry commercial models, shareholder expectations and compe-tition within the industry. However, the expertise, networks and infrastructure that industry has within its reach, as well as public expectations and the moral imperative, make pharmaceutical companies and the wider life sciences sector an **indispensable** partner in the search for solutions that save lives. This perspective argues for the need to establish more sustainable and scalable ways of incentivising pharmaceu-tical innovation in response to infectious disease threats to public health. It considers both past and current examples of efforts to mobilise pharmaceutical innovation in high commercial risk areas, including in the context of current efforts to respond to the COVID-19 pandemic. In global pandemic crises like COVID-19, the urgency and scale of the crisis – as well as the spotlight placed on pharmaceutical companies – mean that contributing to the search for effective medicines, vaccines or diagnostics is **essential** for socially responsible companies in the sec-tor.2 It is therefore unsurprising that we are seeing indus-try-wide efforts unfold at unprecedented scale and pace. Whereas there is always scope for more activity, industry is currently contributing in a variety of ways. Examples include pharmaceutical companies donating existing com-pounds to assess their utility in the fight against COVID-19; screening existing compound libraries in-house or with partners to see if they can be repurposed; accelerating tri-als for potentially effective medicine or vaccine candidates; and in some cases rapidly accelerating in-house research and development to discover new treatments or vaccine agents and develop diagnostics tests.3,4 Pharmaceutical companies are collaborating with each other in some of these efforts and participating in global R&D partnerships (such as the Innovative Medicines Initiative effort to accel-erate the development of potential therapies for COVID-19) and supporting national efforts to expand diagnosis and testing capacity and ensure affordable and ready access to potential solutions.3,5,6 The primary purpose of such innovation is to **benefit patients** and wider **population health**. Although there are also reputational benefits from involvement that can be realised across the industry, there are likely to be rela-tively few companies that are ‘commercial’ winners. Those who might gain substantial revenues will be under pres-sure not to be seen as profiting from the pandemic. In the United Kingdom for example, GSK has stated that it does not expect to profit from its COVID-19 related activities and that any gains will be invested in supporting research and long-term pandemic preparedness, as well as in developing products that would be affordable in the world’s poorest countries.7 Similarly, in the United States AbbVie has waived intellectual property rights for an existing com-bination product that is being tested for therapeutic poten-tial against COVID-19, which would support affordability and allow for a supply of generics.8,9 Johnson & Johnson has stated that its potential vaccine – which is expected to begin trials – will be available on a not-for-profit basis during the pandemic.10 Pharma is mobilising substantial efforts to rise to the COVID-19 challenge at hand. However, we need to consider how pharmaceutical innovation for responding to emerging infectious diseases can best be enabled beyond the current crisis. Many public health threats (including those associated with other **infectious diseases**, **bioterror-ism** agents **and antimicrobial resistance**) are **urgently in need of pharmaceutical innovation**, **even if their impacts are not as visible** to society **as COVID**-19 is in the imme-diate term. The pharmaceutical industry has responded to previous public health emergencies associated with infec-tious disease in recent times – for example those associated with Ebola and Zika outbreaks.11 However, it has done so to a lesser scale than for COVID-19 and with contribu-tions from fewer companies. Similarly, levels of activity in response to the threat of antimicrobial resistance are still **low**.12 There are important policy questions as to whether – and how – industry could engage with such public health threats to an even greater extent under improved innova-tion conditions.

#### Bioterrorism and future pandemics cause extinction.

Hamish De Bretton-Gordon, CBRN Expert @ British Army, 20 [Director @ DBG Defense, Consultant on CBRN and Biosecurity], “Biosecurity in the Wake of COVID-19: The Urgent Action Needed,” Combatting Terrorism Center Sentinel, November/December 2020, Volume 13, Issue 11, <https://ctc.usma.edu/biosecurity-in-the-wake-of-covid-19-the-urgent-action-needed/> C.VC

Policymakers around the world did not grasp just how large the impact of a bio threat could be. Beyond the enormous human and economic impact, the current pandemic has exposed the weakness, lack of preparedness, and poor responsiveness of healthcare systems of even highly developed countries like the United States and the United Kingdom. And the virus has inflicted carnage, even though SARS-CoV-2 (the virus that causes COVID-19) is not especially virulent. The world may be confronted with other viruses in the future whose combination of virulence (the harm a pathogen does to its host), transmissibility, and other characteristics pose much greater danger.

While overwhelming evidence points to SARS-CoV-2 spontaneously spreading to humans, the advances in synthetic biology and the growth in the number of Level 3 and 4 biocontainment facilities around the world storing deadly viruses1 mean there is also the very real possibility that in the future, bad actors will try to engineer or steal/obtain a highly transmissible and highly virulent virus and unleash it onto the world. Another risk is accidental releases from such biocontainment facilities.

COVID-19, a highly transmissible but not very virulent pathogen, has had a devastating global impact, a fact that will not have gone unnoticed by rogue states and terror organizations. Advances in synthetic biology have created tools that could be put to malevolent use. In the last two decades, scientists synthesized the poliovirus from its genetic sequence,2 recreated the 1918 Spanish flu virus,3 and succeeded in modifying the H5N1 avian flu virus so that it resulted (in a research laboratory) in airborne transmission among mammals.4 In the future, we should think of weaponized biology as no less of an existential threat to the planet than weaponized atomic science. It should also be noted that the fear and panic that even a medium-scale bioterror attack could create could have dangerous implications that may rival or even surpass the immediate loss of life.

The Need to Rethink Likelihood

Given the fact that in late 2019 when, as far as is known, COVID-19 cases first started emerging in China, it had been more than a century since the previous catastrophic outbreak (the 1918-1919 “Spanish flu” pandemic),d it was unsurprising that many thought of such pandemics as a one-in-a-100-year event. Such assumptions should no longer hold. The encroachment of human settlements into areas that had previously been sanctuaries for wildlife5 and the popularity in some parts of the world of markets where people and wild animals are brought into proximity have made it more likely viruses will make the species leap to human beings.e And when they do, as the COVID-19 pandemic illustrated, the interconnectedness of a world in which millions of people fly each day6 means they can spread very rapidly.

There is also growing concern about engineered viruses. Not only have advances in synthetic biology (SynBio) created growing capacity for extremely dangerous viruses to be engineered in a laboratory, but the number of people with access to potentially dangerous ‘dual use’ technology has greatly expanded and continues to expand, making malevolent use of such technology ever more likely.

In the August 2020 issue of this publication, scientists at the U.S. Military Academy at West Point warned that:

The wide availability of the protocols, procedures, and techniques necessary to produce and modify living organisms combined with an exponential increase in the availability of genetic data is leading to a revolution in science affecting the threat landscape that can be rivaled only by the development of the atomic bomb. As the technology improves, the level of education and skills necessary to engineer biological agents decreases. Whereas only state actors historically had the resources to develop and employ biological weapons, SynBio is changing the threat paradigm.

The cost threshold of engineering viruses is also lowering, with the West Point scientists warning that synthetic biology has “placed the ability to recreate some of the deadliest infectious diseases known well within the grasp of the state-sponsored terrorist and the talented non-state actor.”7

As already noted, another source of vulnerability is that deadly viruses could be stolen from or escape from a research laboratory. There are now around 50 Biosafety Level 4f facilities around the world, where the deadliest pathogens are stored and worked on, and this figure is set to increase in the next few years.g This is a large increase over the last 30 years, creating bigger risk of a breach. Of equal, if not greater concern are the thousands of Biosafety Level 3 labs globally,8 which handle deadly pathogens like COVID-19.9

Given what has been outlined above, the risk of a future destructive biological attack or another devastating global pandemic should no longer be seen as low. From this point forward, there should no higher priority for the international community than biosecurity.

## Advantage

#### Ex1

**1AC Breske ’18** [Ashleigh, visiting assistant professor of international studies in the global politics and societies (GPS) department @ Hollins University. She earned her Ph.D. in planning, governance, and globalization at Virginia Tech, her M.A.L.S. in social sciences with a focus on Roman history from Hollins University, and her B.S. in biology with a concentration in classical studies and chemistry. Her current research explores how institutions and cultural values mediate changes in repatriation policy for indigenous cultural property, “Biocolonialism: Examining Biopiracy, Inequality, and Power”, Spectra, 6(2), pp.58–73. DOI: [http://doi.org/10.21061/spectra.v6i2.a.6]//pranav](http://doi.org/10.21061/spectra.v6i2.a.6%5d//pranav)

Through examples of epistemic exploitation and a review of current literature on biocolonialism, this paper will highlight issues of indigenous knowledge and resource appropriation and how they relate to neoliberal economic practices. According to Lorenzo Veracini, the least visible types of colonial subjugation, like informal colonialism and trade imperialism, are the most resistant to change.i **This is especially true for biocolonialism, which arises through the dominant discourse of neoliberal economic practices around the world.** This form of colonialism is based on the exploitation and extraction of traditional resources and knowledge through western conceptions of property ownership. Neoliberalism has created a polarization in the world through conflicts between ethnicities and socio-economic levels, resulting in a dichotomy between the Global North and the Global South. **Concepts of western legal practices, intellectual property rights, national property laws, and biotechnology innovations create a system of biocolonialism with the dominant North capitalizing on these policies and practices.**ii **This has adversely affected the Global South in many ways and acts as an ideology promoting profit and economic growth at the expense of the marginalized.** The shift to neoliberalism has increased the divide between the developed and developing world and the “ideology of the market, and the omnipresence of market forces, have left an indelible mark on the western conception of knowledge.”iii **Power is often in the hands of transnational corporations and lobbyist groups with the global economy becoming larger than individual nation-state economies.**iv Cori Hayden theorizes that bioprospecting is “an important site for thinking about how neoliberalism works.”v For Hayden, **biopiracy is an institutionalized practice garnering transnational capital**. In other words, the opening of the market on biodiversity is argued to be both a development strategy and an argument for conservation within an economic framework. For example, in Peru, foreign corporations have filed more than 11,690 patents on natural resources traditionally used by indigenous communities.vi **Corporate interest in medicinal plants and seeds stems from long-term economic goals.** This example illustrates the current trend of outside transnational corporations showing an interest in traditionally-used medicinal plants and seeds. **Within the globalized economy, free trade agreements create a power imbalance between multinational corporations (MNCs) and the indigenous communities holding traditional knowledges and resources.** **Since indigenous knowledge is disseminated among the community and no one person owns it in the western, legal sense,vii MNCs use bioprospecting projects in areas with rich biodiversity for future development of products.**viii It has been found that bioprospecting success rates greatly increase with the inclusion of indigenous knowledge or local guidance. These endeavors are financed as exploratory enterprises to find aspects of biodiversity and indigenous knowledge as resources that can be patented and used for future development. **Bioprospecting can be considered a form of colonization using a “knowledge-based economy” with profit sought through marginalized peoples and their traditional resources**.ix But, according to Hayden, **“[b]ioprospecting is the new name for an old practice: it refers to corporate drug development based on medicinal plants, traditional knowledge, and microbes culled from the “biodiversity-rich” regions of the globe—most of which reside in the so-called developing nations.”** (Hayden 2003, 1). **Bioprospecting can quickly lead to biopiracy, or the appropriation of traditional knowledge and natural resources without due compensation**.x Biopiracy—and by extension, the intellectual property and patent system—is essentially a new apparatus of power used by MNCs. Bioprospectors make claims on biological resources based on the assumption that the resources are available and open to everyone.xi **Initially, corporations present themselves as the protectors and innovators of these “universally” valuable resources.** They claim that if it were not for their investments, the information and original sources might be lost. **However, it was only after the development of international patents and free trade agreements that indigenous groups understood their exclusion from the economic yields gained by utilizing their knowledge.**xii Essentially, **biocolonialism, in the form of pharmaceutical and agricultural industry development by transnational corporations, is a “continuation of the oppressive power relations that have historically informed the interactions of western and indigenous cultures, and part of a continuum of contemporary practices that constitute forms of cultural imperialism.”**xiii More simply**, it is a form of dispossession and conquest through the lens of neoliberalism**.

#### Ex2

**1AC Breske 2** [Ashleigh, visiting assistant professor of international studies in the global politics and societies (GPS) department @ Hollins University. She earned her Ph.D. in planning, governance, and globalization at Virginia Tech, her M.A.L.S. in social sciences with a focus on Roman history from Hollins University, and her B.S. in biology with a concentration in classical studies and chemistry. Her current research explores how institutions and cultural values mediate changes in repatriation policy for indigenous cultural property, “Biocolonialism: Examining Biopiracy, Inequality, and Power”, Spectra, 6(2), pp.58–73. DOI: http://doi.org/10.21061/spectra.v6i2.a.6]//pranav

**Through biopiracy, outside corporations and nations can quickly take resources and secure their control through international intellectual property rights and patents.** **The legitimation for these corporations stems from this westernized, neoliberal economy and the reduction in trade barriers that benefits the wealthier areas of the world at the expense of marginalized peoples**. Power over these populations becomes normalized as a conception of power over dominated subjects. Indigenous communities are generally smaller populations that remain on the margins within the nation-state until they are found to have economic value. Peripheral governance then becomes more pervasive in their lives under neoliberalism and the erosion of international trade barriers and increases in foreign investors. Under neoliberalism, market rationality is extended to all aspects of life. According to Wendy Brown, and her reading of Weber, there is nothing outside of the market. This is a system that allows for transnational entities to have greater control than individual sovereignties. The deregulation of the market, the elimination of tariffs and social safety nets, and an increase in the decimation of the environment and marginalized cultures are all hallmarks of neoliberalism.xvii **When societies and their traditional resources are incorporated into the economy, they become a form of capital**. Essentially, in relation to resources and traditional knowledge, neoliberalism’s desire for profit creates a political tension between national interests and globalized capital.xviii

#### Exploitation is impossible – developing countries have bad patent laws anyways

Crouch 10/5/18 [Patently-O, America’s Leading Patent Law Source; “Considering the Value of Patents in African Countries”] [DS]

For many patent holders, protecting their inventions internationally does not extend much beyond the IP5: China, the United States, Japan, South Korea and Europe. The following graph of patent applications at the top ten offices shows that patent filings drop off very quickly outside of the IP5:



Source: World Intellectual Property Indicators 2017, published by the World Intellectual Property Organization (WIPO)

Given the picture above, is there much value in having patents in other countries in the world? In particular, is there any real value in having patents in Africa, and especially in some of the smaller African countries?

As a South African patent attorney, I am frequently asked a version of this question by clients overseas. Since a patent is a right to exclude others from practicing the invention, I am quizzed as to what the patent litigation landscape is like in Africa and how easily a patent can be enforced against a competitor. Patent litigation in Africa is rare outside of South Africa, however, and objective measures of the strength of enforcement may not be available in many African countries.

#### Another alt cause – harker inserts yellow

**1AC Breske 3** [Ashleigh, visiting assistant professor of international studies in the global politics and societies (GPS) department @ Hollins University. She earned her Ph.D. in planning, governance, and globalization at Virginia Tech, her M.A.L.S. in social sciences with a focus on Roman history from Hollins University, and her B.S. in biology with a concentration in classical studies and chemistry. Her current research explores how institutions and cultural values mediate changes in repatriation policy for indigenous cultural property, “Biocolonialism: Examining Biopiracy, Inequality, and Power”, Spectra, 6(2), pp.58–73. DOI: http://doi.org/10.21061/spectra.v6i2.a.6]//pranav

**The global demand for medicinal drugs has led to an increase in biopiracy in the Global South**. Once companies find something they believe will be profitable, they want to patent it straightaway so that no one else can capitalize off it. Patents are an easily accessible source of income for those able to apply for them. In fact, patents act as an exclusive control on a product, and, when corporations hold patents on biodiversity, they are creating a monopoly on food and health.xxviii In some ways **it is impossible for those in developing countries to compete with MNCs due to how patents and intellectual property rights are sustained**. Since patents are held nationally instead of internationally, most patent holders tend to be from more developed countries. Because of this divide, **it is possible to inflate the price of patented medicines so that corporations can make an even greater profit, which leads to more global inequalities.** **Rich states can also pay for access to technology for research and resources to control epidemics and infectious diseases more readily than poorer areas of the world.** **With the establishment of the World Trade Organization in 1994, international trade negotiations opened, and western notions of intellectual property rights took a firm hold in pharmaceutical research and development, increasing the strength of MNCs.** This was classified under TRIPS, the Agreement on Trade Related Intellectual Property Rights.xxix TRIPS was negotiated at the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) and set the standard for member states to recognize the same intellectual property rights. This then meant that industries could bypass local patent law by registering their patents in the most favorable jurisdiction.”xxx Before TRIPS, which set consistent requirements, intellectual property was considered a domestic issue with protections set on the national level. However, with TRIPS, transnational corporations are now much more successful at acquiring patents. xxxi For example, looking at the number of patents held at the end of the twentieth century, most were filed by the United States (41.8%) and Europe (41.95%).xxxii **The TRIPS agreements and domestic patent laws, specifically US law, shapes international IPRs and show that the legal system is excluding indigenous or marginalized communities**. xxxiii **There has been a push for TRIPS, predominantly by the pharmaceutical industry, to restrict profit potential by indigenous communities.** Corporations make minor genetic or chemical formula changes for their intellectual property claims and patents and can then claim their product is no longer directly linked to the initial source. Debra Harry has claimed that **the main problem with biocolonialism is the “manipulation and ownership of life itself, and the ancient knowledge systems held by Indigenous peoples.”** xxxiv **The problem stems from the belief that indigenous peoples are merely the holders, not owners, of communal knowledge. What are not considered are their territorial rights to the resources on their lands**. Xxxv

#### Circumvention – Harker inserts yellow

**1AC Breske 4** [Ashleigh, visiting assistant professor of international studies in the global politics and societies (GPS) department @ Hollins University. She earned her Ph.D. in planning, governance, and globalization at Virginia Tech, her M.A.L.S. in social sciences with a focus on Roman history from Hollins University, and her B.S. in biology with a concentration in classical studies and chemistry. Her current research explores how institutions and cultural values mediate changes in repatriation policy for indigenous cultural property, “Biocolonialism: Examining Biopiracy, Inequality, and Power”, Spectra, 6(2), pp.58–73. DOI: http://doi.org/10.21061/spectra.v6i2.a.6]//pranav

Looking at the production of pharmaceuticals, **we can see the importance of Intellectual Property Rights (IPRs) in the debate over the accessibility of indigenous knowledge to outside corporations and investors**. IPRs impact many different fields: healthcare, biodiversity, technology, human and cultural rights, research and development, and agricultural innovations; but, the international system that established international intellectual property rights was hastily organized and linked to trade agreements. xli Shiva claims **IPR laws, under the development of TRIPS and the World Trade Organization (WTO), “have unleashed an epidemic of the piracy of nature’s creativity and millennia of indigenous innovation**.” xlii Transnational corporations are taking advantage of slight “innovations” on traditional knowledge to maintain many of their IPRs. xliii **Together, IPRs and TRIPS, work to suppress indigenous peoples’ ability to control their traditional way of life**. The regulatory system includes domestic laws of developed areas of the world, like the United States, Japan, and Europe, and broader international intellectual property rights agreements. **These agreements resemble doctrines promoting colonialism since they are legal documents fostering the idea of ownership by the dominant colonizers.** Xliv Attempts have been made to establish a declaration that would negate corporate intellectual property rights if public health issues were brought forward by struggling nations’ governments. xlv **But this does not address the issue of restoring indigenous intellectual property rights. Large pharmaceutical corporations in the United States and the European Union have used their vast corporate wealth to prevent the nullification of their IPRs. The inability to invalidate their IPRs means that pharmaceutical companies have ensured rigidity in the trade agreements and prevented generics from being manufactured. This has also ensured their continued legal right to Indigenous knowledge, if not an ethical right**. xlvi Patents are an apparatus of power with universal political and social consequences. Patent policies are developed in western countries but affect poorer, marginalized areas of the world. Unfortunately, there is no international governing body through which all patents are channeled, and they are granted according to individual national domestic laws. These patents are generally established in western countries like Canada, the European Union, and the United States. For all intents and purposes, pharmaceutical companies have more legal rights than people due to trade liberalization.

#### You don’t endorse epistemic subsidiarity – Harker inserts yellow

**1AC McGonigle 3** [Ian Vincent, Assistant Professor of Global Science, Technology, & Society at Nanyang Technological University. Was previously a PhD Candidate in Anthropology and Middle East Studies at the Center for Middle Eastern Studies at Harvard University. He has published over a dozen original research articles in top academic journals, such as: Ethnos: Journal of Anthropology; the Journal of Law and the Biosciences (including the most-read article, with over 30,000 reads); Anthropology Today (cover feature); Journal of Neuroscience; Biophysical Journal; ACS Chemical Neuroscience; and Biochemistry., “Patenting nature or protecting culture? Ethnopharmacology and indigenous intellectual property rights”, Journal of Law and the Biosciences, Volume 3, Issue 1, April 2016, Pages 217–226, DOI: [https://doi.org/10.1093/jlb/lsw003]//pranav](https://doi.org/10.1093/jlb/lsw003%5d//pranav)

* TEK = Traditional Ecological Knowledge
* Sui generis j means like specific to them/ is latin for “their own”
* Epistemic subsidiarity is a legal framework for resolving ontological disputes in relation to varying definitions of nature this is a formalized legal strategy that can take place in multiple ways but has the end goal of protecting spaces for the expression of local autonomy and legitimizing Indigenous processes – this does not entail leaving traditional policy spaces, but rather explains how to improve them and include Indigenous POVs into future action. This helps understand different conceptions of nature and our relationship to it – ie Indigenous people’s relationship is massively different than the western conception of owning nature – only our framework resolves this.
* The framework is consequentialist (obviously limited as to what consequences matter), but is focused on producing the best legal strategy – if you prove that the squo/cp/alt or whatever is a better legal strategy for establishing protections for Indigenous populations or sui generis than the 1ac, you’d win – basic competition stuff lol
* To clarify, the 1AC does operate under a comparative world’s paradigm.

In response to these shortcomings, emerging insights from social studies of science may also help in thinking about the ethical problems, legal structures, and cultural clashes that anthropologists engaging in ethnopharmacology research may face. **Such scholarship may also offer insight for informing policy solutions and establishing better exchange agreements**. Jasanoff,61 for example, **has theorized a legal framework for resolving ontological disputes in relation to varying definitions of nature**. In a discussion of transnational risk governance, **she develops the idiom of ‘epistemic subsidiarity’ to describe a formalized legal strategy that could pave the way to ‘to protect spaces for the expression of local values and local autonomy’, and therefore also protect the legitimacy of local modes of reasoning, within the same judicial system.** ‘Epistemic subsidiarity’ is particularly salient to cross-border disputes where cosmopolitan exchanges require a formal system of reciprocity, compromise, and mutual respect of each party’s respective regimes of knowledge and value. For ethnopharmacology, implementing ‘epistemic subsidiarity’ might mean the establishment of special courts that would consider indigenous claims on their own terms. With the expert mediation by anthropologists, cultural diplomats, or leaders from different parties who can mediate between secular technoscience and indigenous culture, such courts could be a space where indigenous definitions of nature and property are heard in parallel to the interests of other parties, be they states, companies, or researchers. Further, **special laws could be written that would extend the protection of indigenous intellectual property to include non-modern understandings, including ambiguous spirit entities, or acquired TEK.** A system of epistemic subsidiarity also requires political decisions be made at the ‘lowest feasible level of governance’ so that local values and concerns are first taken into account.62 **With epistemic subsidiarity, different knowledge regimes can exist side by side (such as, for example, biology, international law, state law, and local indigenous law and healing practices), without one necessarily subordinating to another**. **Epistemic subsidiarity could also facilitate the writing of trade agreements on local indigenous terms, while also recognizing international law and other parties’ interests. Combining epistemic subsidiarity with the emerging anthropological perspectives that regard indigenous visions of their world with parallel ontological status to Western science could deliver ‘symmetry’ in the negotiation of trade agreements, and consequently, could help resolve the ethical dilemmas of ethnopharmacologists and indigenous peoples.** Stories like that of the Mexican peasants and their redundancy from the industry due to shortcuts made by chemistry in conjunction with IPR, or indeed the recent case of the Peruvian people who helped Napo develop ‘Dragon’s blood,’ show that IPR are not adequate instruments for representing or protecting indigenous TEK and their embodied know-how. Moreover, **current laws do not afford equal status to, or demand a symmetrical engagement with, non-modern cultural values and ambiguous local entities**. Further, **most discourse within the ethnopharmacology community is oriented to the biological and pharmacological sciences, with much less attention paid to the broader social, political, and anthropological dimensions of the research**.63 Consequently, the ethnopharmacology community has not yet addressed these questions with sustained debate, nor has there been much done to envision an ethical platform upon which to establish exchange agreements that incorporate ‘non-modern’ visions of the world. **Indigenous communities therefore need sui generis laws to protect their shared cultural heritage and shared natural resources**. So far, ‘Brazil, Costa Rica, India, Peru, Panama, the Philippines, Portugal, Thailand and the USA have all adopted sui generis laws that protect at least some aspects of traditional knowledge’.64 But **extending the concepts of ontological pluralism and epistemic subsidiarity into indigenous IPR laws could help lawmakers resolve the ethical and legal dilemmas over whose knowledge, and definitions of property, should prevail in exchange agreements and legal disputes.**

#### Pragmatism and HR-centered frameworks are better for achieving decolonization – this also impact turns the Mukuka evidence later

Miklaucic '20 [Michael; 8/26/20; Senior Fellow at the Institute of National Strategic Studies at NDU; "Reviving the Liberal World Order: An American Challenge," https://www.realcleardefense.com/2020/08/26/reviving\_the\_liberal\_world\_order\_an\_american\_challenge\_575264.html] //GJ

Is the liberal world order really dead? A deluge of lamentation among the global elite about its demise and our descent into authoritarianism and autocratic populism is alarming. True, there has been a noticeable erosion at the base of the liberal world order over the past two decades. A persistent slide in the global democracy index with numerous countries slipping into autocracy has accompanied a growing trend of authoritarian populism in the established democracies themselves. The global free trade regime has been threatened, and the notion of liberalism itself attacked.

But is the liberal world order’s end a foregone conclusion? We should not dismiss its economic dynamism, its diverse and innovative cultures, its creative and adaptable populations, and the unprecedented network of alliances and partnerships it has forged among like-minded countries. The future of the liberal world order depends on what happens in the next few years: especially in the United States.

The ideas that defined and shaped the liberal world order originated in the Enlightenment of 17th and 18th century Europe, but many embedded as global norms in the aftermath of World War II. They are rooted in the principles of individual liberty, human rights, justice, and an equitable social contract between the governors and the governed. As these ideas spread and took hold around the world, they catapulted humanity into unprecedented improvements in the quality of life, as measured by longevity, literacy, and prosperity, the widely accepted basic elements of human well-being. The record of liberalism is not unsullied, having bred imperialism, embraced slavery, and fueled catastrophic wars. Yet no period in human history has come close to this kind of accelerated improvement in the standard of living.

Today the liberal world order is indeed under siege. The global information and communications revolution has revealed appalling economic inequality, egregious opportunity inequality, explosive racial inequality, and divisive educational inequality, leading many to doubt the inherent benefits of the liberal order. Autocrats and populists have found enthusiastic followings in the dispossessed, disenfranchised, and disrespected. In this seething global cauldron of dissatisfaction opportunists of every kind—millennialists, terrorists, transnational crime bosses, and sociopaths—flourish.

For the past century, the United States has been the acknowledged leader of the liberal world order. American leadership brought the United Nations, the Universal Declaration of Human Rights, the World Bank and International Monetary Fund, and the General Agreement on Trades and Tariffs (which eventually became the World Trade Organization) into existence. American military power provided protection and security with the most powerful armed forces ever seen to all who would join the liberal world order (even if only nominally). At the turn of the 21st century, the United States was the acknowledged global hegemon and sole hyperpower.

How much has changed in 20 years. Yet it is still within the United States' ability to reverse the decline of the liberal world order; a great deal depends on the actions taken by the next administration, whether it is a second Trump administration or a Joe Biden administration. There can be no doubt that the United States must immediately come to grips with the COVID-19 pandemic, and that America has much to do to put its house in order. While it can no longer claim the commanding heights alone, there are three things it must do to restore and resuscitate the liberal world order from which it and so many others have profited, all related to its unique and unprecedented global network of alliances and partnerships.

First, in his 2021 inaugural address, the President must revive and breathe new life into the atrophied American alliance and partner network, and henceforth seize every opportunity to reinforce the message of alliance solidarity. This has to start with the formal alliances; NATO, Japan, Republic of Korea, Australia and New Zealand, Philippines, and Thailand. The latter two will take time, but the others are all keen to repair their damaged relations with their principal security partner and cultural sibling. Important partners such as India, Israel, Jordan, Sweden, Singapore, and many others, including the western hemispheric partners, must come next. These relationships are not transactional; they are existential. Skilled diplomacy carried out by professional diplomats is the critical key. Cool, collegial, and predictable diplomacy based on shared interests, mutual respect, and understanding is the glue that holds alliances and partnerships together, not threats and insults.

The second step is to rebuild a global coalition for democracy and liberal governance through innovative collaboration. NATO and the Group of Seven (G7) are democratic “clubs:” The “quad” consisting of the United States, India, Japan, and Australia is an unofficial grouping of Indo-Pacific democracies. The next administration should rejoin the Open Government Partnership and work through all these groupings to restore faith in the inspirational ideas of individual liberty, egalitarianism, and justice... Joint information and public diplomacy initiatives should be deployed to restore the power of the democratic governance narrative. After all, it is not these concepts that have failed; any failure has been in their implementation. U.S. bilateral relationships need not be hostage to democratic quid pro quos, but democracy should always be a shared aspiration with our allies and partners, and never off the table. Promoting democracy creates a freer world that is safer for Americans.

#### 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.

#### 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.

#### 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.