# FW

#### Pleasure and pain are the starting point for moral reasoning—they’re our most baseline desires and the only things that explain the intrinsic value of objects or actions

Moen 16, Ole Martin (PhD, Research Fellow in Philosophy at University of Oslo). "An Argument for Hedonism." Journal of Value Inquiry 50.2 (2016): 267. SM

Let us start by observing, empirically, that a widely shared judgment about intrinsic value and disvalue is that pleasure is intrinsically valuable and pain is intrinsically disvaluable. On virtually any proposed list of intrinsic values and disvalues (we will look at some of them below), pleasure is included among the intrinsic values and pain among the intrinsic disvalues. This inclusion makes intuitive sense, moreover, for there is something undeniably good about the way pleasure feels and something undeniably bad about the way pain feels, and neither the goodness of pleasure nor the badness of pain seems to be exhausted by the further effects that these experiences might have. “Pleasure” and “pain” are here understood inclusively, as encompassing anything hedonically positive and anything hedonically negative. 2 The special value statuses of pleasure and pain are manifested in how we treat these experiences in our everyday reasoning about values. If you tell me that you are heading for the convenience store, I might ask: “What for?” This is a reasonable question, for when you go to the convenience store you usually do so, not merely for the sake of going to the convenience store, but for the sake of achieving something further that you deem to be valuable. You might answer, for example: “To buy soda.” This answer makes sense, for soda is a nice thing and you can get it at the convenience store. I might further inquire, however: “What is buying the soda good for?” This further question can also be a reasonable one, for it need not be obvious why you want the soda. You might answer: “Well, I want it for the pleasure of drinking it.” If I then proceed by asking “But what is the pleasure of drinking the soda good for?” the discussion is likely to reach an awkward end. The reason is that the pleasure is not good for anything further; it is simply that for which going to the convenience store and buying the soda is good. 3 As Aristotle observes: “We never ask [a man] what his end is in being pleased, because we assume that pleasure is choice worthy in itself.”4 Presumably, a similar story can be told in the case of pains, for if someone says “This is painful!” we never respond by asking: “And why is that a problem?” We take for gra**nted that** if something is painful, we have a sufficient explanation of why it is bad**. If we** are onto something in our everyday reasoning about values, it seems that pleasure and pain are both places where we reach the end of the line in matters of value. Although pleasure and pain thus seem to be good candidates for intrinsic value and disvalue, several objections have been raised against this suggestion: (1) that pleasure and pain have instrumental but not intrinsic value/disvalue; (2) that pleasure and pain gain their value/disvalue derivatively, in virtue of satisfying/frustrating our desires; (3) that there is a subset of pleasures that are not intrinsically valuable (so-called “evil pleasures”) and a subset of pains that are not intrinsically disvaluable (so-called “noble pains”), and (4) that pain asymbolia, masochism, and practices such as wiggling a loose tooth render it implausible that pain is intrinsically disvaluable. I shall argue that these objections fail. Though it is, of course, an open question whether other objections to P1 might be more successful, I shall assume that if (1)–(4) fail, we are justified in believing that P1 is true itself a paragon of freedom—there will always be some agents able to interfere substantially with one’s choices. The effective level of protection one enjoys, and hence one’s actual degree of freedom, will vary according to multiple factors: how powerful one is, how powerful individuals in one’s vicinity are, how frequent police patrols are, and so on. Now, we saw above that what makes a slave unfree on Pettit’s view is the fact that his master has the power to interfere arbitrarily with his choices; in other words, what makes the slave unfree is the power relation that obtains between his master and him. The difﬁculty is that, in light of the facts I just mentioned, there is no reason to think that this power relation will be unique. A similar relation could obtain between the master and someone other than the slave: absent perfect state control, the master may very well have enough power to interfere in the lives of countless individuals. Yet it would be wrong to infer that these individuals lack freedom in the way the slave does; if they lack anything, it seems to be security. A problematic power relation can also obtain between the slave and someone other than the master, since there may be citizens who are more powerful than the master and who can therefore interfere with the slave’s choices at their discretion. Once again, it would be wrong to infer that these individuals make the slave unfree in the same way that the master does. Something appears to be missing from Pettit’s view. If I live in a particularly nasty part of town, then it may turn out that, when all the relevant factors are taken into account, I am just as vulnerable to outside interference as are the slaves in the royal palace, yet it does not follow that our conditions are equivalent from the point of view of freedom. As a matter of fact, we may be equally vulnerable to outside interference, but as a matter of right, our standings could not be more different. I have legal recourse against anyone who interferes with my freedom; the recourse may not be very effective—presumably it is not, if my overall vulnerability to outside interference is comparable to that of a slave— but I still have full legal standing.68 By contrast, the slave lacks legal recourse against the interventions of one speciﬁc individual: his master. It is that fact, on a Kantian view—a fact about the legal relation in which a slave stands to his master—that sets slaves apart from freemen. The point may appear trivial, but it does get something right: whereas one cannot identify a power relation that obtains uniquely between a slave and his master, the legal relation between them is undeniably unique. A master’s right to interfere with respect to his slave does not extend to freemen, regardless of how vulnerable they might be as a matter of fact, and citizens other than the master do not have the right to order the slave around, regardless of how powerful they might be. This suggests that Kant is correct in thinking that the ideal of freedom is essentially linked to a person’s having full legal standing. More speciﬁcally, he is correct in holding that the importance of rights is not exhausted by their contribution to the level of protection that an individual enjoys, as it must be on an instrumental view like Pettit’s. Although it does matter that rights be enforced with reasonable effectiveness, the sheer fact that one has adequate legal rights is essential to one’s standing as a free citizen. In this respect, Kant stays faithful to the idea that freedom is primarily a matter of standing—a standing that the freeman has and that the slave lacks. Pettit himself frequently insists on the idea, but he fails to do it justice when he claims that freedom is simply a matter of being adequately (and reliably) shielded against the strength of others. As Kant recognizes, the standing of a free citizen is a more complex matter than that. One could perhaps worry that the idea of legal standing is something of a red herring here—that it must ultimately be reducible to a complex network of power relations and, hence, that the position I attribute to Kant differs only nominally from Pettit’s. That seems to me doubtful. Viewing legal standing as essential to freedom makes sense only if our conception of the former includes conceptions of what constitutes a fully adequate scheme of legal rights, appropriate legal recourse, justiﬁed punishment, and so on. Only if one believes that these notions all boil down to power relations will Kant’s position appear similar to Pettit’s. On any other view—and certainly that includes most views recently defended by philosophers—the notion of legal standing will outstrip the power relations that ground Pettit’s theory.

#### Thus, the standard is maximizing expected well-being

#### 1] Death is bad and outweighs – a) agents can’t act if they fear for their bodily security which constrains every ethical theory, b) it destroys the subject itself – kills any ability to achieve value in ethics since life is a prerequisite which means it’s a side constraint since we can’t reach the end goal of ethics without life

#### 2] Actor spec—governments must use util because they don’t have intentions and are constantly dealing with tradeoffs—outweighs since different agents have different obligations—takes out calc indicts since they are empirically denied.

# 1AC

#### The current WTO patent system is locking in global cannabis monopolies.

Kellner 21 “Mitigating the Effects of Intellectual Property Colonialism on Budding Cannabis Markets” Hughie Kellner [Hughie Kellner came from the small farm town of Uvalde, Texas and received a bachelor’s degree in Physics from the University of Texas at Austin. Upon graduation from the Indiana University Maurer School of Law, Hughie will deploy his physics degree while prosecuting patents in the Frankfurt am Main, Germany office of Leydig, Voit, & Mayer. After Hughie’s first year at Maurer, he worked for a law firm in Thailand as a Stewart Fellow.] Indiana Journal of Global Legal Studies Vol. 28 #1 (Winter 2021) <https://www.repository.law.indiana.edu/ijgls/vol28/iss1/9/> SM

B. How the Patent Has Become a Tool for Globalization

The trade-offs have been deemed beneficial by most of the international community, judging by the WTO’s TRIPS Agreement, whereby any signatory must institute a patent system to their national order.57 This requirement was seen to advance the benefits that intellectual property brings to markets and provide assurance for companies who depend upon intellectual property (for our purposes, patents) that they will be protected.58 Thus, investment and commercial activity can now more easily flow into countries where before the lack of protection rendered prospective costs of business prohibitive.59

The TRIPS Agreement imposed strong, uniform requirements upon signatory countries that went a long way towards its goal of globalization, and unlike most international treaties, required enforcement mechanisms with teeth.60 The most relevant requirement here is that the member patent office examining the patent may not discriminate “as to the place of invention, the field of technology and whether products are imported or locally produced.”61 This requirement allows great freedom to engage in business within member countries, and prevents a patent office from giving any advantage to its own citizens that it would not give to a foreigner, unless allowed under other treaties.62 Further, if a patent is secured in the relevant country, a business does not need to set up a subsidiary within that country to obtain protection.63

To assist actors whose businesses cross international borders, the PCT was enacted by the World Intellectual Property Organization (WIPO) to reduce barriers when seeking protection for inventions.64 The PCT, while a treaty in name, acts more like an organization; as the WIPO describes the PCT:

The Patent Cooperation Treaty (PCT) assists applicants in seeking patent protection internationally for their inventions, helps patent Offices with their patent granting decisions, and facilitates public access to a wealth of technical information relating to those inventions. By filing one international patent application under the PCT, applicants can simultaneously seek protection for an invention in a very large number of countries.65

Importantly, filing an application to the PCT does not grant a patent international reach; the inventor must file a patent application and await approval in each jurisdiction they wish to pursue, and patents are still enforceable only in the countries where they are obtained.66 Rather, filing your invention to the PCT, and denoting the countries where you seek patent protection, means that the PCT will provide information on the timeframe and likelihood of a patent being granted in that jurisdiction, along with certain assistance that varies based on the jurisdiction sought.67

C. How Companies Can Utilize Patents Internationally

Both the TRIPS Agreement and the PCT reduce barriers to transferring business across national boundaries by easing the transference of the intellectual property needed. The PCT acts merely as a helping hand and information collection tool, while the TRIPS Agreement acts to ensure that intellectual property will operate largely the same from jurisdiction to jurisdiction and, importantly, will be protected with uniform minimum standards. Without commenting on the desirability of this uniform treatment throughout varying economies, it has never been easier for businesses to use their intellectual property to enter international markets.68 In fact, under the TRIPS Agreement and PCT, companies can file a patent in a country where they have no connections,69 acquire a patent, and simply license the technology to (or bring infringement suits against) companies in the member country without needing to ever establish a presence.70

Notably, the PCT and many countries’ patent systems require you to file your patent application within a restricted timeframe after it is first disclosed.71 Thus, this transportation of patent rights must be loosely simultaneous throughout jurisdictions. However, the fact still remains that sophisticated actors who utilize the protections of the TRIPS Agreement can now acquire a monopoly to practice an invention in any country that is a signatory to the TRIPS Agreement or PCT. This usually reaches far short of global domination since companies generally file only in jurisdictions where they expect the benefit of using the patent to outweigh the cost of applying for one.72 However, if the inventor files a patent in every country that has a viable market for that invention, especially if only a few markets exist, the inventor could create an economic climate close to a global monopoly.

#### Thailand proves – the world is trending towards legalization but big pharma patents lock in cannabis monopolies and crowd out local growth.

Kellner 21 “Mitigating the Effects of Intellectual Property Colonialism on Budding Cannabis Markets” Hughie Kellner [Hughie Kellner came from the small farm town of Uvalde, Texas and received a bachelor’s degree in Physics from the University of Texas at Austin. Upon graduation from the Indiana University Maurer School of Law, Hughie will deploy his physics degree while prosecuting patents in the Frankfurt am Main, Germany office of Leydig, Voit, & Mayer. After Hughie’s first year at Maurer, he worked for a law firm in Thailand as a Stewart Fellow.] Indiana Journal of Global Legal Studies Vol. 28 #1 (Winter 2021) <https://www.repository.law.indiana.edu/ijgls/vol28/iss1/9/> SM

The reason the Thai public was so concerned over the cannabis patents filed by Otsuka and GW is that they represented the floor falling out from beneath them. The patents claimed both cannabinoid oil itself and a process for extracting the cannabinoid oil from the cannabis plant, which, based on the way they sought protection, was very likely not patentable anyway.88 However, if either Otsuka or GW received a patent, that patent would be an incredibly powerful tool in clearing competition in the upcoming market. Members of the Thai public saw their newly granted cannabis industry about to be swallowed up and taken from them by a foreign pharmaceutical company before they even had a chance to venture into it themselves.

This more than questionable “emergency order,” which temporarily blocked the possible grant of patents to Otsuka or GW, paid lip service to the allowances under the TRIPS Agreement,89 but in reality discriminated based on the applicant’s nationality. The goal of the order was to avoid a scenario of foreign monopolization that could pop up in any market that is a signatory to the TRIPS Agreement and institutes some form of commercialization of cannabis. GW and Otsuka Pharmaceuticals did not do anything illegal; they had the right to apply for protection of their intellectual property and did so. The Thai government acted on legally questionable grounds,90 but had a just reason to do so: attempting to avoid the exportation of an upstart cannabis market that would provide a lucrative cash crop to a highly agrarian Thai population.91

The scenario of recreational cannabis markets being promptly secured by foreign interests grows more and more likely as cannabis companies grow larger and more countries look to liberalize cannabis laws.92 As of right now, Canada’s recreational cannabis market, the only recreational cannabis market open to privatization,93 supports the largest cannabis companies in the world with vast amounts of capital, competition, and the best incentives to research and develop products better than and before their competitors.94

The logic of the feared scenario is as follows: if there exists a jurisdiction that establishes a market that produces entities who innovate more than any other jurisdiction, then that jurisdiction will be state of the art by definition. When another jurisdiction opens up a market, until that market supports entities who are innovating on their own and at a level that surpasses or escapes the prior jurisdiction, all entities will either operate below state of the art or at the same level as the prior, more advanced jurisdiction. With that innovation comes the possibility for patent protection. As discussed in Part II, a patent is only enforceable in the jurisdiction (usually country) it is acquired in. However, with the binding rules of the WTO TRIPS Agreement and the helping hand of the PCT, a patent in one country can easily become a patent in another country. If a patent is acquired by the most innovative entities and exported to the less innovative jurisdiction, entities in the less innovative jurisdiction must pay to use that patent if they wish to operate at the state of the art or, alternatively, stop their business. Therefore, the monopoly of one jurisdiction can be imposed upon another jurisdiction, suppressing actors in the less advanced jurisdiction simply because the first jurisdiction got a head start.95 This fear was present at the time the TRIPS Agreement was signed and is still present today:

[S]ome analysts interpret the growing concern of industrialized nations with intellectual property rights as an attempt to control the diffusion of new technologies . . . to freeze the existing international division of labor by way of the control of technology transfers . . . . [I]t is important to recognize that for a [lesser developed] country a reform designed to increase intellectual property rights protection will tend to generate a welfare loss at its initial stages. Because [lesser developed countries] are typically net importers of technology, a usual consequence of a more strict regime of intellectual property laws would be an increase in royalty payments to foreigners.96

As this plays out in today’s evolving cannabis industry, if someone is going to make advancements in the cannabis industry, most of those advancements will be from the Canadian actors before Thai actors, due to the head start and the stronger expected return on innovation in the Canadian recreational market. The Canadian actors’ innovations would be merely the product of the regulatory policies of their respective jurisdiction being amenable to innovation, and then importing those innovations into a jurisdiction that had not previously been amenable to innovation. Accordingly, the Canadian Patent Office has seen the effects of the innovative incentives: the Canadian market has produced and processed many patent applications.97

Further, even if Thailand prohibited any foreign actor from producing, importing, exporting, selling, or engaging with the Thai cannabis industry in any meaningful way, a foreign company could still force itself into the industry with the patent rights and structures available to it under the TRIPS Agreement.98 Without ever having a physical presence, business can be generated by filing a patent and forcing others to license the use of the patent or face an infringement lawsuit.99 Even if an action is not infringing, a patent could be used to threaten a lawsuit upon a new business 100 (every business in the Thai market will be new) that likely would not possess the resources to defend a patent lawsuit (one of the most expensive types of lawsuits)101 and would be forced to submit to a licensing arrangement or close its doors.102

This is so only because Canada decided to violate the terms of the UN Single Convention.103 Thus, Canada was able to safely internalize every first-mover benefit available because the other 184 countries party to the Single Convention, and all other G7 countries, would still be prevented from establishing a recreational cannabis market. Canada may not have had any malicious motives; after all, it did ensure that its regulatory scheme governed international trade as mandated by the Single Convention,104 and thus attempted to keep any acts that violate that treaty from causing other nations to violate it. This seems like the intention of a good neighbor who knows they have broken the rules, but the best intentions in the world do not alone alter the operation or availability of other global legal structures.

A solution needs to be found whereby local actors, who did not have a chance to innovate, are given an opportunity to establish themselves so they can innovate while foreign business and investment is also allowed to participate in the market, bringing their advantage of experience rather than legal monopoly. In the following section, I argue that a solution, unique to the cannabis market, can be found by imposing a small and circumscribed amendment to the TRIPS Agreement, as a resolution to the Canadian recusal from the UN Single Convention.

#### Big pharma leverages cannabis patents to block out competition and secure monopoly – decks medical marijuana access

Barnett 20 Hailey A. Barnett [J.D. candidate 2020, Tulane University Law School; B.A. 2017, Communication, cum laude, Texas A&M University.], "High Risk, High Reward: Patent Law's Effects on the Medical Marijuana Industry," Tulane Journal of Technology and Intellectual Property 22 (2020): 125-164 <https://heinonline.org/HOL/LandingPage?handle=hein.journals/tuljtip22&div=8&id=&page=> SM

B. Cannabis Patents and Pharmaceutical Companies

Patent protection is a key component of the United States legal system. On principle, we should compensate and reward those who have rightfully invented something, as well as incentivize and stimulate further innovation. The marijuana industry has been historically composed of people who believe in the cause, the plant, and the health benefits it brings. Yet, many of the field's "new players" are getting involved with a specific 89 business purpose in mind. Cannabis patents are one way to normalize and bring the industry to the mainstream, but the winners in the patent system are often those who are first and have the most money.'90

It's no secret why everyone wants a piece of the marijuana industry pie: according to an April 2018 report by Grand View Research, Inc., the global legal marijuana market is projected to be worth $146.4 billion by 025.'9' The report additionally found that in 2016, medical marijuana emerged as the largest segment of the industry and is estimated to be valued at $100.03 billion by 2025.192

One way to obtain a monetary stake in the medical marijuana market is to use the patent process to acquire ownership over a particular strain and its seeds.' 93 This limited monopoly ensures that the patent holder "is the only one who can make or sell the product, or license other people to do so."'94 However, there are so many unanswered questions that surround IP protection of a federally illegal substance, it is unclear if the patents will be upheld.'9 5 If cannabis patents are upheld in federal courts, it is possible that a handful of companies could be in a position to demand licensing fees from the rest of the industry.1 96

This incentive is particularly appealing to major multinational pharmaceutical companies (Big Pharma) and is already being capitalized on today. For example, pharmaceutical firms are already seven of the top ten cannabis patent holders in Canada.' 97 These patents, filed prior to the country's full legalization of marijuana, would have been difficult to enforce prior to legalization.' 9 8 However, after Canada legalized marijuana on October 17, 2018, the patents became fully enforceable and gave the companies a key strategic advantage over non-patent holders in the ever- increasingly competitive market.' 99 The biggest concern is that Big Pharma companies will harness their powerful lobbies and seemingly bottomless payrolls to engage in patent blitzes. In other words, they will try to enlarge their patent portfolios and subsequent ownership of marijuana strains and their ancillary byproducts, such as oils, to marginalize competitors.

In the United States, the FDA plays a crucial role in approving and 201 regulating medications for public use. Big Pharma requires the FDA's approval to bring their products to the public market, and it's no secret that Big Pharma's influence on the agency has accrued over many decades and billions of dollars spent.2 0 2 The current FDA Commissioner Scott Gottlieb recently slammed Big Pharma and accused drugmakers of using "gaming tactics" to stall the introduction of generic versions of biologic drugs, "a move that cost the U.S. healthcare system billions of dollars last year. "203 One of these tactics is to engage in patent blitzes, or evergreening, right before a drug's patent protection (and subsequent market exclusivity 20 4 period) expires. "In the pharmaceutical trade, when brand-name companies patent 'new inventions' that are really just slight modifications of old drugs, it's called 'evergreening. "'205 Evergreening occurs because once a drugmaker's patent on a particular drug expires, the door is open for other producers to bring generic versions of the drug to market.206 Patents in patent blitzes are often granted for even the most trivial improvements and innovations related to existing drugs.207 The purpose of evergreening is two-fold: first, to extend the commercial dominance of brand-name drugs, and second, to tie up producers of the generic drugs in 2 08 costly, time-consuming litigation. Evergreening prevents a generic drug's market entry and further extends Big Pharma's monopolies.2 09

A prime example of recent evergreening is when Mylan hiked the price of its life-saving epinephrine injectable drug, EpiPen, by more than 400%.210 After Teva Pharmaceuticals gained approval from the FDA for the first generic version of EpiPen, Mylan sued them for patent infringement, although epinephrine alone was already a generic drug.2 1 Mylan settled and kept "Teva off the EpiPen market until 2015."212 Much like AbbVie's battle with AmGen over a generic version of the former's costly biologic drug Humira, Big Pharma's inclination to place company profits over the needs and desires of patients could continue with cannabis strain patents. 2 13 This will ultimately affect cost and access to medical marijuana products.

Thanks to shifting public opinion and state legalization, a growing number of cannabis patent applications have been filed with the USPTO and it is very likely they will be granted. Although marijuana remains illegal at the federal level, the premature filings signal hope that sometime in the near future, the federal government will reconsider its stance on cannabis, and make medical and recreational marijuana use legal from sea to shining sea.215

Companies with a large numb1er of cannabis strain patents, such as BioTech, could become an even bigger national player in the field of cannabis strain patents as they acquire more market share. Overall, if Big Pharma obtains exclusive rights to use, produce, and sell particular cannabis strains, together with their large influence over the FDA and other government regulatory bodies, they can control public access and maintain already robust profit margins.217

Not surprisingly, Big Pharma is not the only industry chasing profits from marijuana IP rights. Smaller breeders, including scientists who alter the plant for medicinal purposes, worry that large bioagricultural companies like Monsanto and Syngenta will hoard cannabis-based patents and deploy their massive economic power to position themselves as another dominant force in the market.218 in short, an open and accessible marketplace for cannabis products, especially for medicinal use, depends on tracking the patent activity of wealthy, powerful entities to ensure smaller entities are not marginalized.219

#### Monopolies kill cannabis biodiversity which throttles medical marijuana advances and industry innovation.

Barnett 20 Hailey A. Barnett [J.D. candidate 2020, Tulane University Law School; B.A. 2017, Communication, cum laude, Texas A&M University.], "High Risk, High Reward: Patent Law's Effects on the Medical Marijuana Industry," Tulane Journal of Technology and Intellectual Property 22 (2020): 125-164 <https://heinonline.org/HOL/LandingPage?handle=hein.journals/tuljtip22&div=8&id=&page=> SM

A. Biodiversity Implications for Cannabis Strain Patents

Biodiversity, or biological diversity, is an ongoing controversy in the marijuana patent industry. Like comprehensive research on the benefits and drawbacks of medical marijuana, "empirical analysis on biodiversity in the patent system is limited."2 2 2 Biodiversity is a broad term but is generally defined as "biological diversity in an environment as indicated by numbers of different species of plants and animals." 23 Increasingly, however, countries and companies are asserting IP rights in native flora, 224 impacting global biodiversity.

"Historical documents from around the world, some dating as far back as 2900 B.C., tell us that cannabis has lived alongside humans for thousands of years, cultivated for food, fiber, and fodder, as well as for religious and medicinal purposes." 2 5 The fear is that without a wide variety of cannabis strains available for breeding and growing, production and processing of the plant will inevitably consolidate into the hands of large conglomerates.22 6

The United States and Thailand are signatories to the Convention on Biological Diversity (Biodiversity Convention), a multilateral treaty committed to sustainable development. The Biodiversity Convention's goals include "conserving biological diversity, promoting the sustainable use of its components, and the fair use and equitable sharing of benefits from biological resources."228 The Biodiversity Convention requires signatories to enforce regulations on plant patent applications and mandates that new patent applications include the plant's genetic resources and evidence of local use if they seek to patent the plant in a certain country. This is the chief reason behind the Biodiversity Sustainable Agriculture Food Sovereignty Action Thailand's (Biothai) call for careful scrutiny of recently filed foreign cannabis patents in the country, as discussed in greater detail in the next Section.

Since medical marijuana is now legal for use and manufacture in Thailand, the mere implication that fabled Thai marijuana strains, such as "Northern Lights," could be available on the global market has generated 23 much buzz. 1 Like Cuban cigars or French champagne, Thai marijuana is known for its potency and quality.232 Thailand's marijuana is apure sativa landrace strain, meaning it is a local strain of cannabis that has adapted to Thailand's native environment and conditions over time. Environment plays a key role in the THC, CBD, and terpene quality and quantity and is part of what makes landrace strains so unique. For example, the marijuana plants and seeds that are indigenous to the tropical jungles of Thailand are bred to preserve their naturally occurring high THC levels.235

As more cannabis strain patents are granted worldwide, it is possible that growers will be increasingly dependent on seed makers that hold patents on certain types of seeds and methods used to produce them. As a result, growers will be subject to agreements and royalties and will be charged licensing fees for use of the seeds. A healthy number and variety 236 of available cultivars are vital for advancing cannabis legalization and the industry’s continued growth. From an agricultural perspective, the patent system encourages a consolidation and reduction of variety in order to enhance and maximize profits. This can be seen in today's staple crops, such as com, soy, and wheat, where fewer cultivars exist than they did decades ago.23 9 Other crops globally consumed today, such as fruits 240 and vegetables, are likely grown from patented varieties or cultivars. As a result, agricultural biodiversity has diminished due to the introduction and consolidation of genetically modified, patented varieties, and it is highly likely the cannabis industry could see a similar fate.24 1

Cannabis biodiversity will be threatened if there are fewer available cultivars and, thus, fewer strain options.2 42 Fewer available strains could also lead to limited consumer experiences and patient treatment options. This notion, coupled with already limited clinical and scientific research, could significantly throttle advances in medical marijuana availability and use.2 43 The corporatization of the industry, thanks to patent law, could see smaller growers and businesses merging into giant conglomerates, with 2 the profits being held in the hands of a very few. 4 In short, the "winners" of the cannabis patent wars will dominate the industry post-prohibition.2 45

Some argue that expanding strain patents could have the opposite effect and allow researchers and physicians to "correctly identifty], dos[e], and perhaps even personalize prescriptions for particular strains in the future" to treat specific ailments.24 6 Patents are a hallmark of innovation, and with wide access to more and better cannabis strains, there could be innovation advances in the industry as a whole.2 47 However, the reality is that cannabis patents are likely to be held by large corporations, given what we have seen before with the United States government and the FDA's involvement.24 8

Both medical marijuana patients and recreational marijuana users are strain-driven. While the current cannabis landscape is rich with hundreds of different varieties, strain patents could lead to a "locked genetic landscape where innovation becomes rare and costly."2 4 9 Further, a monopoly on the local strains of one country could have disastrous effects on that country's biodiversity and its rights to that biodiversity.2 50

#### Monopolies kill market growth and disincentivize innovation.

Gunelius 20 “How Big Business, Monopolies and Stacked Licenses Impact the Marijuana Industry,” February 7, 2020, Originally published 3/4/17, Susan Gunelius is President & CEO of KeySplash Creative, Inc. <https://www.cannabiz.media/blog/how-big-business-monopolies-and-stacked-licenses-impact-the-marijuana-industry> SM

However, the continued growth and development of big businesses with deep pockets in the cannabis industry has many people worried that the result of continued mergers and acquisitions will be monopolies, lower quality products, and a shift of revenues away from mom and pop businesses in local communities to out-of-state (or out of country) corporations.

The Start of Monopolies and Oligopolies in the Cannabis Industry

Monopolies and oligopolies are already developing in the cannabis industry — not just in terms of big businesses usurping smaller businesses but also in terms of state regulations that allow vertical integration, which leads to markets dominated by one or a few players that control the cultivation, processing, and sale of cannabis products.

To clarify, all but two states (Louisiana and Washington) with active medical or recreational cannabis programs allow or require vertical integration of the cannabis supply chain. Cannabiz Media defines the related cannabis license structures as follows:

Fully stacked licenses: A single licensed business can or is required to handle all operations from seed to sale in a fully vertically integrated structure.

Partially stacked licenses: A single licensed business can or is required to handle more than one operation but not all operations from seed to sale.

Unstacked licenses: Different businesses handle different operations across the supply chain from seed to sale.

For example, in Minnesota, the state’s medical marijuana program requires full vertical integration with only one type of license – the Medical Cannabis Manufacturer license. Currently, only two of these licenses are allowed in the state to grow, process, and sell (at four dispensaries each) cannabis.

Other states, like Colorado and Oregon, have ceased to award additional licenses to some cannabis businesses in the past thereby creating oligopolies. In California, oligopolies are forming in a different way. Regulations passed leading up to opening the state’s adult-use market in 2018 allowed large businesses to exploit a loophole and obtain as many cultivator licenses as they could afford.

Across the country, smaller cannabis businesses are struggling to compete with other bigger cannabis companies. In Maryland, large out-of-state companies (including several well-known cannabis companies that are publicly traded on the Canadian Securities Exchange) have been quietly taking control of multiple marijuana dispensaries through management agreements or acquisition plans that circumvent the state’s regulations limiting ownership to one dispensary.

The concern about monopolies and oligopolies in the cannabis industry was in the Florida news extensively throughout 2019 when a Florida court ruled that the state’s required vertical integration was unconstitutional.

The Future of Marijuana and Big Business

Bottom line, whenever every business that wants to be in an industry cannot enter the market, competition will not flourish. The result is the same whether businesses are shut out due to state regulations or because big businesses have deeper pockets and force smaller players to leave. Either way, the result is the same. Fewer players equals less competition which usually leads to higher prices and limited market growth.

As Sean Williams of The Motley Fool warned back in 2017, “The culprit for the substantial drop in marijuana prices appears to be big businesses infiltrating the industry and flooding the market with product. As with any industry, if big business can push the little guy out, they’ll have considerably more liberties down the road to raise their prices back up and capture a juicier margin, along with greater market share.”

Only free competition ensures fair prices and market growth over the long-term as well as ongoing innovation and product accessibility.

**Biopharmaceutical innovation is key to prevent future pandemics and bioterror.**

**Marjanovic and Feijao 20** [(Sonja Marjanovic, Ph.D., Judge Business School, University of Cambridge. Carolina Feijao, Ph.D. in biochemistry, University of Cambridge; M.Sc. in quantitative biology, Imperial College London; B.Sc. in biology, University of Lisbon.) "How to Best Enable Pharma Innovation Beyond the COVID-19 Crisis," RAND Corporation, 05-2020, https://www.rand.org/pubs/perspectives/PEA407-1.html] TDI

As key actors in the healthcare innovation landscape, pharmaceutical and life sciences 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 context.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 competition 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 pharmaceutical 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 sector. 2 It is therefore unsurprising that we are seeing industry-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 compounds to assess their utility in the fight against COVID19; screening existing compound libraries in-house or with partners to see if they can be repurposed; accelerating trials 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 accelerate 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 relatively few companies that are ‘commercial’ winners. Those who might gain substantial revenues will be under pressure 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 combination product that is being tested for therapeutic potential 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, bioterrorism 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 immediate term. The pharmaceutical industry has responded to previous public health emergencies associated with infectious 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 contributions 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 innovation conditions.

**Bioterror causes extinction.**

**Millett & Snyder-Beattie ‘17** [(Piers Millett: Ph.D., Senior Research Fellow, Future of Humanity Institute, University of Oxford. Andrew Snyder-Beattie: M.S., Director of Research, Future of Humanity Institute, University of Oxford.) " Existential Risk and Cost-Effective Biosecurity," Health Security, 15(4), 08-01-2017, https://www.liebertpub.com/doi/full/10.1089/hs.2017.0028] TDI

In the decades to come, advanced bioweapons could **threaten human existence**. Although the **probability** of human extinction from bioweapons **may** be low, the **expected value** of **reducing** the risk could **still** be **large**, since such risks jeopardize the existence of **all future generations**. We provide an overview of biotechnological extinction risk, make some rough initial estimates for how severe the risks might be, and compare the cost-effectiveness of reducing these extinction-level risks with existing biosecurity work. We find that reducing human extinction risk can be more cost-effective than reducing smaller-scale risks, even when using conservative estimates. This suggests that the risks are not low enough to ignore and that more ought to be done to prevent the worst-case scenarios. How worthwhile is it spending resources to study and mitigate the chance of human extinction from biological risks? The risks of such a catastrophe are presumably low, so a skeptic might argue that addressing such risks would be a waste of scarce resources. In this article, we investigate this position using a cost-effectiveness approach and ultimately conclude that the expected value of reducing these risks is large, especially since such risks jeopardize the existence of all future human lives. **Historically, disease events have been responsible for the greatest death tolls** on humanity. The 1918 flu was responsible for more than 50 million deaths,1 while smallpox killed perhaps 10 times that many in the 20th century alone.2 The Black Death was responsible for killing over 25% of the European population,3 while other pandemics, such as the plague of Justinian, are thought to have killed 25 million in the 6th century—constituting over 10% of the world's population at the time.4 It is an open question whether a future pandemic could result in outright human extinction or the irreversible collapse of civilization. A skeptic would have many good reasons to think that existential risk from disease is unlikely. Such a disease would need to spread worldwide to **remote populations**, overcome **rare genetic resistances**, and **evade detection**, cures, and **countermeasures**. Even evolution itself may work in humanity's favor: **Virulence and transmission is often a trade-off**, and so **evolutionary pressures** could push against maximally lethal wild-type pathogens.5,6 While these arguments point to a very small risk of human extinction, they **do not rule** the possibility **out** entirely. Although rare, there are recorded instances of **species going extinct due to disease**—primarily in amphibians, but also in 1 mammalian species of rat on Christmas Island.7,8 There are also **historical examples of large human populations being almost entirely wiped out** by disease, especially when multiple diseases were simultaneously introduced into a population without immunity. The most striking examples of total population collapse include **native American tribes** exposed to European diseases, such as the Massachusett (86% loss of population), Quiripi-Unquachog (95% loss of population), and the Western Abenaki (which suffered a staggering 98% loss of population).9 In the modern context, no single disease currently exists that combines the worst-case levels of transmissibility, lethality, resistance to countermeasures, and global reach. But **many diseases are proof** of principle that **each worst-case attribute can be realized independently**. For example, some diseases exhibit nearly a 100% case fatality ratio in the absence of treatment, such as rabies or septicemic plague. Other diseases have a track record of spreading to virtually every human community worldwide, such as the 1918 flu,10 and seroprevalence studies indicate that other pathogens, such as chickenpox and HSV-1, can successfully reach over 95% of a population.11,12 Under optimal virulence theory, **natural evolution** would be an **unlikely** source for pathogens with the **highest possible levels of transmissibility, virulence, and global reach**. But **advances in biotech**nology might allow the creation of diseases that **combine such traits**. Recent controversy has **already emerged** over a number of **scientific experiments** that resulted in viruses with enhanced **transmissibility**, **lethality**, and/or the ability to overcome **therapeutics**.13-17 Other experiments demonstrated that mousepox could be modified to have a 100% case fatality rate and render a vaccine ineffective.18 In addition to transmissibility and lethality, studies have shown that other disease traits, such as incubation time, environmental survival, and available vectors, could be modified as well.19-21 Although these experiments had scientific merit and were not conducted with malicious intent, their implications are still worrying. This is especially true given that there is also a **long historical track record** of**state-run bioweapon research** applying cutting-edge science and technology to design agents not previously seen in nature. The Soviet bioweapons program developed agents with traits such as enhanced virulence, resistance to therapies, greater environmental resilience, increased difficulty to diagnose or treat, and which caused unexpected disease presentations and outcomes.22 Delivery capabilities have also been subject to the cutting edge of technical development, with Canadian, US, and UK bioweapon efforts playing a critical role in developing the discipline of aerobiology.23,24 While there is no evidence of state-run bioweapons programs directly attempting to develop or deploy bioweapons that would pose an existential risk, the logic of deterrence and **m**utually **a**ssured **d**estruction could create such incentives in more unstable political environments or following a breakdown of the Biological Weapons Convention.25 The **possibility of a war** between great powers could also increase the pressure to use such weapons—during the World Wars, bioweapons were used across multiple continents, with Germany targeting animals in WWI,26 and Japan using plague to cause an epidemic in China during WWII.27

#### Lack of cannabis biodiversity is vulnerable to wipeout which decks innovation, and wrecks ag nutrition and biodiversity writ large

Hunt 20 [Dale, PhD Biology from UC San Diego, JD in Intellectual Property Law from UC Berkeley, Founder and Senior Attorney at Planet & Planet Law Firm, Founder and CEO at Breeder’s Best] “Biodiversity in Commercial Cannabis: Why It Matters,” Cannabis Business Times, August 7, 2020, <https://www.cannabisbusinesstimes.com/article/biodiversity-in-commercial-cannabis-why-it-matters/> [brackets in original] TG

The limitation of a monoculture is that it’s a total commitment to one strategy. If a new virus or other pathogen reaches a monoculture crop that is susceptible to it, the entire crop is uniformly susceptible and can be wiped out. We are all living through the emergence of a new virus, so we know the outbreak of a new pathogen is something that really can happen. If our human population were a genetic monoculture highly susceptible to the new coronavirus, everyone would need to be in an intensive care unit. Fortunately, for every person who needs advanced treatment, there are many more who show no symptoms when infected; and others are somewhere between these extremes. This dynamic can also exist with crops—a genetic monoculture that is susceptible will be affected uniformly by a new pathogen, while a genetically diverse farm will have a more robust and varied response.

Historic examples of this problem include the Irish Potato Famine in the 19th Century, the “Panama disease” wipeout of the Gros Michel banana variety in the 1950s, and the southern corn leaf blight of 1970. In these cases, monocultured crops had no resistance to new pathogens, which spread widely and caused massive crop failures.

Another downfall of repeated monoculturing is its effect on the land and nearby habitat. Each crop has its own interaction with the soil and the organisms around it. In a sense, each crop takes something from the soil and some crops put something back into it. If, year after year, all the “taking” is of the same kind, then whatever is continuously taken can be depleted. This is a common problem of nitrogen-depleting crops that traditionally were rotated, in a given space, with nitrogen-replacing crops the following season. Nitrogen is essential for things like photosynthesis, protein production, and other vital aspects of plant health and productivity. In the absence of effective crop rotation, the soil can become critically low in nitrogen and unsuitable for farming.

In addition, the monoculture can affect nearby populations of insects, wildlife, soil microbes, etc. Some will thrive from positive interactions with the monoculture—to the point of a population explosion or other form of overgrowth—while others will dwindle because they do not interact well with that particular crop. The net effect is that a prolonged monoculture almost inevitably distorts the environment around it. For example, an analysis of more than 450 data sets and more than 50 insect species demonstrated that “variance in plant nutritive traits substantially reduces [insect] performance” and “increased [diversity] within agricultural crops could contribute to the sustainable control of insect pests in agroecosystems,” according to William C. Wetzel, lead author of the paper “Variability in plant nutrients reduces insect herbivore performance” published in the journal Nature in 2016.

#### Biodiversity loss causes extinction – also multiplies threats of escalation

Torres 16 [Phil Biologist, conservationist, science advocate & educator. 2 years based in Amazon rainforest, now exploring science around the world. “[Biodiversity Loss: An Existential Risk Comparable to Climate Change](http://futureoflife.org/2016/05/20/biodiversity-loss/)” <http://futureoflife.org/2016/05/20/biodiversity-loss/>]

According to the Bulletin of Atomic Scientists, the two greatest existential threats to human civilization stem from climate change and nuclear weapons. Both pose clear and present dangers to the perpetuation of our species, and the increasingly dire climate situation and nuclear arsenal modernizations in the United States and Russia were the most significant reasons why the Bulletin [decided](http://thebulletin.org/press-release/doomsday-clock-hands-remain-unchanged-despite-iran-deal-and-paris-talks9122) to keep the Doomsday Clock set at three minutes before midnight earlier this year.

But there is another existential threat that the Bulletin overlooked in its Doomsday Clock announcement: biodiversity loss. This phenomenon is often identified as one of the many consequences of climate change, and this is of course correct. But biodiversity loss is also a contributing factor behind climate change. For example, deforestation in the Amazon rainforest and elsewhere reduces the amount of carbon dioxide removed from the atmosphere by plants, a natural process that mitigates the effects of climate change. So the causal relation between climate change and biodiversity loss is bidirectional.

Furthermore, there are myriad phenomena that are driving biodiversity loss in addition to climate change. Other causes include ecosystem fragmentation, invasive species, pollution, oxygen depletion caused by fertilizers running off into ponds and streams, overfishing, human overpopulation, and overconsumption. All of these phenomena have a direct impact on the health of the biosphere, and all would conceivably persist even if the problem of climate change were somehow immediately solved.

Such considerations warrant decoupling biodiversity loss from climate change, because the former has been consistently subsumed by the latter as a mere effect. Biodiversity loss is a distinct environmental crisis with its own unique syndrome of causes, consequences, and solutions—such as restoring habitats, creating protected areas (“biodiversity parks”), and practicing sustainable agriculture.

Deforestation of the Amazon rainforest decreases natural mitigation of CO2 and destroys the habitats of many endangered species.

The sixth extinction.

The repercussions of biodiversity loss are potentially as severe as those anticipated from climate change, or even a nuclear conflict. For example, according to a 2015 [study](http://www.ncbi.nlm.nih.gov/pubmed/26601195) published in Science Advances, the best available evidence reveals “an exceptionally rapid loss of biodiversity over the last few centuries, indicating that a sixth mass extinction is already under way.” This conclusion holds, even on the most optimistic assumptions about the background rate of species losses and the current rate of vertebrate extinctions. The group classified as “vertebrates” includes mammals, birds, reptiles, fish, and all other creatures with a backbone.

The article argues that, using its conservative figures, the average loss of vertebrate species was 100 times higher in the past century relative to the background rate of extinction. (Other scientists have suggested that the current extinction rate could be as much as 10,000 times higher than normal.) As the authors write, “The evidence is incontrovertible that recent extinction rates are unprecedented in human history and highly unusual in Earth’s history.” Perhaps the term “Big Six” should enter the popular lexicon—to add the current extinction to the previous “Big Five,” the last of which wiped out the dinosaurs 66 million years ago.

But the concept of biodiversity encompasses more than just the total number of species on the planet. It also refers to the size of different populations of species. With respect to this phenomenon, multiple studies have confirmed that wild populations around the world are dwindling and disappearing at an alarming rate. For example, the 2010 [Global Biodiversity Outlook](https://www.cbd.int/gbo3) report found that the population of wild vertebrates living in the tropics dropped by 59 percent between 1970 and 2006.

The report also found that the population of farmland birds in Europe has dropped by 50 percent since 1980; bird populations in the grasslands of North America declined by almost 40 percent between 1968 and 2003; and the population of birds in North American arid lands has fallen by almost 30 percent since the 1960s. Similarly, 42 percent of all amphibian species (a type of vertebrate that is sometimes called an “ecological indicator”) are undergoing population declines, and 23 percent of all plant species “are estimated to be threatened with extinction.” [Other studies](http://commondreams.org/views/2016/02/10/biodiversity-loss-and-doomsday-clock-invisible-disaster-almost-no-one-talking-about) have found that some 20 percent of all reptile species, 48 percent of the world’s primates, and 50 percent of freshwater turtles are threatened. Underwater, about 10 percent of all coral reefs are now dead, and another 60 percent are in danger of dying.

Consistent with these data, the 2014 [Living Planet Report](http://bit.ly/1ssxx5m) shows that the global population of wild vertebrates dropped by 52 percent in only four decades—from 1970 to 2010. While biologists often avoid projecting historical trends into the future because of the complexity of ecological systems, it’s tempting to extrapolate this figure to, say, the year 2050, which is four decades from 2010. As it happens, a 2006[study](http://science.sciencemag.org/content/314/5800/787) published in Science does precisely this: It projects past trends of marine biodiversity loss into the 21st century, concluding that, unless significant changes are made to patterns of human activity, there will be virtually no more wild-caught seafood by 2048.

48% of the world’s primates are threatened with extinction.

Catastrophic consequences for civilization.

The consequences of this rapid pruning of the evolutionary tree of life extend beyond the obvious. There could be surprising effects of biodiversity loss that scientists are unable to fully anticipate in advance. For example, prior research has shown that localized ecosystems can undergo abrupt and irreversible shifts when they reach a tipping point. According to a 2012 [paper](http://www.nature.com/nature/journal/v486/n7401/full/nature11018.html) published in Nature, there are reasons for thinking that we may be approaching a tipping point of this sort in the global ecosystem, beyond which the consequences could be catastrophic for civilization.

As the authors write, a planetary-scale transition could precipitate “substantial losses of ecosystem services required to sustain the human population.” An ecosystem service is any ecological process that benefits humanity, such as food production and crop pollination. If the global ecosystem were to cross a tipping point and substantial ecosystem services were lost, the results could be “widespread social unrest, economic instability, and loss of human life.” According to Missouri Botanical Garden ecologist Adam Smith, one of the paper’s co-authors, this could occur in a matter of decades—far more quickly than most of the expected consequences of climate change, yet equally destructive.

Biodiversity loss is a “threat multiplier” that, by pushing societies to the brink of collapse, will exacerbate existing conflicts and introduce entirely new struggles between state and non-state actors. Indeed, it could even fuel the rise of terrorism. (After all, climate change has been [linked](http://thebulletin.org/climate-change-and-syrian-uprising) to the emergence of ISIS in Syria, and multiple high-ranking US officials, such as former US Defense Secretary [Chuck Hagel](http://www.defense.gov/News-Article-View/Article/603441)and CIA director [John Brennan](http://www.cnsnews.com/news/article/cnsnewscom-staff/cia-director-cites-impact-climate-change-deeper-cause-global), have affirmed that climate change and terrorism are connected.)

The reality is that we are entering the sixth mass extinction in the 3.8-billion-year history of life on Earth, and the impact of this event could be felt by civilization “in as little as three human lifetimes,” as the aforementioned 2012 Nature paper notes. Furthermore, the widespread decline of biological populations could plausibly initiate a dramatic transformation of the global ecosystem on an even faster timescale: perhaps a single human lifetime.

The unavoidable conclusion is that biodiversity loss constitutes an existential threat in its own right. As such, it ought to be considered alongside climate change and nuclear weapons as one of the most significant contemporary risks to human prosperity and survival.

#### Plan – the member nations of the World Trade Organization ought to delay patent enforcement for cannabis.

Kellner 21 “Mitigating the Effects of Intellectual Property Colonialism on Budding Cannabis Markets” Hughie Kellner [Hughie Kellner came from the small farm town of Uvalde, Texas and received a bachelor’s degree in Physics from the University of Texas at Austin. Upon graduation from the Indiana University Maurer School of Law, Hughie will deploy his physics degree while prosecuting patents in the Frankfurt am Main, Germany office of Leydig, Voit, & Mayer. After Hughie’s first year at Maurer, he worked for a law firm in Thailand as a Stewart Fellow.] Indiana Journal of Global Legal Studies Vol. 28 #1 (Winter 2021) <https://www.repository.law.indiana.edu/ijgls/vol28/iss1/9/> SM

* Includes enforcement and duration

A simple solution to the problem is this: if a nation, or jurisdiction, provides for some new use of cannabis, be it medicinal, recreational, or scientific, the legislation or decision doing so should be accompanied by a law stating that patents may not be enforced as they relate to the subject matter legalized (cannabis strains, methods for ingesting/using, etc.) for some determinate amount of time, after which, patents may be acquired.105 This, at first glance, may seem to some patent attorneys to be a drastic solution as opposed to, for example, compulsory licensing106 or some other means that does not abscond with the rights demanded by international agreements. In support of my proposal, I will first explain why banning enforcement for a certain period yet keeping patent acquisition is desired, rather than banning patent acquisition altogether, as a means of highlighting the benefits that will accrue from the proposed change. Second, I will argue that imposing patent enforcement during the beginning stages of a jurisdiction’s cannabis market development is difficult to justify, as the incentives that patent enforcement are supposed to bring about already exist in great strength, leaving little for the patent sacrifice to provide.

\*\*Footnote 105: There are many aspects of this solution that this note will not address. One of those aspects is the exact duration. All that is addressed is that duration should be less than the full term of a patent for reasons advanced herein. Further, it is assumed that the exact suitable duration is better adjusted to the economic capabilities of the relevant jurisdiction than uniformly imposed. Another aspect is how the solution should be implemented. This effect, of a patent being filed but not yet enforceable for a significant portion of its term of protection, is not uncommon in the pharmaceutical world where a drug may take ten to fifteen, even eighteen years to get approved, and is only enforceable for the remainder of the twenty years since it was filed, leaving possibly two years to do. Therefore, the solution proposed may occur on its own in some medicinal cannabis markets that have long drug patent examination periods, such as Thailand, specifically. That is why the solution proposed does not come with a specified form of implementation; the same goal may be achieved through controlling varying means and portions of the patent application process.

# Solvency

#### The plan solves by reigning in monopolies without killing innovation.

Kellner 21 “Mitigating the Effects of Intellectual Property Colonialism on Budding Cannabis Markets” Hughie Kellner [Hughie Kellner came from the small farm town of Uvalde, Texas and received a bachelor’s degree in Physics from the University of Texas at Austin. Upon graduation from the Indiana University Maurer School of Law, Hughie will deploy his physics degree while prosecuting patents in the Frankfurt am Main, Germany office of Leydig, Voit, & Mayer. After Hughie’s first year at Maurer, he worked for a law firm in Thailand as a Stewart Fellow.] Indiana Journal of Global Legal Studies Vol. 28 #1 (Winter 2021) <https://www.repository.law.indiana.edu/ijgls/vol28/iss1/9/> SM

Patents may still be sought and possibly even acquired if the government so chooses. In this way, examiners will not introduce a new subject matter eligibility analysis changing the fundamental scheme of patentability. Rather, examiners will process the patent as normal, under conditions that actors within the patent system understand, reducing frustration with changing subject matter eligibility rules that are already ambiguous.107 Further, if the promulgating body determines that the window invalidating patent enforcement should be shorter than the patent term would last, there is a benefit for all actors involved. The reasoning supporting a patent enforcement ban rather than a patent acquisition ban rests on five principles.

First, the entity filing the patent will still receive monopoly protection for its invention, albeit with a shorter window than usual. Thus, the incentive to file a patent and disclose the invention to the public still exists, and in a lucrative market such as that for cannabis, a smaller window of monopoly can be compensated by the higher value of that window, which could bring the perceived benefit from a patent back to usual levels.108

Second, if the invention is conceived during the enforcement ban, patent acquisition would allow inventions to be processed just as patents. By allowing patent processing before and after the ban, the legal regime will reduce administrative costs and increase legal certainty.109 By comparison, a system where patent acquisition is prohibited until after the ban would only result in a complex scheme whereby prior use, prior art, and other novelty requirements are handled.

Third, if actors are utilizing technology under such currently unenforceable but soon-to-be enforceable patents, they will have clear notice when they must cease such infringing action, and either close their doors or develop a compliant way of doing business. Thus, actors in the market can establish themselves and then innovate their own means of carrying out business or license it from those who do. This is the exact action patents are meant to incentivize, innovating new solutions to problems, even if the problem here is merely a legal one.110

Fourth, after the cannabis market sustains established actors, the cannabis market may find that the benefits of promoting more actors in the market111—the purpose of barring patent enforcement—are once again outweighed by the value of the incentives that the patent system provides.112 Setting a time period for when patent enforcement will return ensures that the market is not devoid of the incentives once the initial “green rush”113 wears off.

Fifth, this solution bans foreign monopolies, not foreign participation. This solution does not inhibit foreign companies from moving their business to local markets if the legal regime allows.114 With the ability to move their intellectual property portfolio, foreign companies can still acquire a trademark and operate their business plan, benefitting from the experience acquired in the prior years of operation. Foreign participants, just like domestic participants, cannot monopolize their innovations, and are thus placed on an equal footing.