# 1st off

**Interp: The aff must disclose the plan text and the advantage 30 minutes before round**

**Violation:**

**They didn’t, they didn’t even put their contact info on the wiki**

**1] Evidence Ethics – Disclosure is the only way to verify that cards aren’t miscut or highlighted or bracketed unethically. That’s a voter – maintaining ethical ev practices is key to being good academics and we should be able to verify you didn’t cheat**

**2] Depth of clash – allows debaters to have specific researched objections to the 1AC evidence – that leads to better ev comparison – o/ws because thinking on your feet is non-unique; we still have to do that for responses and CX**

**3] Reciprocity – they get infinite pre-round prep to write the 1AC and we get none to research it**

**4] Education – a) their model incentivizes terrible “one-and-done” affs that are intellectually bankrupt and decrease education – proves they just want the ballot; b) o/ws claims of innovation because innovation is only valuable if the ideas are valuable.**

**Voters are education – it’s why schools fund debate – and fairness – that’s a threshold issue because otherwise you have no obligation to fairly evaluate their arguments**

**Paradigm issues**

**DTD**

**1] Actual abuse - I had to alter my strat to run theory**

**2] Deters future abuse – norm-setting**

**3] DTA is DTD – it’s the 1AC**

**4] At minimum if we’re winning any part of the shell they can’t weigh case; A] lack of preround prep means their truth claims are untested which you should presume them false; B] 1AR extensions look stronger than they really are b/c they kept me from cutting specific evidence to challenge their link chain – that’s a reason why new affs are bad, not why the 1AC is true –no “try or die” 2AR**

#### Competing interps: Reasonability is arbitrary and encourages judge intervention since there’s no clear norm.

#### No RVIs – a] illogical, you don’t win for proving that you meet the burden of being fair, logic outweighs since it’s a prerequisite for evaluating any other argument, b] RVIs incentivize baiting theory and prepping it out which leads to maximally abusive practices.

# 2nd off

#### Interpretation: The aff must specify which intellectual property rights they reduce and to what degree they reduce them.

#### There’s no normal means.

**Chopra 18**, Samir. “The Idea of Intellectual Property Is Nonsensical and Pernicious: Aeon Essays.” Aeon, Aeon Magazine, 12 Nov. 2018, aeon.co/essays/the-idea-of-intellectual-property-is-nonsensical-and-pernicious. Samir Choprais professor of philosophy at Brooklyn College of the City University of New York. He is the author of several books, including A Legal Theory for Autonomous Artificial Agents (2011), co-authored with Laurence White.//sid

In the United States, media and technology have been shaped by these laws, and indeed many artists and creators owe their livelihoods to such protections. But recently, in response to the new ways in which the digital era facilitates the creation and distribution of scientific and artistic products, the foundations of these protections have been questioned. Those calling for reform, such as the law professors Lawrence Lessig and James Boyle, free software advocates such as Richard Stallman, and law and economics scholars such as William Landes and Judge Richard Posner, ask: is ‘intellectual property’ the same kind of property as ‘tangible property’, and are legal protections for the latter appropriate for the former? And to that query, we can add: is ‘intellectual property’ an appropriate general term for the widely disparate areas of law it encompasses? The answer to all these questions is no. And answering the latter question will help to answer the former. Stallman is a computer hacker extraordinaire and the fieriest exponent of the free-software movement, which holds that computer users and programmers should be free to copy, share and distribute software source code. He has argued that the term ‘intellectual property’ be discarded in favour of the precise and directed use of ‘copyright’, ‘patents’, ‘trademarks’ or ‘trade secrets’ instead – and he’s right. This is not merely semantic quibbling. The language in which a political and cultural debate is conducted very often determines its outcome. Stallman notes that copyright, patent, trademark and trade secret law were motivated by widely differing considerations. Their intended purposes, the objects covered and the permissible constraints all vary. In fact, knowledge of one body of law rarely carries over to another. (A common confusion is to imagine that an object protected by one area of law is actually protected by another: ‘McDonald’s’ is protected by trademark law, not copyright law, as many consumers seem to think.) Such diversity renders most ‘general statements … using “intellectual property”… false,’ Stallman [writes](https://www.gnu.org/philosophy/not-ipr.en.html). Consider the common claim that intellectual property promotes innovation: this is actually true only of patent law. Novels are copyrighted even if they are formulaic, and copyright only incentivises the production of new works as public goods while allowing creators to make a living. These limited rights do not address innovations, which is also true of trademark and trade secret law. Crucially, ‘intellectual property’ is only partially concerned with rewarding creativity (that motivation is found in copyright law alone). Much more than creativity is ‘needed to make a patentable invention’, Stallman explains, while trademark and trade secret law are orthogonal to creativity or its encouragement. Clubbing these diversities under the term ‘intellectual property’ has induced a terrible intellectual error A general term is useful only if it subsumes related concepts in such a way that semantic value is added. If our comprehension is not increased by our chosen generalised term, then we shouldn’t use it. A common claim such as ‘they stole my intellectual property’ is singularly uninformative, since the general term ‘intellectual property’ obscures more than it illuminates. If copyright infringement is alleged, we try to identify the copyrightable concrete expression, the nature of the infringement and so on. If patent infringement is alleged, we check another set of conditions (does the ‘new’ invention replicate the design of the older one?), and so on for trademarks (does the offending symbol substantially and misleadingly resemble the protected trademark?) and trade secrets (did the enterprise attempt to keep supposedly protected information secret?) The use of the general term ‘intellectual property’ tells us precisely nothing. Furthermore, the extreme generality encouraged by ‘intellectual property’ obscuresthe specific areas of contention created by the varying legal regimes. Those debating copyright law wonder whether the copying of academic papers should be allowed; patent law is irrelevant here. Those debating patent law wonder whether pharmaceutical companies should have to issue compulsory licences for life-saving drugs to poor countries; copyright law is irrelevant here. ‘Fair use’ is contested in copyright litigation; there is no such notion in patent law. ‘Non-obviousness’ is contested in patent law; there is no such notion in copyright law. Clubbing these diversities under the term ‘intellectual property’ has induced a terrible intellectual error: facile and misleading overgeneralisation. Indiscriminate use of ‘intellectual property’ has unsurprisingly bred absurdity. Anything associated with a ‘creator’ – be it artistic or scientific – is often grouped under ‘intellectual property’, which doesn’t make much sense. And the widespread embrace of ‘intellectual property’ has led to historical amnesia. According to Stallman, many Americans have held that ‘the framers of the US Constitution had a principled, procompetitive attitude to intellectual property’. But Article 1, Section 8, Clause 8 of the US Constitution authorises only copyright and patent law. It does not mention trademark law or trade secret law. Why then does ‘intellectual property’ remain in use? Because it has polemical and rhetorical value. Its deployment, especially by a putative owner, is a powerful inducement to change one’s position in a policy argument. It is one thing to accuse someone of copyright infringement, and another to accuse of them of the theft of property. The former sounds like a legally resolvable technicality; the latter sounds like an unambiguously sinful act.

#### Reduce requires quantification.

**Passarello 13** – J.D. Candidate, Duke University School of Law, 2013. (Nicholas, NOTE: THE ITEM VETO AND THE THREAT OF APPROPRIATIONS BUNDLING IN ALASKA, 30 Alaska L. Rev. 125, Lexis)//BB

With respect to the item veto power, the question in the case was whether or not the governor could strike descriptive language without affecting the rest of the appropriation. The state constitution clearly guarantees the power to "strike or reduce items in appropriations bills." 61 To determine what exactly it is that the governor may strike, the Alaska Supreme Court here addressed the meaning of "item" for the first time. 62 The court concluded that "item" means "a sum of money dedicated to a particular purpose." 63 This holding rested on five lines of analysis, all of which indicate that the amount of an appropriation is the object affected by the item veto power. First, the court noted that the word "item" implies "a notion of unity between two essential elements of an appropriation: the amount and the purpose." 64 Altering the amount of an item is expressly allowed in the Constitution via the reduction power, 65 but to alter the purpose would destroy that unity by fundamentally changing the item into something else not enacted by the legislature. 66 Second, the use of the word "reduce" implies a quantitative effect, and the drafters likely intended the companion word "strike" to  [\*136]  have the same type of effect as well. 67 Third, "reduce" and "strike" describe the same action applied to different extents: when an amount is "reduced" to the point where it is lessened to nothing, it is effectively "struck." 68 Thus, the object of the "strike"must be associated with an amount of money to the extent that it can be lessened. 69 Fourth, the historical purpose of the item veto was to curtail the amount of state spending by mitigating the effects of log-rolling, a purpose most closely directed at the amount of the appropriation. 70 Fifth, "public policy disfavors a reading of "item' that would permit the executive branch to substantively alter the legislature's appropriation bills, resulting in appropriations passed without the protection our constitution contemplates." 71 For these reasons, the court concluded that the power to "strike" only refers to completely diminishing the amount of an appropriations item, not the descriptive language accompanying it.

#### Violation: they don’t

#### Standards

#### a] Shiftiness – vague plan wording wrecks Neg Ground since it’s impossible to know which DAs link or which CPs are competitive since different IP’s have different implications – absent 1AC specification, the 1AR can squirrel out of links by saying they don’t effect a certain protection or they don’t reduce IP enough to trigger the link.

#### b] Topic Education – nuanced debates about IP requires specification since each form of IPR has specific issues related to it so generalization disincentivizes in-depth research. Topic Education is a voter since we only debate the topic for two months.

#### Reductions Spec isn’t regressive – it’s a core discussion central to the literature, we’ve read a card proving predictability, and is a floor for topic debates.

#### CX doesn’t check - 1] Skews pre-round prep – key to in-depth clash, 2] Judges don’t flow CX which makes it unverifiable

#### Education is a voter since it is the only portable and durable skill that influences our subject formation. Fairness is a voter since a] debate is a game, competition equity matters proven by desire for wins, b] is worthless without rules and equal access.

#### Drop the debater – a] deters future abuse through a loss and b] set better norms for debate since you are less likely to repeat a practice you can lose for

#### Competing interps – [a] reasonability is arbitrary and encourages judge intervention since there’s no clear model of debate, [b] it creates a race to the top where we create the best possible norms for debate through offense [c] offense defense paradigm is the best method for evaluation since you can compare benefits under both interps easier.

#### No RVIs – a] illogical, you don’t win for proving that you meet the burden of being fair, if logic isn’t true then you should hack against them, b] RVIs incentivize baiting theory and prepping it out which leads to maximally abusive practices

# 3rd off

#### Counterplan Text: The member nations of the World Trade Organization ought to 1] reduce intellectual property protections for COVID-19 medicines except for dual-use biotechnologies and 2] offer a 3 year patent extension on dual use biotechnologies conditioned on accompanying countermeasures.

#### The counterplan incentivizes development into countermeasures and removes terrorist access to biotechnologies.

Million-Perez, H. (2016). Addressing duel-use technology in an age of bioterrorism: Patent extensions to inspire companies making duel use technology to create accompanying countermeasures. AIPLA Quarterly Journal, 44(3), 387-436. Rachael Million-Perez is an associate with Fitzpatrick, Cella, Harper & Scinto and a graduate of the George Washington University Law School. //sid

Although previous congressional proposals, Acts, and committees aimed to fund and incentivize countermeasures, each failed to target dual-use technology countermeasure development. This article proposes, therefore, that the USPTO offer a patent-term extension for patents directed to dual-use technology on the condition that the patent owner creates an accompanying countermeasure. This article argues for an extension of three years 251 for patent owners who meet this condition in addition to any patent-term adjustments afforded to the patent owner pursuant to Title 35 of the U.S. Code or legislative acts. A. Patent Extension for Dual-Use Technologies in Exchange for an Accompanying Countermeasure is an Appropriate and Realistic Incentive that Could Yield Significant Benefit The conditional patent-term extension proposed here provides an incentive that will: (1) reduce unbridled accessibility to dual-use technologies, (2) make countermeasure development an attractive and cost-effective business investment, and (3) take advantage of companies and individuals who currently specialize in the dual-use technology field, and who possess the necessary resources to create accompanying counter-measures. The conditional patent-term extension proposed here provides an incentive that will reduce unbridled accessibility to dual-use technologies. Although accessibility to dual-use technology is essentially ungovernable in the Internet age, providing a three-year patent-term extension to a dual-use technology will motivate companies to collaborate with the U.S. Government to identify and enjoin individuals infringing their patented dual-use technology. As a result, biohackers and terrorist organizations will have diminished access to these technologies. Dissimilar to previous and current countermeasure incentives, the conditional patent-term extension proposed here will make countermeasure development an attractive and cost-effective business investment, because it will be easily applicable, lower the financial risk of countermeasure development, and potentially lead to profits. Unlike previous incentives, a patent-term extension on a dual-use technology in exchange for creating a countermeasure to that technology presents a simple and easily-applicable business model. Private companies need not contort themselves to meet the demands of legislation, like Project BioShield. Rather, a patent-term extension on the dual-use technology will be granted when the company identifies a dual-use quality of one of its innovations and opts to develop a countermeasure to the dual use of that specific innovation. Upon successful development of a countermeasure, the USPTO will then extend the company's dual use technology patent. Because the company likely has already received approval of the dual-use technology, it need not worry about whether the extension is affected by the countermeasure's approval time. The simplicity of this proposed regime would attract companies and individuals frustrated with other complicated or inapplicable incentives. In addition, the length and specificity of this proposed extension renders it a strong incentive that will lower the financial risk of countermeasure investment. The length of patent-term extension incentive must be able to generate participation by virtually guaranteeing a return on the company's investment in countermeasure production. As discussed above, the risk of countermeasure development is incredibly high, and thus the promise that a company may recoup or even profit from developing a countermeasure will entice companies who had previously avoided countermeasure investment.253 For these reasons, this article proposes a three-year patent term extension. Recent studies showed an increase in domestic R&D investment and new pharmaceutical product development when the patent-term extension changed from seventeen years to twenty years in both the United States and Canada.254 A similar surge may occur for dual-use technology countermeasure investment under the proposed extension. Over the additional three years of the patent term, companies are likely to receive the benefit of extending their monopoly on a profitable dual-use technology such that the company will likely recoup countermeasure development costs and, potentially, profit. As a result, dual-use technology countermeasure production is likely to increase. Additionally, proponents of patent extension, like Dr. Josh Bloom, Director of Chemical and Pharmaceutical Sciences at the American Council on Science and Health, contend that three-year patent extensions are likely appropriate for patents related to the company's portfolio.255 Unlike previous and current countermeasure incentives, the extension proposed here would neither under- nor over-compensate companies. For example, the six-month to two-year extension- offered in S. 975 and S. 3-are too short in length to ensure both that small and large companies find the incentive desirable.25 6 A three-year extension, however, would further assure that any size company would recoup its investment. Furthermore, unlike a wild card patent extension, which would permit a company to extend the life of any blockbuster product and thus accrue arguably unwarranted financial gain, under this proposal a company can only extend the life of a narrowly defined dual-use technology. A dual-use technology may or may not be a blockbuster. The chances that a dual-use technology has blockbuster status, however, are slim, considering only around 30 percent of newly-introduced pharmaceutical drugs have profits that exceed average R&D costs.257 As a result, large companies do not have an unfair advantage, nor do small companies have an unfair disadvantage. Rather, if a dual-use technology is not a blockbuster, both smaller biotechnology companies, with less than $500 million in annual revenue, and large companies will need a patent extension lengthy enough to guarantee cost recoup.258 Therefore, unlike the previously proposed extensions, three-year extensions to a dual-use technology patent will afford companies a considerable, yet fair, return on their investment in countermeasure development. A conditional patent-term extension like the one proposed here will also leverage companies' expertise and resources. Because a countermeasure to a dual-use technology will likely require the same expertise and resources used to develop the dual-use technology, a company may avoid some R&D costs when it develops both. Furthermore, tapping into a company's foundation of expertise and resources may expedite production of countermeasures to dual-use technology. Unlike acquiring separate countermeasures via mergers or acquisitions, using this expertise and resources springboard for countermeasure 259 The Monsanto herbicide, Roundup@, and the Roundup Ready@ crops genetically modified to be resistant to Roundup illustrates when a patent owner could be taking advantage of her expertise and resources. In the 1970s, Monsanto created the Roundup herbicide farmers use today.260 By the mid-90's, Monsanto neared the expiration date on its patent of Roundup and faced the possibility of losing the production rights of the blockbuster.261Yet Monsanto was able to use genetic engineering to create Roundup-Ready crops resistant to Roundup in 1996.262 In particular, Monsanto was able to create these plants after working on its herbicide when one of its scientists accidentally discovered Roundup-resistant bacteria. 263 Exploiting this discovery, the company worked diligently to splice the 26 resistant gene into a working plant model. 4 Because these crops were resistant to Roundup, a farmer used the herbicide in the fields to eliminate unwanted foliage while not harming the main crop. 265 Notably, Monsanto did not make a countermeasure to its herbicide, but similar to Monsanto's ability to create two technologies from a single concept, companies producing dual-use technologies can exploit discoveries made in their pursuit of creating a dual-use technology to eventually create an accompanying countermeasure. In sum, unlike previous countermeasure incentives, the conditional patent-term extension proposed here provides an incentive that reduces terrorist or biohacker accessibility to dual-use technologies, makes countermeasure development an attractive investment, and takes advantage of companies' resources and expertise.

#### Vulnerabilities exposed by COVID have invigorated availability and interest in bioterror, but technical challenges remain as barriers to acquisition.

Koblentz and Kiesel 7/14 [Gregory D. Koblentz (Deputy Director of the Biodefense Graduate Program and Assistant Professor of Government and Politics in the Department of Public and International Affairs at George Mason University) and Stevie Kiesel (Biodefense PhD Student, Schar School of Policy and Government, George Mason University). “The COVID-19 Pandemic: Catalyst or Complication for Bioterrorism?”. Studies in Conflict & Terrorism. Published online 14 Jul 2021. Accessed 7/22/21. <https://www.tandfonline.com/doi/abs/10.1080/1057610X.2021.1944023?journalCode=uter20> //Xu]

Since COVID-19 was declared a pandemic in March 2020, there has been no major bioterrorist incident that challenges or validates the core beliefs of the optimists, pessimists, or pragmatists. Extremists with violent apocalyptic or accelerationist ideologies—chiefly jihadists and far-right extremists—have sought to capitalize on the pandemic, but they still rely on conventional weapons. Based on available open-source information, terrorist interest in weaponizing SARS-CoV-2 seems limited. While some individuals and groups who subscribe to violent apocalyptic or accelerationist ideologies have shown some interest in crudely spreading the virus, most terrorists have sought to exploit the conditions the pandemic created rather than the virus itself. An increase in the risk of bioterrorism cannot be completely discounted as the equipment, knowledge, and expertise to work with high-risk pathogens is increasingly available and there are a small number of groups with the ideologies and objectives consistent with the use of biological weapons. Still, important technical barriers to acquiring and using a biological weapon capable of causing mass casualties, even far below the effects of a pandemic pathogen, will remain even after the pandemic is contained. While COVID-19 graphically demonstrated the vulnerability of modern societies to infectious diseases, the lessons learned from this experience, if properly implemented, should significantly improve the capability of governments around the world to detect and respond to future pandemics as well as deliberate disease outbreaks. Counterterrorism and biodefense efforts should not be dictated by the latest “‘risk of the month’ policies crafted in the wake of visible or highly publicized events.”117 Instead, strategies for reducing the likelihood and consequences of bioterrorism in the wake of the COVID-19 pandemic should be based on a realistic appraisal of the risk and investments should be optimized to strengthen preparedness against the full spectrum of biological threats.

#### IP protections are the only limit on proliferating dual-use biotech – losing patents puts financial pressure on companies to outsource R&D, which skyrockets bioterror acquisition.

Finlay 10 [Brian Finlay (President and Chief Executive Officer of the Stimson Center, M.A. from the Norman Patterson School of International Affairs at Carleton University, a graduate diploma from the School of Advanced International Studies, the Johns Hopkins University and an honors B.A. from Western University in Canada). “The Bioterror Pipeline: Big Pharma, Patent Expirations, and New Challenges to Global Security”. The Fletcher Forum of World Affairs. Vol. 34, No. 2 (Summer 2010), pp. 51-64. <https://www.jstor.org/stable/45289504?seq=1#metadata_info_tab_contents> //Xu]

Until recently, these investment risks were frequently mitigated by income generated from past drug development successes. In most markets, that income was guaranteed by strict patent protections that closed the window to outside competition for a set period of time. More recently, however, the uncertainty of R&D investments has been complicated not only by the global economic downturn, but more importantly by looming patent expirations that will open many of big pharma's patent-protected drugs to generic competition. Between 2007 and 2012, more than three dozen drugs will lose patent protection, removing an estimated $67 billion from big pharma's annual sales.33 With existing drug development pipelines unable to fill the gaps, biopharmaceutical companies are under intense pressure not only to cut costs - which would provide only temporary relief to the bottom line - but also to rapidly replenish their development pipelines. Some industry analysts have described this "perfect storm" as an "existential" moment for big pharma.34 Many pharmaceutical companies have approached this challenge by accelerating and widening the outsourcing and off-shoring of both R&D and manufacturing, and by aggressively buying promising assets from small biotech companies through acquisitions and strategic alliances. Interestingly, these partnerships are less frequently linked with American or even Western-owned and-operated companies than in the past. Many pharmaceutical giants like Indiana-based Eli Lilly are turning to alliances with firms in Asia and elsewhere around the world, outsourcing key technical operations. Instead of functioning as fully integrated firms, big pharma companies have found value in networked relationships with independent small to large firms, universities, and non-profit biotechnology laboratories around the globe.35 The net result has accelerated technology proliferation - for both beneficial and nefarious uses - far beyond the traditional hubs for biotech innovation. Pharma's increasingly desperate search to seed and ultimately acquire innovative new biotechnologies means that foreign (non- Western) markets are pulling ahead in biotech innovation. Indeed, the quantity of biotech companies outside the United States has grown remarkably in recent years: in Israel, the number grew from 30 in 1990 to about 160 in 2000; in Brazil, from 76 in 1993 to 354 in 2001; and remarkably, in South Korea, from one in 2000 to 23 in 2003. 36 More generally, the Asia-Pacific region has emerged as one of the world s fastest-growing biotechnology hubs, with the growth of publicly traded companies handily outpacing growth in the United States and Europe over recent years.37 As fruitful partnerships lead big pharma to increasingly generate resources, technologies, and knowledge, these capacities spin off new competitor firms in a self-executing multiplier effect. With the number of facilities and highly trained individuals increasing, the likelihood of a serious biological accident or nefarious incident will similarly rise, which will be particularly risky when dual-use technologies are introduced into insufficiently regulated markets. CONCLUSIONs In statements, U.S. officials continue to cite several countries believed to have or to be pursuing a biological weapons capability.38 But globalization exports the challenge of bioproliferation far beyond these geographic boundaries and transcends multiple societal layers well beyond government actors. As a result, it is increasingly clear that states no longer have a monopoly on dual-use biological R&D. Recent evidence suggests a growing threat of terrorist acquisition of biological weapons. As technological advancement in the life sciences is progressively pushed into countries of the Global South, some of which are also potential hotbeds for terrorist activity, the nexus of science and terrorism becomes especially acute. While far from perfect, the current system of stringent controls levied by Western governments over the biopharmaceutical sector has proven remarkably effective, especially given the diffusion of technologies and the ease of their redirection for hostile purposes. As the biotech revolution continues to widen, however, advanced industrialized governments are increasingly playing catch-up with changing technological realities. As these technologies proliferate, security analysts have become uneasy with the lack of controls in many states. The dearth of legal controls, the lack of rigor in their enforcement, and the growth in private-actor involvement in dual-use activities has sobering implications for global security.

#### Bioterrorism causes Extinction – overcomes any conventional defense.

Walsh 19, Bryan. End Times: A Brief Guide to the End of the World. Hachette Books, 2019. (Future Correspondent for Axios, Editor of the Science and Technology Publication OneZero, Former Senior and International Editor at Time Magazine, BA from Princeton University)//Elmer

I’ve lived through disease outbreaks, and in the previous chapter I showed just how unprepared we are to face a widespread pandemic of flu or another new pathogen like SARS. But a deliberate outbreak caused by an engineered pathogen would be far worse. We would face the same agonizing decisions that must be made during a natural pandemic: whether to ban travel from affected regions, how to keep overburdened hospitals working as the rolls of the sick grew, how to accelerate the development and distribution of vaccines and drugs. To that dire list add the terror that would spread once it became clear that the death and disease in our midst was not the random work of nature, but a deliberate act of malice. We’re scared of disease outbreaks and we’re scared of terrorism—put them together and you have a formula for chaos. As deadly and as disruptive as a conventional bioterror incident would be, an attack that employed existing pathogens could only spread so far, limited by the same laws of evolution that circumscribe natural disease outbreaks. But a virus engineered in a lab to break those laws could spread faster and kill quicker than anything that would emerge out of nature. It can be designed to evade medical countermeasures, frustrating doctors’ attempts to diagnose cases and treat patients. If health officials manage to stamp out the outbreak, it could be reintroduced into the public again and again. It could, with the right mix of genetic traits, even wipe us off the planet, making engineered viruses a genuine existential threat. And such an attack may not even be that difficult to carry out. Thanks to advances in biotechnology that have rapidly reduced the skill level and funding needed to perform gene editing and engineering, what might have once required the work of an army of virologists employed by a nation-state could soon be done by a handful of talented and trained individuals. Or maybe just one. When Melinda Gates was asked at the South by Southwest conference in 2018 to identify what she saw as the biggest threat facing the world over the next decade, she didn’t hesitate: “A bioterrorism event. Definitely.”2 She’s far from alone. In 2016, President Obama’s director of national intelligence James Clapper identified CRISPR as a “weapon of mass destruction,” a category usually reserved for known nightmares like nuclear bombs and chemical weapons. A 2018 report from the National Academies of Sciences concluded that biotechnology had rewritten what was possible in creating new weapons, while also increasing the range of people capable of carrying out such attacks.3 That’s a fatal combination, one that plausibly threatens the future of humanity like nothing else. “The existential threat that would be most available for someone, if they felt like doing something, would be a bioweapon,” said Eric Klien, founder of the Lifeboat Foundation, a nonprofit dedicated to helping humanity survive existential risks. “It would not be hard for a small group of people, maybe even just two or three people, to kill a hundred million people using a bioweapon. There are probably a million people currently on the planet who would have the technical knowledge to pull this off. It’s actually surprising that it hasn’t happened yet.”

# Case

Extinction first –  
1 – Forecloses future improvement – we can never improve society because our impact is irreversible  
2 – Turns suffering – mass death causes suffering because people can’t get access to resources and basic necessities  
3 – Moral obligation – allowing people to die is unethical and should be prevented because it creates ethics towards other people  
4 – Objectivity – body count is the most objective way to calculate impacts because comparing suffering is unethical  
5 – Moral uncertainty – if we’re unsure about which interpretation of the world is true – we ought to preserve the world to keep debating about it