2024

NATIONAL DEBATE CLINIC

NEGATIVE BRIEFS

THE CASE AGAINST THE UNITED STATES FEDERAL GOVERNMENT SIGNIFICANTLY STRENGTHENING THE DOMESTIC PROTECTION OF INTELLECTUAL PROPERTY RIGHTS IN COPYRIGHTS, PATENTS, AND/OR TRADEMARKS

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CASE RESPONSE BRIEFS ON THE INTELLECTUAL PROPERTY TOPIC

PATENTS DISCOURAGE INNOVATION

1. PATENTS DISCOURAGE RESEARCH.

Anthony Chavez, (Prof., Law, Northern Kentucky U. College of Law), DUKE ENVIRONMENTAL LAW AND POLICY FORUM, Fall 2021, p. 22.

The ability to exclude under the patent system also may discourage follow-on inventions. Despite the benefits of invention disclosure, empirical evidence nevertheless suggests that the patent system discourages subsequent innovations. Economists have found that the restrictions of the patent system may impede both follow-on research and subsequent innovations.

Janet Freilich, (Prof., Law, Fordham Law School), VIRGINIA LAW REVIEW, May 2023, p. 647.

Many other countries allow researchers, particularly at non-profit institutions, to infringe patents in the course of their research without fear of liability. The United States does not. The lack of a research exception is unpopular, but fears of its potential consequences – most notably, impeding follow-on research – are lessened because patents are broadly ignored.

2. PATENTS REDUCE COMPETITION.

Bipartisan Policy Center, ADVANCING INNOVATION, COMPETITION, AND ACCESS FOR BIOLOGICS THROUGH PATENT POLICY, Apr. 4, 2018. Retrieved May 10, 2024 from https://bipartisanpolicy.org/event/advancing-innovation-competition-and-access-for-biologics-through-patent-policy/

In some instances, however, IP policies can have unintended consequences. When patent protections are broader than the scope of the invention they protect, they may actually discourage innovation. In such cases, they may also discourage or even block others from pursuing new inventions, thereby reducing competition. This approach ultimately hurts patients by narrowing the range of potential treatments.

3. PATENTS SLOW THE UPTAKE OF NEW TECHNOLOGIES.

Daniel Farber, (Prof., Law & Technology, University of California, Berkeley), TEXAS A&M LAW REVIEW, Winter 2024, p. 316.

U.S. innovation policy has long relied on the *patent* system to provide incentives for innovators. Scholars have increasingly emphasized the limits to this approach. The *patent* system relies on the prospect of high profits from the use of a *patent* to incentivize invention, but this mechanism raises prices for users and thereby disincentivizes actual use of the invention. Thus, a side effect of using *patents* as an incentive for invention is to reduce the spread of desirable technologies. Moreover, consumers will generally pay extra only for the benefits of the invention to themselves. Thus, the *patent* incentive system does not take into account the possible benefits that a technology has for third parties, which is a critical aspect of clean energy technologies. For these reasons, the *patent* system under-incentivizes innovation in technologies that reduce carbon emissions. It also inhibits the uptake of new technologies because the *patent* monopoly results in a higher price that slows adoption.

5. PATENTS SLOW PROGRESS IN EMERGING TECHNOLOGIES.

Raphael Zingg, (Prof., Institute for Advanced Study, Waseda U.). ARTIFICIAL INTELLIGENCE AND INTELLECTUAL PROPERTY, 2021, p. 77.

Patenting the building blocks of a technology risks interfering with its progress, as each upstream patent allows its owner to request royalty payments from downstream users. There exist many documented cases amongst other emerging technologies such as semiconductors or nanotechnology where an extensively crowded set of patents has locked up or retarded innovation.

PATENTS ARE ALREADY TOO EASY TO OBTAIN

1. THERE IS A GLUT OF LOW-QUALITY PATENTS.

Charles Duan, (Prof. Law, American University Washington College of Law), BELMONT LAW REVIEW, Fall 2023, p. 101.

This glut of low-quality patents cannot simply be ignored. It strains the USPTO's limited examination resources, potentially delaying the issuance of valuable patents representing commercializable innovation. More importantly, it increases potential liability for American innovators and businesses. A company entering a market often conducts a "freedom to operate" analysis, assessing what patents cover a certain technological area. In performing that analysis, the company must wade through all the patents in the relevant area, high-quality or not. A mass of low-quality patents multiplies this search cost many times over. Indeed, these filings may impede American firms from protecting their IP rights, as they facially constitute prior art that could lengthen the patent examination process.

2. PATENTS ARE LAUGHABLY EASY TO OBTAIN.

Mark Bartholomew, (Prof., Law, U. of Buffalo School of Law), INTELLECTUAL PROPERTY AND THE BRAIN: HOW NEUROSCIENCE WILL RESHAPE LEGAL PROTECTION FOR CREATIONS OF THE MIND, 2022, p. 39-40.

Despite the letter of the law and its rigorous application in the utility patent context, courts largely fail to police design patent applications for nonobviousness, only denying protection when confronted with a single virtually identical prior design. This makes design patent laughably easy to obtain.

3. THE U.S. PATENT OFFICE IS NOTORIOUSLY LAX.

Dean Baker, (Senior Economist, Center for Economic and Policy Research), THE GREAT POLARIZATION: HOW IDEAS, POWER, AND POLICIES DRIVE INEQUALITY, 2022, p. 276.

The U.S. Patent Office is notoriously lax in the standards it applies to patents. It famously issued a patent on a peanut butter and jelly sandwich in 1997. Many companies, especially in the pharmaceutical industry, have taken advantage of this laxness to obtain frivolous patents. Even a patent of dubious validity may allow a company to extend the duration of its monopoly for several years.

4. THE U.S. ALREADY IS FLOODED WITH PATENTS.

Jessica Silbey, (Prof., Law, Boston U. School of Law), AGAINST PROGRESS: INTELLECTUAL PROPERTY AND FUNDAMENTAL VALUES IN THE INTERNET AGE, 2022, p. 8.

In the 1980 Diamond v. Chakrabarty decision, the Supreme Court held, in what would become a famous turn of phrase, that “anything under the sun that is made by man” can be patented as long as the invention meets the statutory criteria of novelty, utility, and non-obviousness. Since that decision, patentable subject matter has broadened to include algorithms, financial business methods, and living organisms such as genetically modified seeds, animals, and DNA. The U.S. Patent and Trademark Office has issued over ten million patents, with an average of approximately three hundred thousand per year during the first decade of the twenty-first century.

5. PATENTS ARE SO NUMEROUS THAT INFRINGEMENT IS INEVITABLE.

Janet Freilich, (Prof., Law, Fordham Law School), VIRGINIA LAW REV., May 2023, p. 604.

Avoiding patent infringement is infeasible because there are simply too many patents covering too many aspects of day-to-day life. In fact, the task of avoiding patent infringement is so difficult that even big companies often cannot (or choose not to) do it. Indeed, many companies are surprised by patent infringement complaints that arrive after a product has been launched.

UNDER-ENFORCEMENT OF PATENTS IS DESIRABLE

1. EVERYDAY ACTIVITIES INVOLVE PATENT INFRINGEMENT.

Janet Freilich, (Professor of Law at Fordham Law School), VIRGINIA LAW REVIEW, May 2023, p. 597.

It is quite likely that you, the reader, have infringed a patent today. There are millions of in-force U.S. patents, and many cover routine, everyday behaviors. Perhaps you used a smartphone, which are covered by thousands of patents, and liability for infringement extends not just to the phone manufacturer but also to the consumer. Or you used Wi-Fi, also covered by many patents. Alternatively, your infringing act may have been low-tech – playing on a swing or throwing a stick, for example. You were probably not aware that you took an action covered by a patent, but this is no defense to patent infringement, which is a strict liability tort and does not take intent into account.

2. THE VERY EXISTENCE OF THE PATENT SYSTEM RELIES ON UNDER-ENFORCEMENT.

Janet Freilich, (Professor of Law at Fordham Law School), VIRGINIA LAW REVIEW, May 2023, p. 597.

Fortunately, the vast majority of patents are never enforced so the likelihood that you will be sued for infringement is infinitesimally small. The patent system relies heavily on under-enforcement: if most patents were enforced, day-to-day activities would be impossible because the transaction costs required to find and license all relevant patents would be prohibitively high. Patent scholars, policy makers, and the U.S. Patent and Trademark Office ("USPTO" or "Patent Office") all recognize that many potential problems with the patent system are avoided because patentees rarely enforce patents and infringers generally ignore patents.

3. MOST PATENTS ARE SIMPLY IGNORED.

Janet Freilich, (Professor of Law at Fordham Law School), VIRGINIA LAW REVIEW, May 2023, p. 631.

Historically, the vast majority of patents have simply been ignored. For many, no one outside the team involved in filing the patent even knew the patent existed. Functionally, therefore, these patents did not matter.

Janet Freilich, (Professor of Law at Fordham Law School), VIRGINIA LAW REVIEW, May 2023, p. 602.

In practice, patents are infringed routinely and – in the vast majority of cases – without consequence. This occurs at least in part because it is cost-prohibitive both for patentees to detect infringement and enforce their rights and for potential infringers to identify relevant patents and avoid infringement. Because it is impractical to prevent infringement, patents are, by and large, simply ignored. Thus, the vast majority of patents are never licensed, never litigated, and perhaps never even read.

Janet Freilich, (Professor of Law at Fordham Law School), VIRGINIA LAW REVIEW, May 2023, p. 605.

Many companies instruct scientists and engineers not to read patents – deliberately encouraging ignorance of potential patent infringement. Companies even ignore cease and desist letters from patentees claiming infringement because many of these letters never result in litigation. A study of the effects of gene patents on follow-on innovation found that gene patents had no effect at all, although other studies in different contexts found that certain patents do impact follow-on innovation.

TECHNOLOGICAL INNOVATION IN THE U.S. IS HIGH NOW

1. THE U.S. LEADS THE WORLD IN ENTREPRENEURSHIP AND STARTUPS.

Stefan Calimanu, (Vice President, Research FDI: Investment Attraction), WHY THE U.S. LEADS THE WORLD IN ENTREPRENEURSHIP AND INNOVATION, May 17, 2023. Retrieved Apr. 21, 2024 from https://researchfdi.com/resources/articles/why-the-us-leads-the-world-in-entrepreneurship-and-innovation/

The United States has long been recognized as a global leader in entrepreneurship, innovation, and business creation. With its diverse population, strong economy, and a culture that encourages risk-taking and innovation, the US has fostered a thriving entrepreneurial ecosystem that continues to attract entrepreneurs from around the world. From Silicon Valley's tech giants to Wall Street's financial powerhouses, the USA offers a fertile ground for entrepreneurs and startups to thrive.

2. THE U.S. LEADS THE WORLD IN CUTTING-EDGE RESEARCH INSTITUTIONS.

Stefan Calimanu, (Vice President, Research FDI: Investment Attraction), WHY THE U.S. LEADS THE WORLD IN ENTREPRENEURSHIP AND INNOVATION, May 17, 2023. Retrieved Apr. 21, 2024 from https://researchfdi.com/resources/articles/why-the-us-leads-the-world-in-entrepreneurship-and-innovation/

The US has a robust infrastructure that supports the growth and development of startups. This includes world-class research institutions, such as MIT, Stanford, and Harvard, which not only produce cutting-edge research and innovation but also provide a steady stream of talented graduates who go on to become successful entrepreneurs. Collaborations between academia, industry, and government entities provide entrepreneurs with access to cutting-edge research, technological advancements, and a highly skilled workforce. This convergence of intellectual capital creates an ecosystem where ground-breaking ideas can flourish and shape the future. Additionally, the US has numerous business incubators, accelerators, and co-working spaces that provide startups with the resources and support they need to succeed.

3. SMALL BUSINESSES THRIVE IN THE U.S.

Stefan Calimanu, (Vice President, Research FDI: Investment Attraction), WHY THE U.S. LEADS THE WORLD IN ENTREPRENEURSHIP AND INNOVATION, May 17, 2023. Retrieved Apr. 21, 2024 from https://researchfdi.com/resources/articles/why-the-us-leads-the-world-in-entrepreneurship-and-innovation/

The US government plays a crucial role in fostering entrepreneurship through various policies and regulations. For example, the Small Business Administration (SBA) offers a range of programs and services to support small businesses, including loans, grants, and mentoring. Furthermore, the US has a relatively low corporate tax rate of 21%, which makes it an attractive destination for entrepreneurs looking to start a business.

4. THE REGULATORY ENVIRONMENT IN THE U.S. PROMOTES INNOVATION.

Stefan Calimanu, (Vice President, Research FDI: Investment Attraction), WHY THE U.S. LEADS THE WORLD IN ENTREPRENEURSHIP AND INNOVATION, May 17, 2023. Retrieved Apr. 21, 2024 from https://researchfdi.com/resources/articles/why-the-us-leads-the-world-in-entrepreneurship-and-innovation/

In addition, the regulatory environment in the USA promotes entrepreneurship by minimizing bureaucratic hurdles and fostering a favorable business climate. Regulations that encourage competition, protect consumers, and support innovation enable entrepreneurs to navigate the business landscape with relative ease.

5. ENTREPRENEURS CONTINUE TO FLOCK TO THE U.S.

Stefan Calimanu, (Vice President, Research FDI: Investment Attraction), WHY THE U.S. LEADS THE WORLD IN ENTREPRENEURSHIP AND INNOVATION, May 17, 2023. Retrieved Apr. 21, 2024 from https://researchfdi.com/resources/articles/why-the-us-leads-the-world-in-entrepreneurship-and-innovation/

In conclusion, the United States' entrepreneurial ecosystem is unparalleled in its dynamism and support for entrepreneurs. The country's strong economy, diverse and skilled workforce, supportive infrastructure, favorable government policies, culture of innovation, global influence, technological advancements, intellectual property protection, and entrepreneurial education all contribute to making the US the world's most dynamic entrepreneurial business ecosystem. As a result, the US continues to attract entrepreneurs from around the world and maintain its position as a global leader in entrepreneurship.

6. THE U.S. EDUCATIONAL SYSTEM PROMOTES ENTREPRENEURSHIP AND INNOVATION.

Stefan Calimanu, (Vice President, Research FDI: Investment Attraction), WHY THE U.S. LEADS THE WORLD IN ENTREPRENEURSHIP AND INNOVATION, May 17, 2023. Retrieved Apr. 21, 2024 from https://researchfdi.com/resources/articles/why-the-us-leads-the-world-in-entrepreneurship-and-innovation/

The US places a strong emphasis on entrepreneurial education, with numerous universities and institutions offering dedicated entrepreneurship programs and courses. These educational opportunities equip aspiring entrepreneurs with the knowledge, skills, and networks they need to succeed. Additionally, the US offers a wealth of networking opportunities for entrepreneurs through industry conferences, trade shows, and professional organizations.

7. INTERNATIONAL INNOVATION RANKINGS SHOW THE U.S. IS FAR AHEAD OF CHINA.

Stefan Calimanu, (Vice President, Research FDI: Investment Attraction), WHY THE U.S. LEADS THE WORLD IN ENTREPRENEURSHIP AND INNOVATION, May 17, 2023. Retrieved Apr. 21, 2024 from https://researchfdi.com/resources/articles/why-the-us-leads-the-world-in-entrepreneurship-and-innovation/

The United States has been at the forefront of technological advancements in various fields. This culture of innovation has created a fertile ground for entrepreneurs to develop new products and services that address market needs and solve global challenges.

U.S. Department of State, INNOVATION POLICY, March 21, 2024. Retrieved Apr. 21, 2024 from https://www.state.gov/innovation-policy/

The United States is the most innovative economy in the world. U.S companies drive global innovation and the development of advanced and emerging technologies.

World Intellectual Property Organization, Global Innovation Index 2023, Sept. 27, 2023. Retrieved Apr. 21, 2024 from https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2023-en-global-innovation-index-2023-16th-edition.pdf

The United States continues to lead in terms of the number of globally innovation indicators in which it ranks top globally (13 out of 80 indicators).

World Intellectual Property Organization, Global Innovation Index 2023, Sept. 27, 2023. Retrieved Apr. 21, 2024 from https://www.wipo.int/pressroom/en/articles/2023/article_0011.html

In the annual ranking, China – the only middle-income economy in the GII top 30 – ranks 12th followed by Japan in the 13th position. Israel (14th) is back among the GII top 15, gaining two steps. Finland (6th) is on an upward trend along with Denmark (9th), Sweden (2nd) and the Baltic economies (Estonia 16th, Lithuania 34th and Latvia 37th).

ACCESS TO RESEARCH INVESTMENT IN THE U.S. IS HIGH NOW

1. VENTURE CAPITAL IN THE U.S. HAS INCREASED BY 300% OVER THE PAST FEW YEARS.

Ben Popken, (Staff, Omaha World Herald), HOW U.S. VENTURE CAPITAL HAS GROWN IN THE LAST 15 YEARS, Feb. 9, 2024. Retrieved Apr. 21, 2024 from https://omaha.com/news/nation-world/business/personal-finance/how-us-venture-capital-has-grown-in-the-last-15-years/collection_546b15fd-90ae-56e4-9c62-781b95325791.html#1

Venture capital has recovered steadily from the global financial crisis. From 2008 to 2022, the number of venture capital firms increased from about 1,000 to a little over 4,000, a 300% increase. The period saw a surge in the development of "seed funding," the initial funds raised in exchange for shares in the company, and it became an investment class in its own right. This expanded access in investing in the earliest stage of companies to a broader array of investors beyond traditional friends, family, and angel investors, catalyzing new growth and opportunities. The industry saw the proliferation of new funds specializing in specific areas, such as software, biotech, and the environment. Venture capital firms also began creating multiple funds with different investment strategies, diversifying their portfolio and increasing revenue from management fees.

2. VENTURE CAPITAL HAS INCREASED STEADILY OVER EACH OF THE PAST FIVE YEARS.

Ben Popken, (Staff, Omaha World Herald), HOW U.S. VENTURE CAPITAL HAS GROWN IN THE LAST 15 YEARS, Feb. 9, 2024. Retrieved Apr. 21, 2024 from https://omaha.com/news/nation-world/business/personal-finance/how-us-venture-capital-has-grown-in-the-last-15-years/collection_546b15fd-90ae-56e4-9c62-781b95325791.html#1

After five years of steady increases, in 2022, the average venture capital fund size, the amount of capital raised for investing, suddenly soared from $150 million to over $200 million. This growth was propelled by several factors. One was the entrance of mega funds, or funds with $500 million or more in capital, backed by institutional and sovereign investors seeking bigger and more diverse investing opportunities.

3. PROJECTIONS SHOW VENTURE CAPITAL WILL CONTINUE TO INCREASE.

Mordor Intelligence Briefing, UNITED STATES VENTURE CAPITAL MARKET SIZE & SHARE ANALYSIS, Dec. 6, 2023. Retrieved Apr. 21, 2024 from https://www.mordorintelligence.com/industry-reports/united-states-venture-capital-market

The United States Venture Capital Market size in terms of assets under management value is expected to grow from USD 1.30 trillion in 2024 to USD 1.94 trillion by 2029, at a CAGR of 8.25% during the forecast period (2024-2029).Venture capital generally comes from well-off investors, investment banks, and other financial institutions.

4. THE VENTURE CAPITAL AVAILABLE IN THE U.S. IS MORE THAN HALF OF THE WORLD TOTAL.

Stefan Calimanu, (Vice President, Research FDI: Investment Attraction), WHY THE U.S. LEADS THE WORLD IN ENTREPRENEURSHIP AND INNOVATION, May 17, 2023. Retrieved Apr. 21, 2024 from https://researchfdi.com/resources/articles/why-the-us-leads-the-world-in-entrepreneurship-and-innovation/

Access to capital is essential for entrepreneurs to transform their ideas into viable businesses. The USA offers a robust financial infrastructure, including venture capital firms, angel investors, and well-developed capital markets. Entrepreneurs in the USA benefit from a diverse range of funding options, enabling them to secure the necessary capital to start and scale their ventures. In 2021, US-based startups raised a total of $345 billion in venture capital funding, which is more than half of the global venture capital investments.

THE U.S. ECONOMY IS STRONG NOW

1. THE U.S. GROSS DOMESTIC PRODUCT IS LARGEST IN THE WORLD.

Stefan Calimanu, (Vice President, Research FDI: Investment Attraction), WHY THE U.S. LEADS THE WORLD IN ENTREPRENEURSHIP AND INNOVATION, May 17, 2023. Retrieved Apr. 21, 2024 from https://researchfdi.com/resources/articles/why-the-us-leads-the-world-in-entrepreneurship-and-innovation/

The US boasts the world's largest economy, with a Gross Domestic Product (GDP) of over $25.5 trillion USD in 2022. This economic strength provides a solid foundation for entrepreneurs to build and scale their businesses.

2. THE U.S. ECONOMY CONTINUES TO GROW FASTER THAN ANY OTHER COUNTRY.

Neil Irwin, (Staff, Axios News), U.S. WINNING WORLD ECONOMIC WAR, Jan. 31, 2024. Retrieved July 23, 2024 from https://www.axios.com/2024/01/31/us-economy-2024-gdp-g7-nations

The United States economy grew faster than any other large advanced economy last year — by a wide margin — and is on track to do so again in 2024. Why it matters: America's outperformance is rooted in its distinctive structural strengths, policy choices, and some luck. It reflects a fundamental resilience in the world's largest economy that is easy to overlook amid the nation's problems. By the numbers: U.S. GDP looks to have grown 2.5% in 2023, according to the IMF's hot-off-the-presses World Economic Outlook, the highest among the G7 economies (Japan was second at 1.9%).

3. U.S. PRODUCTIVITY GROWTH CONTINUES TO LEAD THE WORLD.

Kristalina Georgieva, (Dir., IMF Communications Department), UPDATE ON THE U.S. ECONOMY, June 28, 2024. Retrieved July 23, 2024 from https://www.imf.org/en/News/Articles/2024/06/28/tr062824-usa-transcript-of-art-iv-press-briefing

The U.S. is the only G-20 economy whose GDP level now exceeds the pre-Pandemic level. This is good for the U.S., and it is good for the global economy. We expect growth to be a healthy 2 percent on a fourth-quarter over fourth-quarter basis and sustain a similar pace over the medium-term. Inflation has declined in response to the Federal Reserve's actions and we see inflation on a path towards the 2 percent target. The Fed's efforts were aided by important gains in labor supply including of women and strong productivity gains. This is what makes U.S. economy so remarkable vis-a-vis its peers.

4. CHINA'S ECONOMY IS IN DECLINE.

Evie Steele, (Staff, Voice of America), IMF PREDICTS CHINA ECONOMY SLOWING OVER NEXT FOUR YEARS, Feb. 2, 2024. Retrieved July 23, 2024 from https://www.voanews.com/a/imf-predicts-china-economy-slowing-over-next-four-years/7468960.html

The International Monetary Fund says China's economic decline is likely to continue over the next four years as the world's second largest economy deals with a range of challenges from a rapidly aging population, higher unemployment and a property crisis.

Joel Mathis, (Staff, The Week), WHY CAN'T CHINA TURN ITS ECONOMY AROUND?, July 18, 2024. Retrieved July 23, 2024 from https://theweek.com/business/economy/china-economy-struggle-market-third-plenum

China's economy is stumbling, again. Slower-than-expected second-quarter growth statistics are putting "further pressure on the Communist Party" as its leaders gathered this week to plan the way forward, said The New York Times. Those leaders have tried to offset the country's longstanding real estate slump with a boost to export-driven manufacturing, but that has led to a "glut of goods, from chemicals to cars" and a backlash — in the form of tariffs — from countries whose leaders "fear the flood of Chinese goods will overwhelm local industries." The result? China is "limping along precariously," said one analyst.

OPENNESS AND SHARING IS SUPERIOR TO PATENT PROTECTION

1. WITHOUT PATENTS, RESEARCHERS COULD MORE FREELY EXCHANGE IDEAS.

Dean Baker, (Senior Economist, Center for Economic and Policy Research), WANT TO REVERSE INEQUALITY? CHANGE INTELLECTUAL PROPERTY RULES, Feb. 8, 2021. Retrieved Mar. 8, 2024 from https://www.thenation.com/article/economy/inequality-patents-taxes-copyright/

We would be far better served if American researchers freely exchanged their ideas, allowing the technology to advance as quickly as possible. Think of how much better off the entire world would have been if all the research on coronavirus vaccines had been fully open, so that anyone with manufacturing capacity could have been producing the vaccines in large quantities as soon as they went into Phase 3 testing. That would have allowed the manufacture of large stockpiles as soon as the vaccines had been approved for use. It appears that the vaccines developed by Chinese companies are not as effective as the ones by Moderna and Pfizer—we certainly need more transparency from the Chinese on their trial results—but in the absence of sufficient supplies from Moderna and Pfizer, they are far better than nothing. We share a common, global goal in taming the pandemic as quickly as possible, so we should be using every tool available to accomplish it.

2. MAJOR COMPANIES ARE NOW ABANDONING PATENT PROTECTION.

Samuel Cayton, (JD Candidate), SEATTLE JOURNAL OF ENVIRONMENTAL LAW, 2020, p. 232.

Some companies have gone the extra mile by taking the initiative to open their own patents to the general public. For example, in 2014, Tesla Motors's founder and chairman Elon Musk announced on behalf of his company that he will be releasing Tesla's patents to anyone who wants to use them. As a legal effect, Tesla made an irrevocable pledge to not initiate lawsuits against anyone who uses its patented technology for electric car development, which covers its patents for battery charging systems, electric motors, thermal management, and other inventions.

Toshiko Takenaka, (Prof., Law, U. Washington School of Law), MICHIGAN TECHNOLOGY LAW REVIEW, Fall 2019, p. 97.

Even Microsoft, once the greatest enemy of the OSS [open source software] community, has called a truce by adopting the shared innovation initiative. Despite dramatic changes in the innovation landscape, the rationale for the patent system is still based on several assumptions rooted in the eighteenth century when the system was developed. Producer firms were the key players in the innovation process. These firms did not invent without any incentive and patents were used to exclude others and profits were made by selling products or services with supracompetitive prices. These firms dealt with products in the discrete technologies, i.e., technological sectors dealing with products that consist of few components and are covered by patents held by one patent owner who engages in the closed-innovation model. Patent scholars modernized this incentive theory as the prospect theory in an effort to give pioneer inventors the ability to control follow-on innovation through a broader scope of exclusivity on pioneer inventions. Neither the traditional nor modern incentive theories apply to many producer firms dealing in complex technologies. These firms inclusively use their patents to share technologies with others. Today, many inventors often prefer the freedom to operate over supracompetitive profit margins.

3. CLOSED INNOVATION AND PATENT PROTECTION WAS A 20TH CENTURY THING.

Toshiko Takenaka, (Prof., Law, U. Washington School of Law), MICHIGAN TECHNOLOGY LAW REVIEW, Fall 2019, p. 104.

In the early twentieth century, closed innovation prevailed as the development model. Closed innovation embraces exclusive control over all steps in the process of delivering an invention to market because all steps are performed within each commercial producer firm that vertically integrates upstream through downstream stages of the value chain. In the closed innovation model, a producers' R&D investment is recouped through the sale of products and services with supracompetitive prices that are enabled by the patent monopoly.

Toshiko Takenaka, (Prof., Law, U. Washington School of Law), MICHIGAN TECHNOLOGY LAW REVIEW, Fall 2019, p. 143.

Unfortunately, the current patent system continues to be based on outmoded policies developed in the pre-Internet era that focused on producer firms that practice the closed innovation model with discrete technologies. Historically, such firms used patents to exclude others and created monopoly deadweight losses, which hinder innovation. Today, patents do not provide the power to control markets, and many patent policies are outdated.

4. SHARING – NOT PATENT PROTECTION – IS THE WAY INNOVATION HAPPENS NOW.

Toshiko Takenaka, (Prof., Law, U. Washington School of Law), MICHIGAN TECHNOLOGY LAW REVIEW, Fall 2019, p. 100.

Industry 4.0 has had a significant impact not only on how products are produced, but also on how things are invented and innovated. In particular, the concept has changed the way in which companies deploy R&D resources in innovation. Industry 4.0 connects both things and people through advanced high speed Internet; it enables different types of innovators to share resources for research, manufacturing, and conducting business. In particular, both small and medium-sized enterprises ("SMEs") and individual innovators are able to share, exchange, and rent expensive R&D resources with the help of the Internet-supported technologies without the transfer of ownership. These practices are often referred to as the "Sharing Economy." Sharing has become increasingly popular and is viewed positively by economists because it increases business efficiencies by reducing transaction costs and maximizes the utilization of goods and services.

5. THE "COPYLEFT" SHARING PHILOSOPHY HAS NOW SPREAD TO PATENTS.

Toshiko Takenaka, (Prof., Law, U. Washington School of Law), MICHIGAN TECHNOLOGY LAW REVIEW, Fall 2019, p. 112.

Some producer firms – SMEs [small and medium-sized enterprises] that were founded by individual programmers, in particular – disclose their innovations free of patent exclusivity because they aspire to the same idealistic goal as the open source philosophy: spreading free software and promoting cooperation in the OSS community through Copyleft software development. It often makes sense for SMEs to join the OSS community in order to take advantage of the collective innovation power that would otherwise be unattainable with their limited resources.

6. CUTTING EDGE RESEARCHERS NOW SEE PATENT PROTECTION AS HARMFUL.

Toshiko Takenaka, (Prof., Law, U. Washington School of Law), MICHIGAN TECHNOLOGY LAW REVIEW, Fall 2019, p. 132.

For many commercial firms that engage in open innovation, in particular firms in complex technologies, the exclusive side of patent rights is not only useless but is also harmful to their reputation and to their work with innovators who subscribe to the open source philosophy. Thus, many of them voluntarily renounce their exclusive patent rights through open patent licenses and pledges.

INTELLECTUAL PROPERTY PROTECTION PROMOTES INCOME INEQUALITY

1. IP PROTECTION MEANS THE RICH GET RICHER.

Dean Baker, (Senior Economist, Center for Economic and Policy Research), THE GREAT POLARIZATION: HOW IDEAS, POWER, AND POLICIES DRIVE INEQUALITY, 2022, p. 288.

Patent and copyright protections not only involve large sums of money; they also redistribute income upward. At the most basic level, there are not many low-income households that receive royalties from patents or copyrights. These forms of protection provide the basis for the fortunes of many of the richest people in the country.

Dean Baker, (Senior Economist, Center for Economic and Policy Research), WANT TO REVERSE INEQUALITY? CHANGE INTELLECTUAL PROPERTY RULES, Feb. 8, 2021. Retrieved Mar. 8, 2024 from https://www.thenation.com/article/economy/inequality-patents-taxes-copyright/

While the Reagan, George W. Bush, and Trump tax cuts all gave more money to the rich, policy changes in other areas, especially intellectual property have done far more to redistribute income upward. In the past four decades, a wide array of changes—under both Democratic and Republican presidents—made patent and copyright protection both longer and stronger.

2. STRENGTHENING PATENT PROTECTION WILL INCREASE INCOME INEQUALITY.

Dean Baker, (Senior Economist, Center for Economic and Policy Research), THE GREAT POLARIZATION: HOW IDEAS, POWER, AND POLICIES DRIVE INEQUALITY, 2022, p. 292.

We have adopted a set of rules centered on patent and copyright monopolies that have the effect of significantly increasing inequality. We could weaken these rules or, alternatively, make use of different mechanisms to provide incentives for innovation and creative work. In deciding whether to strengthen or weaken patents, copyrights, and related protections, we need to consider whether they are the most efficient mechanisms for supporting innovation and creative work. As noted here, there is good reason for believing that often they are not.

3. IP PROTECTION COSTS THE U.S. PUBLIC MORE THAN A TRILLION DOLLARS ANNUALLY.

Dean Baker, (Senior Economist, Center for Economic and Policy Research), WANT TO REVERSE INEQUALITY? CHANGE INTELLECTUAL PROPERTY RULES, Feb. 8, 2021. Retrieved Mar. 8, 2024 from https://www.thenation.com/article/economy/inequality-patents-taxes-copyright/

The upward redistribution of wealth arising from intellectual property (IP) is typically disguised in public debates as being the result of “technology.” But blaming technology attributes it to an impersonal force. When we point out that it is due to intellectual property, we make it clear that inequality is a policy choice. To take my favorite example, without Microsoft’s government-granted patent and copyright monopolies, Bill Gates would probably still be working for a living. Many other billionaires and millionaires would be far less wealthy if we had different rules for intellectual property. By my calculations, the amount of money transferred from the rest of us to those in a position to benefit from IP comes to more than $1 trillion annually. This transfer comes in the form of higher prices for prescription drugs, medical equipment, software, and many other products. This amount is almost half the size of all before-tax corporate profits, and roughly one-third larger than the current military budget. In other words, it is real money.

4. IP PROTECTION IS USED TO EXCLUDE THOSE IN NEED.

Peter Yu, (Prof., Law, Texas A&M U.), COLUMBIA LAW REVIEW, June 2023, 1458.

There are three general critiques of intellectual property law in the area of education and scientific research. First, the protection of intellectual property rights prevents or reduces access to educational materials and technologies, especially when those rights do not reflect an appropriate balance between proprietary control and public access. By enabling rights holders to charge supracompetitive prices while giving them a right to exclude, intellectual property law has made many of these materials and technologies inaccessible to those in need.

Peter Yu, (Prof., Law, Texas A&M U.), COLUMBIA LAW REVIEW, June 2023, 1463.

Finally, the existing intellectual property system has raised difficult moral questions. Intellectual property law tends to privilege the rich at the expense of the poor. A 2001 World Bank study estimated that the adoption of the Agreement on Trade-Related Aspects of Intellectual Property Rights of the World Trade Organization, the predominant multilateral intellectual property instrument, has resulted in rent transfers of more than twenty billion dollars from developing countries "to major technology-creating countries particularly the United States, Germany, and France in the form of pharmaceutical patents, computer chip designs, and other intellectual property." As activist Roberto Verzola laments, "If it is a sin for the poor to steal from the rich, it must be a much bigger sin for the rich to steal from the poor."

5. INCOME INEQUALITY KILLS.

David Ansell, (Prof., Medicine, Rush U. Medical Center), THE DEATH GAP: HOW INEQUALITY KILLS, 2021, xiii.

We all die. But tens of thousands of Americans die too early. These early deaths are not random events. These deaths strike particular individuals who live in particular American neighborhoods. And while we know that people die of cancer, heart disease, and so on, this killer isn't one that we can treat with drugs, therapy, or surgery. This killer is inequality.

David Ansell, (Prof., Medicine, Rush U. Medical Center), THE DEATH GAP: HOW INEQUALITY KILLS, 2021, 10.

That people suffer and die prematurely because of inequality is wrong. It is wrong from an ethical perspective. It is wrong from a fairness perspective. And it is wrong because we have the means to fix it.

David Ansell, (Prof., Medicine, Rush U. Medical Center), THE DEATH GAP: HOW INEQUALITY KILLS, 2021, 64-65.

We have known for decades that better-educated, richer people live longer than poorer, less-educated people. In 1980, people with family incomes in the top 5 percent had life expectancies about 25 percent higher than those in the bottom 5 percent.

Sam Ben-Meir, (Prof., Philosophy, City University of New York), FREEING AMERICA FROM THE QUAGMIRE OF INEQUALITY, Mar. 15, 2023. Retrieved Apr. 7, 2023 from https://citywatchla.com/index.php/cw/voices/26619-freeing-america-from-the-quagmire-of-inequality

The levels of wealth inequality we are currently witnessing in this country are unprecedented and alarming. The very richest among us have succeeded in grabbing ever more of the proverbial pie, and the trend is only worsening. Wealth inequality is proving disastrous for America. On both collective and individual levels, we are suffering because of the ever-growing concentration of wealth in the hands of a tiny few.

IN GENETICS, SHARING IS SUPERIOR TO PATENT PROTECTION

1. THE MYRIAD DECISION PREVENTED PATENTING OF COVID GENOMIC SEQUENCING.

Jorge Contreras, (Prof., Law, U. Utah College of Law), NYU JOURNAL OF INTERNATIONAL LAW AND POLICY, Summer 2023, p. 537.

Data sharing at the speed and on the scale observed with COVID-19 has not always been the norm. During the H5N1 influenza pandemic and the SARS and MERS coronavirus outbreaks, researchers sought to patent newly identified viral genomic sequences shortly after they were determined. These efforts stymied research cooperation and imposed delays and barriers to the development of diagnostics, vaccines, and therapeutics. The genomic sequence of SARS-CoV-2 and its many variants, however, were not patented. This lack of patenting activity on a potentially lucrative pathogen is likely due to the unavailability of U.S. patents on naturally occurring genomic sequences following the 2013 Supreme Court decision in Association for Molecular Pathology v. Myriad Genetics.

2. OPENNESS WAS ESSENTIAL TO INTERNATIONAL COOPERATION ON THE COVID RESPONSE.

Jorge Contreras, (Prof., Law, U. Utah College of Law), NYU JOURNAL OF INTERNATIONAL LAW AND POLICY, Summer 2023, p. 537.

The speed and extent of international research cooperation in response to COVID-19 was immediate and widespread. SARS-CoV-2 sequence data was utilized by a broad range of researchers from geneticists and virologists to epidemiologists and public health officials. As one researcher observed, "[t]he enormous, immediate impact of sharing this data highlights the wealth of information encoded in pathogen genomes, particularly for understanding their origins and potential to cause disease." This sentiment was echoed by the Director of the U.S. Office of Science and Technology Policy (OSTP), who stated that "[i]mmediate public access to COVID-19 research is a powerful case study on the benefits of delivering research results and data rapidly to the people." The COVID-19 pandemic has brought into sharp focus the value of open access to and rapid sharing of pathogenic genomic data in response to infectious disease outbreaks.

3. OPENNESS WILL BE ESSENTIAL TO DEAL WITH FUTURE PANDEMICS.

Jorge Contreras, (Prof., Law, U. Utah College of Law), NYU JOURNAL OF INTERNATIONAL LAW AND POLICY, Summer 2023, p. 579.

Open, global research collaboration will be essential to address future pathogenic disease outbreaks, and measures should be taken to ensure that pathogenic sequence information is not appropriated by individual researchers, institutions, or states. A first step toward this goal is defeating legislative attempts in the United States that would overturn judicial precedents establishing that naturally occurring genomic sequences are ineligible subject matter for patent protection, while retaining ample opportunities to patent downstream innovations.

4. THE MYRIAD DECISION CREATED AN INTERNATIONAL NORM OF OPENNESS IN GENETICS RESEARCH.

Jorge Contreras, (Prof., Law, U. Utah College of Law), NYU JOURNAL OF INTERNATIONAL LAW AND POLICY, Summer 2023, p. 558.

Why does Myriad, a U.S. Court decision, seem to carry such weight on a global scale? One possibility is that the demise of genomic sequence patents in the United States established a new set of international norms and expectations around pathogenic patenting. Researchers identifying a new pathogenic strain, aware that patents are unavailable in the United States, might not find it worthwhile to file elsewhere when research, development, and production could proceed there unimpeded by such patents.

THERE IS NO EVIDENCE THAT MYRIAD HAS IMPEDED GENETIC RESEARCH

1. TIME HAS SHOWN THAT THE MYRIAD DECISION HAS NOT HURT RESEARCH.

Stephanie Huang, (JD Candidate), FORDHAM INTELLECTUAL PROPERTY, MEDIA, & ENTERTAINMENT LAW JOURNAL, Fall 2023, p. 191. Nearly ten years after the Supreme Court decided Myriad, the holding that isolated DNA segments are not patent-eligible subject matter under the Section 101 inquiry remains controversial. But time has demonstrated that foreclosure of gene patenting by the Court has yet to negatively impact research and innovation in a manner that calls for societal concern. In general, it appears that the fears and objections voiced by advocates of gene patenting are overblown, including the arguments that less patenting efforts in this field will impede scientific progress and that absence of patent protection encourages competition and inferior products will saturate the market.

2. PATENTS IMPEDE RESEARCH PROGRESS.

Jorge Contreras, (Prof., Law, U. Utah College of Law), NYU JOURNAL OF INTERNATIONAL LAW AND POLICY, Summer 2023, p. 559.

Pathogen genomic sequences enable research into disease origins, etiology, spread, response, and cure. As discussed above, patenting these sequences has been shown to delay research collaboration, impose legal requirements for licensing and collaboration agreements, and exclude others from the conduct of research and the development, manufacture, and distribution of diagnostics, vaccines, and therapeutics, as well as the monitoring of the spread and evolution of diseases. As a result, Margaret Chan, then Director-General of the WHO, criticized these patents as impediments to public health. Even when relevant patent holders have shown a willingness to cooperate and pool their patents – as several patent holders did towards the end of the SARS outbreak – the legal and administrative arrangements necessary to effectuate such pooling arrangements are resource-intensive and time-consuming, resulting in substantial delays.

Jorge Contreras, (Prof., Law, U. Utah College of Law), NYU JOURNAL OF INTERNATIONAL LAW AND POLICY, Summer 2023, p. 572.

However, the existence of patents on these basic research tools, no matter the eventual litigation outcomes, can chill research, impose delays, and provide leverage for the demand of unwarranted fees. Even meritless claims are costly to defend against and impose some level of risk to defendants, particularly in the United States, where fee shifting is rare.

3. THE MAYO DECISION HAS NOT SLOWED THE DEVELOPMENT OF GENETIC TESTING.

Corie Whalen, (Staff, R Street Institute). GROWTH IN MEDICAL DIAGNOSTICS HAS OCCURRED WITHOUT PATENTS, Nov. 2, 2022. Retrieved May 10, 2024 from https://www.rstreet.org/commentary/growth-in-medical-diagnostics-has-occurred-without-patents/

Relying on publicly available data from federally hosted databases of testing services, [Charles] Duan establishes that there is substantial growth in a key sector of laboratory-developed tests (LDTs) following the holding in Mayo in 2012: genetic testing and molecular diagnostics. ‘The number of genetic tests developed has increased at least sevenfold between 2013 and 2022,’ he writes, ‘as has the number of unique genes with developed tests.’

4. THE U.S. LEADS THE WORLD IN DEVELOPING BIOLOGIC DRUGS.

Joseph Park et al. (Samsung Bioepis Co., South Kora), BIODRUGS, June 13, 2022. Retrieved Apr. 21, 2024 from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9190447/

Hence, in the USA, we have had generic drugs (access increased by Hatch Waxman 1984 well ahead of biosimilars but not “generic biologics” (deemed unacceptable terminology because of the conflation of regulatory expectations with those of generic small-molecule drugs). Yet, the USA leads the world on originator drugs and biologics, as well as with generic adoption/access, thus the economic and public health opportunity is commensurately huge.

GENETIC MODIFICATION LEADS TO DEHUMANIZATION

1. GENETIC MODIFICATION TREATS HUMANS AS MACHINES.

Paschal Corby, (Prof., Bioethics, John Paul II Institute in Rome), HOPE AND DESPAIR OF BIOENHANCEMENT, 2019, 36.

Kampowski then suggests a second way in which cognitive enhancement might be considered as dehumanizing, in diminishing the subject to the status of a machine. We pump more into the person in order to get more results. Thus, in the example given, the air traffic controller is drugged-up in order to make him more productive. But in response Kampowski asks: "Could it ever be licit to ask people to perform a job in which they are no longer allowed to be human? If the job is so complex that it can no longer be done by one ‘unenhanced’ human being, then maybe it should be broken down, so that it can be done by two or three. What should not be done is to treat human beings as if they were machines."

2. EUGENICS IS INHERENTLY DISCRIMINATORY.

Rachel Saady-Saxe, (JD, American U. Washington College of Law), “An Analysis of State Interests in Regulating Germline CRISPR Use,” ALABAMA CIVIL RIGHTS & CIVIL LIBERTIES LAW REVIEW, 2020, 90.

Eugenics is a movement designed to "improve the composition of the human race." In the United States, this concept took hold in the late 19th century. The goal at that time was to stop "undesirable traits" from passing to new generations. Specifically, the movement targeted persons who were "poor, low in social standing, immigrants, and/or minorities." The concept of eugenics ties these characteristics to a person's genes - claiming that they are born pre-disposed to a certain way of life. The concept materialized itself in sinister and discriminatory ways: sterilization of Black persons, those incarcerated for petty crimes, those living in poverty, and those with mental disabilities; frequently without their knowledge. Eugenics lost traction in the United States after Hitler adopted the practice during World War II. However, it still has a foothold in today's society, and the effects are still palpable against those most at risk.

3. GENETIC SELECTION IS DEHUMANIZING.

Paschal Corby, (Prof., Bioethics, John Paul II Institute in Rome), HOPE AND DESPAIR OF BIOENHANCEMENT, 2019, 72.

This denial of human distinction, and the elimination of boundaries, ultimately amounts to "the negation of man," or of what C. S. Lewis prophetically refers to as his abolition: of the human person treated as an artifact, as a mere "natural object," or "as raw material for scientific manipulation to alter at will." Lewis warns against this end, troubled by the prospect of human beings assuming full control over themselves through eugenics, pre-natal conditioning, and "by an education and propaganda based on a perfect applied psychology."

4. GENETIC MODIFICATION ENDANGERS THE FUTURE OF THE HUMAN SPECIES.

Teddy Ellison, (JD Candidate), “Why Genetics Is Crispr Than It Used To Be: Helping The Novice Understand Germ Line Modification And Its Serious Implications,” SOUTHERN CALIFORNIA INTERDISCIPLINARY LAW JOURNAL, Summer 2017, 615.

Germ line modification not only alters the genes of the immediate child but also influences the genetic makeup of their offspring and so on and so forth. This is because all cells of the modified person are altered, including the germ cells. Therefore, due to the very speculative and remote nature of the risks, they are difficult, if not impossible to assess in any compressed timeframe. It would likely take decades or even centuries to be able to properly analyze exactly how the use of CRISPR will impact the human species.

GREENHOUSE GAS EMISSIONS ARE DECREASING IN THE UNITED STATES

1. U.S. CO2 EMISSIONS PEAKED IN 2005 AND HAVE BEEN DECREASING SINCE.

Ciara Nugent & Emily Barone, (Staff, Time Magazine), ECONOMIC GROWTH AND CARBON EMISSIONS USED TO GO TOGETHER. IN SOME COUNTRIES, THAT'S CHANGING, Oct. 29, 2021. Retrieved Apr. 20, 2024 from https://time.com/6110774/ carbon-emissions-economy/

With the exception of economic crises, U.S. emissions rose steadily for most of the 20th century. But they peaked in 2005, and have declined 14% since then. The 2008 financial crisis likely helped to depress emissions, as did climate policies pursued by states, cities and businesses. But most analysts say the bulk of U.S. reductions so far were driven by the rise of natural gas, which, though a fossil fuel, emits 50% less CO2 than coal. Natural gas became very cheap in the U.S. because of the fracking boom in the 2000s and, in 2016, displaced coal as the country's primary source for generating electricity. "Those market trends in the energy sector really did make a very large dent in emissions," says Kelly Levin, who led research on emissions peaks for the World Resources Institute and is now chief of science, data and systems change at Jeff Bezos's $10 billion Earth Fund.

2. TRANSPORTATION SECTOR-BASED CO2 EMISSIONS HAVE DROPPED BY 20%.

Congressional Budget Office, Dec. 2022. Retrieved Apr. 20, 2024 from https://www.cbo.gov/publication/58861

In 2021, CO2 emissions in the transportation sector were 6 percent less than they were in 2005. The decline in emissions from transportation has contributed to a drop of about 20 percent in total CO2 emissions in the United States since 2005; most of that overall reduction has come from the electric power sector.

3. CO2 EMISSIONS ARE NOW 20% LESS THAN IN 2005.

U.S. Environmental Protection Agency, CLIMATE CHANGE INDICATORS: U.S. GREENHOUSE GAS EMISSIONS, July 2022. Retrieved Apr. 20, 2024 from https://www.epa.gov/climate-indicators/climate-change-indicators-us-greenhouse-gas-emissions

In 2020, U.S. greenhouse gas emissions totaled 5,981 million metric tons (13.2 trillion pounds) of carbon dioxide equivalents. This total represents a 7 percent decrease since 1990 and a 20 percent decrease since 2005

4. METHANE EMISSIONS ARE ALSO DECREASING.

U.S. Environmental Protection Agency, CLIMATE CHANGE INDICATORS: U.S. GREENHOUSE GAS EMISSIONS, July 2022. Retrieved Apr. 20, 2024 from https://www.epa.gov/climate-indicators/climate-change-indicators-us-greenhouse-gas-emissions

For the United States, during the period from 1990 to 2020: Emissions of carbon dioxide, the primary greenhouse gas emitted by human activities, decreased by 8 percent. Methane emissions decreased by 17 percent, as reduced emissions from landfills, coal mines, and natural gas systems more than offset increases in emissions from activities such as livestock production. Nitrous oxide emissions, predominantly from agricultural soil management practices such as the use of nitrogen as a fertilizer, decreased by 5 percent. Emissions of fluorinated gases (hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride), released as a result of commercial, industrial, and household uses, increased by 90 percent. U.S. greenhouse gas emissions decreased from 2019 to 2020 by 9 percent.

RENEWABLES ARE INCREASING RAPIDLY

1. SOLAR POWER IS INCREASING AT A RATE OF ALMOST 700%.

Climate Central, A DECADE OF GROWTH IN SOLAR AND WIND POWER, Apr. 3, 2024. Retrieved May 6, 2024 from https://www.climatecentral.org/climate-matters/a-decade-of-us-solar-growth-2024

The U.S. added more than 121 GW of utility- and small-scale solar capacity in total during the last decade — an increase of around 688%. This means there was nearly eight times more solar capacity in 2023 than in 2014. The amount of electricity produced from solar increased at a similar rate. In 2023, the U.S. generated over eight times more electricity from solar energy than in 2014 — an increase of more than 209,197 GWh or 723%.

2. THE COST OF SOLAR INSTALLATION HAS FALLEN BY 85%.

Joel Jaeger, (Staff, World Resources Institute), EXPLAINING THE EXPONENTIAL GROWTH OF RENEWABLE ENERGY, Sept. 20, 2021. Retrieved May 4, 2024 from https://www.wri.org/insights/growth-renewable-energy-sector-explained

Falling costs have been the biggest factor in the explosion of renewable energy. Since 2010, the cost of solar photovoltaic electricity has fallen 85%, and the costs of both onshore and offshore wind electricity have been cut by about half. Both of these renewable sources are now cost-competitive with fossil fuel electricity.

3. WIND POWER IS ALSO GROWING RAPIDLY.

U.S. Department of Energy, DOE FINDS RECORD PRODUCTION GROWTH IN U.S. WIND POWER, Aug. 16, 2022. Retrieved Apr. 20, 2024 from https://www.energy.gov/articles/doe-finds-record-production-and-job-growth-us-wind-power-sector

The U.S. Department of Energy (DOE) today released three reports showing that wind power remains one of America's fastest growing energy sources and a generator of high-quality jobs. Wind power accounted for 32% of U.S. energy capacity growth in 2021, employs 120,000 Americans, and now provides enough energy to power 40 million American homes.

4. RENEWABLES ARE GROWING RAPIDLY ENOUGH TO MEET INTERNATIONAL CLIMATE TARGETS.

International Energy Agency, MASSIVE EXPANSION OF RENEWABLE POWER OPENS DOOR TO ACHIEVING GLOBAL TRIPLING GOAL SET AT COP28, Jan. 11, 2024. Retrieved May 6, 2024 from https://www.iea.org/news/massive-expansion-of-renewable-power-opens-door-to-achieving-global-tripling-goal-set-at-cop28

The world's capacity to generate renewable electricity is expanding faster than at any time in the last three decades, giving it a real chance of achieving the goal of tripling global capacity by 2030 that governments set at the COP28 climate change conference last month, the IEA says in a new report.

5. SOLAR POWER HAS THE POTENTIAL TO MEET ALL U.S. ENERGY NEEDS.

Environment America, SOLAR ENERGY ON THE RISE, July 2022. Retrieved Apr. 20, 2024 from https://environmentamerica.org/wp-content/uploads/2022/07/EA-Solar-on-the-Rise-3.pdf

The U.S. has the technical potential to meet its current electricity needs more than 75 times over with solar energy, and every state in the country has enough solar energy potential to supply all of its electricity needs.

Leonardo David, (Electromechanical Engineer, MBA, Energy Consultant), TOP SOLAR ENERGY FACTS AND STATISTICS OF 2023, May 11, 2023. Retrieved Apr. 20, 2024 from https://www.marketwatch.com/guides/home-improvement/solar-energy-statistics/

22,000 square miles of solar panels could provide enough energy to power the entire U.S. According to the U.S. Department of Energy, a 22,000-square-mile area (roughly the size of Lake Michigan) of solar panels could generate enough electricity for the entire country.

NEW TECHNOLOGIES ARE NOT NEEDED TO MEET CLIMATE GOALS

1. NO NEW TECHNOLOGIES ARE NEEDED.

Bill McKibben, (Founder of the environmental group, Third Act), NO MIRACLES NEEDED: HOW TODAYS' TECHNOLOGY CAN SAVE OUR CLIMATE AND CLEAN OUR AIR, 2023, p. xii.

To state it plainly: there is no longer any technical or economic obstacle to the swift transition of our energy system to something far cleaner, cheaper, and more rational. We have the miracle technologies we require firmly in hand.

Mark Jacobson, (Prof., Environmental Engineering, Stanford U.), NO MIRACLES NEEDED: HOW TODAYS' TECHNOLOGY CAN SAVE OUR CLIMATE AND CLEAN OUR AIR, 2023, p. 261.

So far, this book has examined the main technologies needed for a 100 percent clean, renewable energy and storage system. Virtually all of these technologies exist today, and none is a miracle technology.

2. ALL WE NEED TO DO IS TO USE EXISTING RENEWABLE ENERGY SOLUTIONS.

Mark Jacobson, (Prof., Environmental Engineering, Stanford U.), NO MIRACLES NEEDED: HOW TODAYS' TECHNOLOGY CAN SAVE OUR CLIMATE AND CLEAN OUR AIR, 2023, p. xiv.

Do we need miracle technologies? No. Then what is the solution? It is to transition the world's current combustion-based energy to 100 percent clean, renewable wind, water, and solar (WWS) and storage for all energy purposes and to eliminate non-energy emissions.

3. THE CLIMATE EMERGENCY MEANS THAT WE SHOULD USE THE TECH WE ALREADY HAVE.

Mark Jacobson, (Prof., Environmental Engineering, Stanford U.), NO MIRACLES NEEDED: HOW TODAYS' TECHNOLOGY CAN SAVE OUR CLIMATE AND CLEAN OUR AIR, 2023, p. 382.

Given the limited time and funding available to solve climate, air pollution, and energy security problems, it is essential we focus on known, effective technologies for the solution. We should not waste money and allow more damage with inferior options. Such poorer options include new nuclear power, fossil fuels or bioenergy with or without carbon capture, biofuels, biomass with or without carbon capture, direct air capture, blue hydrogen, and geoengineering.

Mark Jacobson, (Prof., Environmental Engineering, Stanford U.), NO MIRACLES NEEDED: HOW TODAYS' TECHNOLOGY CAN SAVE OUR CLIMATE AND CLEAN OUR AIR, 2023, p. xv.

Given our limited time and funding available to solve the pollution, climate, and energy security problems we face, it is essential to focus on known, effective solutions that can be implemented rapidly. Money spent on less-useful options will permit more health, climate, and energy insecurity damage to occur.

4. CURRENT OBSTACLES ARE POLITICAL, NOT TECHNOLOGICAL.

Mark Jacobson, (Prof., Environmental Engineering, Stanford U.), NO MIRACLES NEEDED: HOW TODAYS' TECHNOLOGY CAN SAVE OUR CLIMATE AND CLEAN OUR AIR, 2023, p. 318.

In fact, the main barriers to transitioning to 100 percent clean, renewable energy are neither technical nor economic; instead, they are social and political.

THE U.S. PATENT AND TRADEMARK OFFICE ALREADY PROMOTES GREEN PATENTS

1. THE USPTO HAS SEVERAL GREEN TECH INCENTIVE PROGRAMS.

Alice Yoon, (JD Candidate), BOSTON COLLEGE INTELLECTUAL PROPERTY & TECHNOLOGY FORUM, 2023, p. 7.

The USPTO has recently implemented three programs to incentivize green tech innovation by awarding and advancing patents: (1) the Climate Change Mitigation Pilot Program; (2) the Patents for Humanity Awards Competition; and (3) the joint work-sharing program with NOAA. These recent domestic initiatives emphasize the importance the USPTO is placing on its role in fostering and supporting green technology.

2. THE USPTO ALREADY FAST-TRACKS GREEN PATENTS.

Alice Yoon, (JD Candidate), BOSTON COLLEGE INTELLECTUAL PROPERTY & TECHNOLOGY FORUM, 2023, p. 7.

In June 2022, the UPSTO established the Climate Change Mitigation Pilot Program, which aims to fast-track up to 4,000 qualifying patent applications that focus on environmental protection, such as renewable energy or reducing greenhouse gas emissions. The Program will remain open until June 2027, or until the USPTO has accepted 4,000 grantable petitions. Patent application examination timelines will be significantly reduced, as applications that typically take two-and-a-half years to prosecute may now be settled within twelve months. The goal of the program is to maximize and encourage innovation in key areas of climate change prevention by providing “ready and equitable” intellectual property protection.

3. THE USPTO OFFERS PRIZES FOR GREEN PATENTS.

Benjamin Desch, (JD Candidate), WASHINGTON LAW REVIEW, 2023, p. 640.

The Patents for Humanity award is one patent prize system that has experienced some success. Patents for Humanity is the USPTO's "awards competition recognizing innovators who use game-changing technology to meet global humanitarian challenges." Eligible invention categories related to green technology include "sanitation," described as inventions that improve lives by addressing clean water, waste treatment, air pollution, and toxic substances issues, and "household energy," relating to technologies that provide power to "energy-poor homes and communities." The program began as a pilot in 2012, and gained sufficient private and public support to be instituted as an ongoing program in 2014. From 2012 to 2020, thirty-six inventors received the Patents for Humanity award and nineteen received honorable mentions. Examples of clean technology winners include a membrane bioreactor that can recover nutrients, energy, and water from wastewater, and a durable, portable solar light.

4. THE USPTO ACCELERATES REVIEWS OF GREEN PATENTS.

Johanna Rahnasto, (Attorney), CHICAGO-KENT JOURNAL OF INTELLECTUAL PROPERTY, Dec. 20, 2023, p. 58.

In June 2022, the United States Patent and Trademark Office (USPTO) announced it would provide accelerated review for patent applications that reduce greenhouse gas (GHG) emissions under a Climate Change Mitigation Pilot Program. Under the pilot program, GHG reduction technologies may be eligible for fast-tracked examination. In July 2022, the USPTO also announced that it is joining World Intellectual Property Organization's (WIPO) WIPO GREEN, an online knowledge-sharing platform for green technologies In March 2022, WIPO GREEN launched a new initiative, IPO GREEN, that shares information and provides support for green innovation programs of patent offices. In March 2023, the USPTO also announced a new green technology award that provides the winners with an acceleration certificate that can be used to speed up USPTO processing.

5. THE USPTO HAS EXTENDED ITS PATENT INCENTIVE PROGRAM TO 2027.

Katherine K. Vidal, (Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office), EXPANSION AND EXTENSION OF THE CLIMATE CHANGE MITIGATION PILOT PROGRAM, June 1, 2023. Retrieved Feb. 25, 2024 from Nexis Uni.

The program, as expanded by this notice, will run from June 6, 2023, until either June 7, 2027, or until the date that the USPTO accepts a total of 4,000 grantable petitions, whichever occurs first. The total of 4,000 grantable petitions includes petitions granted under the existing and expanded programs combined. Information concerning the number of petitions that have been filed and granted under the program will continue to be available on the program's web page. The USPTO may further extend the program (with or without modifications) depending on feedback from the participants and the effectiveness of the program.

Kristie A. Mahone, (Senior Legal Advisor, Office of Patent Legal Administration, U.S. Patent and Trademark Office), USPTO EXPANDS AND EXTENDS CLIMATE CHANGE MITIGATION PILOT PROGRAM, May 31, 2023. Retrieved Feb. 25, 2024 from https://www.uspto.gov/about-us/news-updates/uspto-expands-and-extends-climate-change-mitigation-pilot-program

The United States Patent and Trademark Office (USPTO) published a notice in the Federal Register announcing the expansion and extension of the Climate Change Mitigation Pilot Program, which was initially launched in June 2022. Beginning on June 6, 2023, the USPTO will expand the program eligibility requirements to encompass a more robust group of innovations in any economic sector that advance progress toward achieving net-zero greenhouse gas emissions. Included innovations will be those designed to: Remove greenhouse gases already present in the atmosphere; Reduce and/or prevent additional greenhouse gas emissions; and/or Monitor, track, and/or verify greenhouse gas emission reductions. The expansion also includes an increase in the maximum number of nonprovisional applications an inventor is allowed to “make special,” or those that qualify for expedited initial review by the agency under the pilot program.

6. THE USPTO DOES NOT CHARGE FOR THE FILING OF GREEN PATENTS.

Ryan Schermerhorn, (Patent Attorney, Marshall, Gerstein & Borun LLP), IP TRENDS IN CLEAN TECH INNOVATION, Dec. 22, 2023. Retrieved Feb. 25, 2024 from Nexis Uni.

To encourage these trends, the USPTO in 2022 introduced a Climate Change Mitigation Pilot Program, allowing patent applicants to expedite – free of charge – the examination of their U.S. patent applications so long as one or more claims of the application are directed to reducing greenhouse gas emissions. Due to the success of this program, the USPTO recently extended it for three more years until 2027 (and expanded the scope of subject matter of eligible applications, notably to include claims directed to emission prevention and monitoring techniques.

7. THE FILING OF GREEN PATENTS HAS ACCELERATED.

Ryan Schermerhorn, (Patent Attorney, Marshall, Gerstein & Borun LLP), IP TRENDS IN CLEAN TECH INNOVATION, Dec. 22, 2023. Retrieved Feb. 25, 2024 from Nexis Uni.

According to research available from the WIPO and Mathys & Squire: Patent applications for renewable energy – which includes solar power, fuel cells, wind energy and geothermal technologies – increased by almost 30% during the 17-year span between 2002 and 2019. Patent applications for carbon capture and storage technologies – which reverse the negative effects of carbon emissions – are up 65% between 2020 and 2022. Patent applications for electric vehicles are up 59% between 2020 and 2022.

THE EXPECTATION OF A "SILVER BULLET" SOLUTION TO CLIMATE CHANGE ONLY DELAYS REAL SOLUTIONS

1. THE PROMISE OF NEW TECH SOLUTIONS ONLY DELAYS MEANINGFUL ACTION.

Annie Brett, (Prof., Law, University of Florida Levin College of Law), ECOLOGY LAW QUARTERLY, 2022, p. 602.

New technologies to save the environment are everywhere. From privately funded gene drives aiming to eradicate invasive species on islands, to iron fertilization efforts intending to sequester carbon dioxide, technological silver bullets are seen by many as a critical hope in efforts to mitigate increasing environmental degradation and global-scale problems like climate change. Billions of dollars are being spent on developing and deploying these technologies, which have quickly won the hearts and minds of members of the public, governments, and corporations. These technologies are a red herring, promising easy solutions when real change requires difficult engagement with complex social-ecological systems.

2. WAITING FOR NEW TECH JUST DELAYS THE SWITCH FROM FOSSIL FUELS.

Heather Payne, (Prof., Law, Seton Hall U. School of Law), ENVIRONMENTAL LAW, Spr. 2022, p. 278.

By protecting fossil-fuel use into the future by enabling CCS, we incent the status quo, hindering the widescape adoption of deployable renewable solutions to the issues associated with global climate change. With all such distractions, whether CCS, hydrogen, small modular reactors, or similar technologies that will solve all our problems ten years from now, we must recognize we can do far more for the planet by minimizing their use. Implementing legal paradigms allows us to do that - to stop chasing squirrels in the energy transition.

3. WAITING FOR A "SILVER BULLET" SOLUTION IS A DEAD END.

Annie Brett, (Prof., Law, University of Florida Levin College of Law), ECOLOGY LAW QUARTERLY, 2022, p. 617.

A true environmental silver bullet is a technological solution that aims to "fix" an environmental problem in one fell swoop. Implicit in the cultural understanding of silver bullets is their impossibility: solutions that sound too good to be true usually are.

4. GEOENGINEERING TECHNOLOGY IS A DANGEROUS FIX.

Zora Franicevic, (JD Candidate, Cornell Law School), CORNELL JOURNAL OF LAW & PUBLIC POLICY, Spr. 2021, p. 588.

Geoengineering has hubris written all over it. Indeed, it seems paradoxical, and perhaps even a bit tragic, that society would now contemplate the deployment of technological options with potential serious negative climatic side effects to respond to the impacts of technologies with serious negative climate impacts.

Annie Brett, (Prof., Law, University of Florida Levin College of Law), ECOLOGY LAW QUARTERLY, 2022, p. 618.

Geoengineering solutions are criticized not only for their negative impacts, but for concerns that counting on these technological fixes will prevent policy makers from taking other necessary mitigation measures, like reducing emissions. This illustrates an important point about environmental silver bullets more broadly: while the concrete environmental consequences may be relatively easy to measure and address, they are not the only negative impacts of relying on technological solutions to environmental problems. Ignoring the systemic causes of environmental degradation undermines the effectiveness of technological interventions. Meanwhile, relying on technology to save the day diverts needed resources and momentum away from making necessary systemic changes.

PATENTS OFFER AN INFERIOR MEANS OF DEALING WITH CLIMATE CHANGE

1. PATENTS BLOCK THE SPREAD OF GREEN TECHNOLOGY.

Samuel Cayton, (JD Candidate), SEATTLE JOURNAL OF ENVIRONMENTAL LAW, 2020, p. 219.

This tension between the rights of the patent holder and the need to use their green technology can be described as the Green Patent Paradox, whereby patented technologies geared toward mitigating the effects of climate change or substituting environmentally hazardous industries may not reach their full potential in part because patentees refrain from licensing their products.

Daniel Farber, (Prof. of Law and Director of the Center for Law, Energy, and the Environment, at the University of California, Berkeley), TEXAS A&M LAW REVIEW, Winter 2024, p. 315.

The patent system relies on the prospect of high profits from the use of a patent to incentivize invention, but this mechanism raises prices for users and thereby disincentivizes actual use of the invention. Thus, a side effect of using patents as an incentive for invention is to reduce the spread of desirable technologies. Moreover, consumers will generally pay extra only for the benefits of the invention to themselves. Thus, the patent incentive system does not take into account the possible benefits that a technology has for third parties, which is a critical aspect of clean energy technologies. For these reasons, the patent system under-incentivizes innovation in technologies that reduce carbon emissions. It also inhibits the uptake of new technologies because the patent monopoly results in a higher price that slows adoption.

2. OPEN SOURCE IS SUPERIOR TO PATENT PROTECTION.

Samuel Cayton, (JD Candidate), SEATTLE JOURNAL OF ENV. LAW, 2020, p. 244.

The Green Patent Paradox demonstrates that the patent system impedes innovation by allowing rights' holders to sit on their patent rights further slowing the transition to an environmentally sustainable economy. Although eBay is a victory in that it helps encourage continued use of other patent holder's green patents, the ITC functions as a loophole for patent holders who want to halt secondary users or pressure them to take unwanted licensing agreements.

3. THE CREATIVE COMMONS IS SUPERIOR TO PATENT PROTECTION.

Dalindyebo Bafana Shabalala, (Prof., Law, U. of Dayton School of Law), Winter 2020, p. 17.

A pilot version of such an exchange for environmentally sound technologies was Green Xchange, which was established in 2009 as a collaboration of Creative Commons and several firms, to implement a patent commons approach first pioneered by Creative Commons in the copyright arena and extended now to the field of patents. Green Xchange offered four kinds of standard licenses: Intellectual capital which provided free and open access to all for any purposes; Research Non-exempt which is limited to free access for non-profits for noncommercial research purposes only (patenting for non-commercial purposes is also allowed); Standard which provided a royalty free license for exploitation for commercial purposes; and Standard PLUS which required some payments and could contain other term restrictions.

Dalindyebo Bafana Shabalala, (Prof., Law, U. of Dayton School of Law), Winter 2020, p. 26.

There is a need in industrialized countries for a clear policy focus on ensuring that publicly funded technologies are made available at grant or concessional rates on a non-exclusive basis to firms and institutions in developing countries. This needs to go beyond the non-profit Model licenses made available by, for example, the US National Institutes of Health ("NIH"). This would require that funding agencies maintain ownership or retain non-exclusive licenses, with the option of sub-licensing on a non-exclusive basis and geographically limited to developing countries, on a grant or concessional basis.

4. PATENT PROTECTION MAKES IT LESS LIKELY THAT GREEN TECHNOLOGY WILL SPREAD TO DEVELOPING COUNTRIES.

Caoimhe Ring, (Ph.D. Candidate, Intellectual Property Law, U. Oxford), HARVARD JOURNAL OF LAW & TECHNOLOGY, Fall 2021, p. 391.

It remains worrying, however, that patent law has the potential to impede technological advance, with terrible repercussions. Patents have been used to raise prices during times of crises, such as over the much-needed Tamiflu during the avian flu crisis of 2004-2005. Patent hold-up for green technology could imperil the developing nations most vulnerable to the impacts of climate change, which can have weak homegrown IP regimes and can be reliant on access to technologies from the Global North. It can also stall sequential advances.

Jayne Piana, (Intellectual Property Attorney), TEXAS ENVIRONMENTAL LAW JOURNAL, Spr. 2022, p. 45.

Patents are inherently exclusionary; a patent provides the owner with the right to exclude others from practicing the claimed technology. It has been observed that traditional intellectual property (IP) law "does little to encourage transfer of technology for a global response to climate change because it is so rooted in protecting one's exclusive rights and using those rights for wealth building."

Samuel Cayton, (JD Candidate), SEATTLE JOURNAL OF ENVIRONMENTAL LAW, 2020, p. 225.

Because of the dominion that a patent holder has over the rights to their patented technologies, the threat of valuable green technology not reaching the market on a necessary scale remains imminent.

5. UNLESS THERE IS ACTION IN DEVELOPING COUNTRIES, CLIMATE CHANGE GOALS CANNOT BE MET.

Philip Rossetti, (Former Director of Energy at the American Action Forum). PRIMER: NO COUNTRY CAN FIX CLIMATE CHANGE ON ITS OWN. May 20, 2019. Retrieved May 8, 2024 from https://www.americanactionforum.org/insight/primer-us-cant-fix-climate-change-on-its-own/

The global nature of climate change is a fundamental component of the climate change challenge, yet rarely plays the central role in policymaking. Instead, politicians' climate proposals are invariably focused primarily on domestic policies. That focus is natural, since Congress has little reach beyond America's shores on this issue, but it has created a misleading perception that domestic policies alone could have a meaningful impact on the future costs from climate change. In fact, even the most dramatic domestic climate policy would have only a small impact on the problem. The United States has contributed the most to global warming historically, but the United States emits only a small share of current global emissions—about 16 percent of carbon dioxide and just over 14 percent of total greenhouse gasses—and that percentage is shrinking every year. Other nations, especially developing ones, are growing rapidly, using more energy—and therefore emitting more greenhouse gases.

Mark Nevitt, (Prof., Law, Syracuse U. College of Law), U. CALIFORNIA AT DAVIS LAW REVIEW, Dec. 2021, 607.

Reducing U.S. domestic GHG emissions alone does not guarantee that other nations follow suit. Taking such action will be insufficient to close the GHG emissions gap; GHG emissions from developing nations may well offset any decrease in U.S. emissions.

CARBON REMOVAL TECHNOLOGIES ARE COUNTERPRODUCTIVE TO MEETING CLIMATE GOALS

1. MOST CAPTURED CARBON DIOXIDE IS USED TO PROMOTE FOSSIL FUEL EXTRACTION.

Bruce Robertson, (Analyst, Institute for Energy Economics and Financial Analysis), BULLETIN OF THE ATOMIC SCIENTISTS, Sept. 1, 2022. Retrieved May 6, 2024 from https://thebulletin.org/2022/09/plagued-by-failures-carbon-capture-is-no-climate-solution/

The Institute for Energy Economics and Financial Analysis has estimated that most of the total captured carbon throughout history found its use in enhanced oil recovery—approximately 80–90 percent. Only a small proportion of carbon capture projects (approximately 10–20 percent) have stored carbon in dedicated geological structures without using it for oil and gas production.

Mark Jacobson, (Prof., Environmental Engineering, Stanford U.), NO MIRACLES NEEDED: HOW TODAYS' TECHNOLOGY CAN SAVE OUR CLIMATE AND CLEAN OUR AIR, 2023, p. 22.

Carbon capture and use (CCU) is the same as CCS, except that the carbon dioxide isolated during carbon capture is sold to industry to pay back the cost of the carbon capture equipment. To date, the major application of CCU has been enhanced oil recovery.

Mark Jacobson, (Prof., Environmental Engineering, Stanford U.), NO MIRACLES NEEDED: HOW TODAYS' TECHNOLOGY CAN SAVE OUR CLIMATE AND CLEAN OUR AIR, 2023, p. 153.

To date, carbon dioxide has been captured and separated primarily from natural gas processing facilities, coal-fired power plants, a plant that gasifies coal to produce natural gas, ethanol refineries, and a facility producing hydrogen. In most cases, the carbon dioxide has been used to enhance oil recovery.

2. THE FOSSIL FUEL INDUSTRY HAS SUCCEEDED IN REBRANDING CARBON CAPTURE AS A GREEN TECHNOLOGY.

Bruce Robertson, (Analyst, Institute for Energy Economics and Financial Analysis), BULLETIN OF THE ATOMIC SCIENTISTS, Sept. 1, 2022. Retrieved May 6, 2024 from https://thebulletin.org/2022/09/plagued-by-failures-carbon-capture-is-no-climate-solution/

As the climate change movement gained momentum, the oil and gas industry wisely rebranded enhanced oil recovery as a "climate-friendly" process with a new name: carbon capture utilization and storage. Today, over 70 percent of carbon capture projects are, in fact, enhanced oil recovery projects used to produce more oil and/or gas, resulting in yet more greenhouse gas emissions.

3. CARBON REMOVAL PROGRAMS DIVERT ATTENTION FROM MEANINGFUL CHANGE.

Mark Jacobson, (Prof., Environmental Engineering, Stanford U.), NO MIRACLES NEEDED: HOW TODAYS' TECHNOLOGY CAN SAVE OUR CLIMATE AND CLEAN OUR AIR, 2023, p. 21-22.

A proposal to help solve the climate problem, but that also has the side effect of keeping the fossil-fuel and bioenergy industries in business, is to capture the carbon dioxide emitted from fossil-fuel or bioenergy power plants before the carbon dioxide escapes their exhaust stacks. The carbon dioxide is then either stored underground or used by industry. The carbon dioxide is captured with equipment added to the plant. This solution is poor for five reasons: it increases emissions and the resulting health problems of all gases and particles aside from carbon dioxide compared with no capture; it only marginally reduces carbon dioxide; it increases the land degradation from the mining of fossil fuels compared with no capture; it increases fossil-fuel infrastructure; and it diverts funding from lower-cost renewables that reduce climate and air pollution problems more effectively than does carbon capture.

4. CARBON DIOXIDE DISPOSAL PROGRAMS ARE DANGEROUS.

Bruce Robertson, (Analyst, Institute for Energy Economics and Financial Analysis), BULLETIN OF THE ATOMIC SCIENTISTS, Sept. 1, 2022. Retrieved May 6, 2024 from https://thebulletin.org/2022/09/plagued-by-failures-carbon-capture-is-no-climate-solution/

Despite its long history, carbon capture is a problematic technology. A new IEEFA study reviewed the capacity and performance of 13 flagship projects and found that 10 of the 13 failed or underperformed against their designed capacities, mostly by large margins.

Bruce Robertson, (Analyst, Institute for Energy Economics and Financial Analysis), BULLETIN OF THE ATOMIC SCIENTISTS, Sept. 1, 2022. Retrieved May 6, 2024 from https://thebulletin.org/2022/09/plagued-by-failures-carbon-capture-is-no-climate-solution/

Even if the carbon dioxide can be injected underground, there is no guarantee that it will stay there and not leak into the atmosphere. There are several real-world examples of failure to keep gas underground. The best example is the California Aliso Canyon gas leak in 2015, the worst man-made greenhouse gas disaster in US history, when 97,000 metric tons of methane leaked into the atmosphere. While the leak at Aliso Canyon was a methane, not carbon dioxide, leak, depleted oil and gas reservoirs are commonly used to store captured carbon dioxide. The problems encountered at Aliso Canyon could also be encountered with carbon dioxide at a carbon capture project. Another failure was the In Salah project in Algeria, a carbon capture project with a total cost of US$2.7 billion. Injection started in 2004 and was suspended in 2011 due to concerns about the integrity of the seal and suspicious movements of the trapped carbon dioxide under the ground. The entire efficacy of the carbon capture process has been called into question by the Intergovernmental Panel on Climate Change. In its special report on Carbon Dioxide Capture and Storage, the IPCC stated: “CO2 storage is not necessarily permanent. Physical leakage from storage reservoirs is possible via (1) gradual and long-term release or (2) sudden release of CO2 caused by disruption of the reservoir.”

Heather Payne, (Prof., Law, Seton Hall U. School of Law), ENVIRONMENTAL LAW, Spr. 2022, p. 239.

There are currently only three places where the natural, spontaneous release of supersaturated carbon dioxide can kill: Lakes Nyos and Monoun in Cameroon and Lake Kivu in Rwanda. In 1984, sudden outgassing killed thirty-seven people at Lake Monoun. Two years later, Lake Nyos released 1.6 million metric tons of CO2 and killed 1,746 people and 3,500 livestock by asphyxiation. These three locations may be the only places on the planet where death due to carbon dioxide asphyxiation is a natural possibility; however, should the practice and implementation of carbon capture and sequestration (CCS) become widespread, many more locations would have the potential to release large amounts of CO2, akin to what occurs in these lakes. Accordingly, as CCS is implemented, the number of humans and animals who could suffer from such a release likewise becomes significantly larger.

Heather Payne, (Prof., Law, Seton Hall U. School of Law), ENVIRONMENTAL LAW, Spr. 2022, p. 239.

The risks associated with the release of carbon dioxide from carbon dioxide pipelines are already apparent, as the residents of Satartia, Mississippi found out last year. When the carbon dioxide pipeline running through the town ruptured, "people were inside the cloud, gasping for air, nauseated and dazed. Some two dozen individuals were overcome within a few minutes, collapsing in their homes; at a fishing camp on the nearby Yazoo River; in their vehicles." Forty-nine were hospitalized, and many have continuing health problems because of the event. The local emergency management director claimed that the town "got lucky" and had the rupture occurred with other atmospheric conditions or at another time of day, there "would have [been] deaths."

THE PRIVATE MARKETPLACE OFFERS SUFFICIENT INCENTIVES TO SPEED THE SHIFT TO RENEWABLES

1. SOLAR POWER IS NOW THE CHEAPEST ENERGY SOURCE.

Enel Green Power, SOLAR ENERGY FACTS, MAR. 10, 2023. Retrieved Apr. 20, 2024 from https://www.enelgreenpower.com/learning-hub/renewable-energies/solar-energy/facts-solar-energy-usa

Solar is one of the cheapest energy sources available and, since it is harnessed using technology not fuel, its costs will automatically decrease as technology advances. According to the financial advisory firm Lazard, the cost of producing 1 MWh of solar fell by 86% from 2009 to 2017. Even without subsidies, in some places solar is the cheapest source of electricity in history, according to a 2020 report by the International Energy Agency.

2. MARKET FORCES ARE NOW DRIVING THE SHIFT TO RENEWABLES.

Jeremy Rifkin, (Prof., Wharton School, U. of Pennsylvania), THE GREEN NEW DEAL, 2020, 55.

Given that solar and wind are now cheaper than coal and head-to-head with oil and natural gas, and within just a few years will be far cheaper, and with the marginal cost of generating solar and wind near zero, the upfront financial commitment to decouple from fossil fuels and reinvest in renewable energies is, simply speaking, a smart business decision.

Jeremy Rifkin, (Prof., Wharton School, U. of Penn.), THE GREEN NEW DEAL, 2020, 56.

Currently, power and utility companies are quietly buying long-term power generation contracts for solar for as little as 2.42 cents a kilowatt-hour. And according to a 2019 report released by the International Renewable Energy Agency (IRENA), onshore wind is being generated at as low as 3 to 4 cents per kilowatt-hour, with no end in sight in terms of the exponentially falling cost of generating the new green energies.

3. COAL AND GAS-FIRED POWER PLANTS HAVE NOW BECOME UNECONOMICAL.

Joel Jaeger, (Research Associate, World Resources Institute), EXPLAINING THE EXPONENTIAL GROWTH OF RENEWABLE ENERGY, Dec. 6, 2021. Retrieved Apr. 20, 2024 from https://www.greenbiz.com/article/explaining-exponential-growth-renewable-energy

Falling costs have been the biggest factor in the explosion of renewable energy. Since 2010, the cost of solar photovoltaic electricity has fallen 85 percent, and the costs of both onshore and offshore wind electricity have been cut by about half. Both of these renewable sources are cost-competitive with fossil fuel electricity. Costs have fallen so dramatically due to positive feedback loops. The more that renewable energy technologies are deployed, the cheaper they become due to economies of scale and competitive supply chains, among other factors. These falling costs in turn spur more deployment.

Max Roser, (Founder and Director of Our World in Data), WHY DID RENEWABLES BECOME SO CHEAP SO FAST?, Dec. 1, 2020. Retrieved Apr. 20, 2024 from https://ourworldindata.org/cheap-renewables-growth

Fossil fuels dominate the global power supply because until very recently electricity from fossil fuels was the cheapest. This has changed dramatically. In most places power from new renewables is now cheaper than new fossil fuels.

Tim Dickinson, (Staff, Rolling Stone), THE GREEN NEW DEAL IS CHEAP, ACTUALLY, Apr. 6, 2020. Retrieved Jan. 10, 2023 from https://www.rollingstone.com/politics/politics-news/why-the-green-new-deal-is-cheap-actually-965794/

The green energy itself is also cheaper — saving $1.3 trillion a year for consumers over the fossil-fueled status quo. Ending combustion would also save 63,000 lives a year otherwise lost to air pollution. Most surprising: The study projects that a carbon-free economy increases energy employment. While 2.2 million fossil-fuel jobs would be lost, they would be replaced by 5.2 million permanent clean-energy jobs.

CHINA HAS SHIFTED ITS POLICY – IT NOW PROTECTS INTELLECTUAL PROPERTY

1. CHINA NOW RECOGNIZES THAT IP PROTECTION IS ESSENTIAL TO ITS OWN ECONOMIC GROWTH.

Runhua Wang, (Fellow, Chicago-Kent College of Law), UMKC LAW REVIEW, Winter 2020, p. 357.

As the economy continues to grow, China has recognized the importance of IPRs and IP protection to both innovation and economic prosperity. Both the central and local governments consciously promulgate various policies and establish different mechanisms to stimulate the amount of IPRs and to enhance IP enforcement.

Kal Raustiala, (Prof., Law, UCLA Law School), COLUMBIA JOURNAL OF TRANSNATIONAL LAW, 2020, p. 563.

More broadly, the increasing stringency of Chinese IP law likely reflects China's incredibly rapid economic growth. China today is, as an economic matter, a completely different country compared to China in 2000. (According to World Bank data, China's GDP in this period rose by an astonishing 1000%.) Just as the United States, once pilloried as an infringer, became a leading proponent of IP protection when that served its economic interests, so too may China increasingly see secure IP rights as a valuable tool to promote and protect innovation and profit. But this is likely to be a slow process, and not only because China may indeed have a different historical and cultural relationship to copying.

Jyh-An Lee, (Prof., Law, Chinese U. of Hong Kong), COLUMBIA JOURNAL OF LAW & ARTS, Winter 2020, p. 181.

Given the tremendous royalties the country has paid to foreign IP owners, China has evidently realized that innovation is the only way to maintain its economic growth and advance from being a low-level producer; likewise, Chinese companies have begun to realize that innovation, instead of imitation and low-end production, is the only way to generate value and international competitiveness.

2. CHINA IS BECOMING AN INTERNATIONAL LEADER IN IP PROTECTION.

Kal Raustiala, (Prof., Law, UCLA Law School), COLUMBIA JOURNAL OF TRANSNATIONAL LAW, 2020, p. 562.

Somewhat hyperbolically, perhaps, in 2017 the Silicon Valley site Techcrunch declared: China is quickly becoming a (if not the) global leader in intellectual property protection and enforcement. And there too, just as Western democracies (especially the United States) have grown increasingly skeptical of the value of intellectual property and have weakened protection and enforcement, China has been steadily advancing its own intellectual property system and the protected assets of its companies and citizens.

3. CHINESE COURTS NOW PROTECT IP.

Nan Lan, (JD Candidate, SMU School of Law), AMERICAN UNIVERSITY INTELLECTUAL PROPERTY BRIEF, Apr. 2020, p. 31.

The implementation of patent trial courts around the country, for one, arguably puts China ahead of a lot of jurisdictions. For example, in the U.S., the only dedicated intellectual property tribunal is the Federal Circuit. The Outline of the Judicial Protection of Intellectual Property in China (2016-2020) published by the Supreme People's Court points out that China has taken significant steps to eliminate local judicial protectionism and ensure adequate adjudication process in intellectual property cases.

4. PATENT ENFORCEMENT IN CHINA IS NOW STRONG.

Xuan-Thao Nguyen & Jeffrey Maine, (Dir., Center for Intellectual Property & Innovation, Indiana U./Prof., Law, U. of Maine School of Law), BOSTON U. LAW REVIEW, Sept. 2019, p. 1727.

For example, China is more willing to protect software patents and includes software inventions in the scope of the patent protection and innovation ecosystem. Under China's strong patent system, injunctive relief is readily available as 90% of patentees secure relief upon a finding of infringement. Plaintiffs, in enforcing their patents against infringers, enjoy a success rate of more than 60%. In other words, China provides a strong and favorable patent system. Consequently, investments in creating and valuing intellectual property have been diverted to or concentrated in Europe and China.

5. CHINA PAYS MASSIVE ROYALTIES TO U.S. COMPANIES.

Wei Shi, (Prof., Law, Bangor U. School of Law, UK & Prof., International Law, Nankai U., China), TEXAS INTERNATIONAL LAW JOURNAL, Spr. 2020, p. 208.

As of August of 2004, a global accounting firm estimated that a Chinese manufacturer was required to pay 15 to 22 percent in patent royalties in order to build a DVD player with a retail value as low as 60 dollars. In another report, it was estimated that a staggering 50 to 70 percent of the costs incurred by a Chinese company manufacturing a computer were due to the royalty payments to Intel and Microsoft.

Peter Petri & David Dollar, (Analysts, Brookings Institution). THE US-CHINA TECH RIVALRY SHAPES THE ECONOMIC RELATIONSHIP, June 8, 2020. Retrieved May 10, 2024 from https://www.brookings.edu/articles/the-us-china-tech-rivalry-shapes-the-economic-relationship/

The U.S. is a world leader, probably the world leader, in creating intellectual property so being compensated for that property is critical to the American economy. But if you look at the other side of this, Chinese royalty payments for intellectual property have been rising at about 20 percent a year for a couple of decades. I mean, this is a very sustained, substantial increase. China’s royalty payments for technology are now second only to the U.S, and a lot – somewhere between a quarter or a third – of Chinese royalty payments actually go to U.S. companies.

6. CHINA NOW FILES MORE PATENTS THAN THE U.S.

James Cooper, (Prof., Law, California Western School of Law), WAKE FOREST JOURNAL OF BUSINESS & INTELLECTUAL PROPERTY LAW, Fall 2021, p. 73.

Although the worldwide actual number of patent applications has decreased, China received the highest number of applications in the world--more than twice the number of 621,453 applications received by the U.S., the country with the second highest number.

Kal Raustiala, (Prof., Law, UCLA Law School), COLUMBIA JOURNAL OF TRANSNATIONAL LAW, 2020, p. 560.

Chinese authorities have also revamped patent laws and created specialized courts to hear IP disputes. Partly as a consequence, and to the surprise of many, China has surpassed the United States to become the world's top issuer of patents. As the Wall Street Journal has reported, China issued 359,000 new patents in 2015, up 54% from 2014. U.S. patents, meanwhile, slipped less than 1% to 298,400.

CHINESE ECONOMIC WEAKNESS IS MORE LIKELY TO TRIGGER WAR OVER TAIWAN

1. ECONOMIC DECLINE IN CHINA WILL CAUSE POLITICAL UPHEAVAL.

Timothy Heath, (Sr. Defense Researcher, RAND Corporation), COULD BEJING RISK A DIVERSIONARY WAR AGAINST TAIWAN?, Jan. 13, 2023. Retrieved Aug. 27, 2024 from https://www.lawfaremedia.org/article/could-beijing-risk-diversionary-war-against-taiwan

Beijing's risk aversion may partly reflect Xi's personal preference, but it more likely owes to the state's declining capacity and legitimacy. The margin of error is simply thinner today than in the past. China faces a perpetually high level of unrest, underscored by the country's extensive reliance on repression. Any shock to the political economy could generate upheaval.

2. POLITICAL UPHEAVAL IN CHINA WILL MORE LIKELY CAUSE IT TO TAKE MILITARY RISKS.

Keikichi Takahashi, (Prof., International Relations, Osaka University in Japan), WEAK CHINA AS A THREAT TO WORLD SECURITY, Nov. 8, 2023. Retrieved Aug. 27, 2024 from https://www.geopoliticalmonitor.com/weak-china-as-a-threat-to-world-security/

In relation to this argument, US President Joe Biden's statement at a fundraising event in Utah on August 10 is worth noting. He said, "China is a ticking time-bomb." Its growth rate was "8 percent a year," but "now closer to 2 percent a year." "China finds itself in a position where it has the highest unemployment rate going." It is also "in a position where the number of people who are of retirement age is larger than the number of people of working age." Clearly, "China is in trouble," but, he warned, "that's not good because when bad folks have problems, they do bad things."

3. CHINESE ECONOMIC DECLINE INCREASES THE RISK OF AN ATTACK ON TAIWAN.

Timothy Heath, (Sr. Defense Researcher, RAND Corporation), COULD BEJING RISK A DIVERSIONARY WAR AGAINST TAIWAN?, Jan. 13, 2023. Retrieved Aug. 27, 2024 from https://www.lawfaremedia.org/article/could-beijing-risk-diversionary-war-against-taiwan

The combination of a weakening strategic situation and an increasingly despotic regime has left Xi with few constraints on his power. Many observers fear that a Beijing despondent over the country's deteriorating situation could risk military adventurism as a diversion. Analysts warn that the situation could motivate China to risk aggressive behavior against Taiwan, disputed islands in the first island chain, and in foreign policy more generally. Russia's invasion of Ukraine provides a vivid contemporary example of such a danger, but experts also cite precedents from World War I and II. Hal Brands has warned that China might consider war once it senses that a "geopolitical window of opportunity" may be closing. Moreover, China's own history provides a precedent in which an internally troubled China carried out a major war along its periphery.

THE U.S. CHINA ECONOMIC AND TRADE AGREEMENT (USCTA) PROVIDES THE ULTIMATE PROTECTION OF U.S. INTELLECTUAL PROPERTY

1. THE USCTA IS NOW IN FORCE.

Daniel Chow, (Chair, Dept. of Business Law, Ohio State University), NOTRE DAME JOURNAL OF INTERNATIONAL AND COMPARATIVE LAW, 2021, p. 181.

On January 15, 2020, the United States and the People's Republic of China (PRC or China) signed Phase I of the U.S.-China Economic and Trade Agreement (USCTA), which suspended a two-year trade war between the world's two largest economies. Proclaimed by the United States as a breakthrough, the USCTA contains commitments by China to purchase $200 billion in U.S. goods and services and to implement substantial new protections for U.S. intellectual property (IP) rights. Aside from China's purchase commitments, the most touted parts of the USCTA are China's new comprehensive commitments on intellectual property and its new dispute resolution mechanism.

2. THE USCTA PROVIDES A DISPUTE RESOLUTION SYSTEM INDEPENDENT FROM THE WTO.

**CHI601 Daniel Chow, (Chair, Dept. of Business Law, Ohio State University), NOTRE DAME JOURNAL OF INTERNATIONAL AND COMPARATIVE LAW, 2021, p. 182. In contrast with the informality of prior arrangements, the USCTA has the formality and structure of a treaty and contains a new and path-breaking dispute resolution mechanism. Under all prior U.S. trade agreements, the parties submitted disputes to a neutral and independent arbitration tribunal or to the World Trade Organization (WTO). Under the USCTA, no third-party tribunal has been established, and no recourse to the WTO is possible.

3. THE USCTA GIVES THE U.S. ALMOST TOTAL POWER OVER CHINA ON IP DISPUTES.

Daniel Chow, (Chair, Dept. of Business Law, Ohio State University), NOTRE DAME JOURNAL OF INTERNATIONAL AND COMPARATIVE LAW, 2021, p. 183.

Under the USCTA, the United States has a unilateral right to declare China in breach of its treaty and WTO obligations. Moreover, under the USCTA, the United States also has the unilateral right to impose trade sanctions on China. The USCTA forbids China from retaliating against the United States and only allows China the option of withdrawing from the treaty. If China withdraws from the USCTA, however, the United States could reinstate the punitive tariffs that created the trade war that the USCTA suspended. Once the United States finds China in breach, China will have to suffer tariffs no matter what it decides. The United States will be able to impose tariffs on China either by invoking the USCTA dispute resolution mechanism or by reinstating the tariffs that the USCTA suspended.

4. THE USCTA BOXES CHINA INTO A CORNER ON IP ISSUES.

Daniel Chow, (Chair, Dept. of Business Law, Ohio State University), NOTRE DAME JOURNAL OF INTERNATIONAL AND COMPARATIVE LAW, 2021, p. 183.

If China finds itself trapped and seeks to raise a complaint in the WTO against the United States, China will find that such a recourse will be futile. Before entering into the USCTA, the United States had already paralyzed the WTO dispute settlement mechanism, hurling the WTO into a life-or-death crisis. The WTO was made to suffer this grievous blow because it committed the malfeasance of repeatedly ruling in WTO dispute settlement cases against the United States. China's only recourse is to go through the USCTA dispute resolution mechanism, which is under complete U.S. control, or to withdraw and suffer the consequences. The United States has boxed China into a no-win situation and has closed off all exits.

5. THE USCTA GIVES THE U.S. POWER OVER CHINA'S DOMESTIC LEGISLATION ON IP ISSUES.

Daniel Chow, (Chair, Dept. of Business Law, Ohio State University), NOTRE DAME JOURNAL OF INTERNATIONAL AND COMPARATIVE LAW, 2021, p. 185.

The USCTA presents an unprecedented opportunity to address these endemic issues because the United States can directly affect China's domestic legislation through the USCTA. Under the treaty, China has an obligation to implement legislation affecting the treaty provision or otherwise be subject to sanctions. While Phase I of the USCTA has now been completed, the United States and China are in the process of negotiating Phase II to address some of the remaining and most contentious issues that were left out of the earlier negotiations. The United States could include new provisions to address these corruption issues as an amendment or revision to the Phase I agreement or by new provisions in the Phase II agreement.

6. THE USCTA GIVES THE U.S. UNILATERAL POWER TO SANCTION CHINA.

Daniel Chow, (Chair, Dept. of Business Law, Ohio State University), NOTRE DAME JOURNAL OF INTERNATIONAL AND COMPARATIVE LAW, 2021, p. 186.

This article will proceed as follows. Part I examines the role of the USCTA in promoting IP protection in China. Learning from China's past failure to follow through on its IP commitments, the USCTA allows the United States to unilaterally declare China to be in breach of its USCTA and WTO obligations. The United States can also unilaterally impose sanctions on China, whose only recourse is to withdraw from the USCTA. As a matter of procedural law, the USCTA provides every possible advantage to the United States.

7. THE USCTA PROVIDES THE U.S. WITH THE ULTIMATE ENFORCEMENT MECHANISM.

Daniel Chow, (Chair, Dept. of Business Law, Ohio State University), NOTRE DAME JOURNAL OF INTERNATIONAL AND COMPARATIVE LAW, 2021, p. 205.

As a matter of procedural law, the United States created the ultimate enforcement weapon in the USCTA. The United States designed the dispute resolution mechanism to box China into a no-win situation. Once the United States finds China in breach, China will have to suffer tariffs under the USCTA or if China withdraws from the USCTA, China will suffer the reinstated tariffs that the USCTA suspended. As a matter of procedure, the USCTA is innovative and path breaking; it is also clever and ruthless.

Daniel Chow, (Chair, Dept. of Business Law, Ohio State University), NOTRE DAME JOURNAL OF INTERNATIONAL AND COMPARATIVE LAW, 2021, p. 192.

In the USCTA, the United States has now created an enforcement weapon for its IP rights against China that is far more potent than any that had previously existed. If the United States believes that China is in breach of any of the treaty's IP provisions or WTO obligations, the United States can act unilaterally to impose trade sanctions on China. The USCTA forbids China from retaliating and allows China only the option of withdrawing from the USCTA. If China does withdraw, however, then the punitive tariffs that the United States suspended as a result of the USCTA could be then be reinstated. China is now trapped in a no-win situation in which punitive tariffs will be imposed no matter what China chooses to do. China is also boxed into using the USCTA to resolve its disputes as going through the WTO has now become futile.

THE CONCERN THAT CHINA WILL OVERTAKE THE U.S. IN QUANTUM COMPUTING IS OVER-HYPED.

1. THE U.S. AND CHINA ARE ACTUALLY WORKING COLLABORATIVELY ON QUANTUM DEVELOPMENT.

Daniel Garisto, (Staff, Scientific American), CHINA IS PULLING AHEAD IN GLOBAL QUANTUM RACE, NEW STUDIES SUGGEST, July 15, 2021. Retrieved Apr. 25, 2022 from https://www.scientificamerican.com/article/china-is-pulling-ahead-in-global-quantum-race-new-studies-suggest/

Today hundreds of thousands of students travel from China to study in the U.S., and scientists in both countries collaborate closely on research ranging from agriculture to zoology. In spite of rising geopolitical tensions between the two countries, "they're each other's biggest international collaboration partners," Wang says.

2. CHINA IS NO FURTHER ALONG THAN THE U.S. IN QUANTUM COMPUTING.

Mark Herman, (Sr. Fellow, Hudson Institute), BOOZ ALLEN SOUNDS THE ALARM ON CHINA'S COMING QUANTUM HARVEST, Dec. 9, 2021. Retrieved Apr. 28, 2022 from https://www.forbes.com/sites/arthurherman/2021/12/09/booz-allen-sounds-the-alarm-on-chinas-coming-quantum-harvest/

Despite the huge amount of money and resources China has poured into the quantum effort (a $11 billion research facility in Anhui province, plus Ali Baba's $ 15 billion commitment); and the clear focus on quantum supremacy as a national priority, China is no further along than anyone else in creating the large-scale quantum computer that will be capable of cracking open existing public encryption systems. Booz Allen Hamilton's estimates of when to expect that breakthrough hover around 2030 and 2033 – no great surprise – although at least one expert touts it coming as early as the late 2020's. Others see nothing on the horizon until 2040.

3. QUANTUM COMPUTERS CANNOT YET PERFORM ANY USEFUL TASKS.

Sophia Chen, (Staff, The Verge), THE RACE IS ON FOR QUANTUM-SAFE CRYPTOGRAPHY, June 11, 2021. Retrieved Apr. 28, 2022 from https://www.theverge.com/22523067/nist-challenge-quantum-safe-cryptography-computer-lattice

While several companies like Google and IBM, along with startups such as IonQ and Xanadu, have built small prototypes, these devices cannot perform consistently, and they have not conclusively completed any useful task beyond what the best conventional computers can achieve. In 2019, Google reported that its quantum computer had solved a problem faster than the best existing supercomputers, but it was a contrived task with no practical application. And in 2020, academic researchers in China also reported their quantum computer had beat conventional computing in performing an algorithm that could offer utility for specialized optimization tasks. But so far, quantum computers have only managed to factor tiny numbers like 15 and 21 – a useful proof of principle, but far from a practical threat.

Nikita Gourianov, (Prof., Physics, Oxford U.), THE QUANTUM COMPUTING BUBBLE, Aug. 25, 2022. Retrieved Sept. 10, 2022 from https://www.ft.com/content/6d2e34ab-f9fd-4041-8a96-91802bab7765

There has been much controversy regarding where and when quantum computing can actually offer any practical advantage. The latest research points out that there is no evidence that even quantum chemistry calculations can be significantly sped up with quantum computers. That is bad news for the much-touted idea of quantum computers being useful for drug design. In essence, the quantum computing industry has yet to demonstrate any practical utility, despite the fanfare.

4. PHYSICISTS ARE UNCERTAIN THAT QUANTUM COMPUTERS WILL EVER SOLVE PRACTICAL PROBLEMS.

Katrina Manson, (Staff, Bloomberg News), PENTAGON'S OUTGOING DATA BOSS WARNS OF QUANTUM CYBER THREATS, Apr. 6, 2022. Retrieved Apr. 30, 2022 from https://www.unionleader.com/news/military/pentagons-outgoing-data-boss-warns-of-quantum-cyber-threats/article_ba1720d4-ddee-5f58-bacf-437d13aaf2bd.html

Joe Altepeter, who manages DARPA's new quantum project, told Bloomberg there was a lot of "hype" over industry claims about the arrival of quantum computing, with several "hardware miracles" still standing in the way. Some of the smartest physicists he knew were divided over whether useful quantum computing would ever exist, Altepeter said, adding that the risk was such that it was important to develop resilient systems.

Sankar Das Sarma, (Dir., Condensed Matter Theory Center, U. of Maryland), QUANTUM COMPUTING HAS A HYPE PROBLEM, Mar. 28, 2022. Retrieved Sept. 10, 2022 from https://www.technologyreview.com/2022/03/28/1048355/quantum-computing-has-a-hype-problem/

The qubit systems we have today are a tremendous scientific achievement, but they take us no closer to having a quantum computer that can solve a problem that anybody cares about. It is akin to trying to make today's best smartphones using vacuum tubes from the early 1900s. You can put 100 tubes together and establish the principle that if you could somehow get 10 billion of them to work together in a coherent, seamless manner, you could achieve all kinds of miracles. What, however, is missing is the breakthrough of integrated circuits and CPUs leading to smartphones—it took 60 years of very difficult engineering to go from the invention of transistors to the smartphone with no new physics involved in the process.

5. THE ERROR RATE FOR QUANTUM COMPUTERS IS VERY HIGH.

Victor Tangermann, (Staff, The Byte), OXFORD PHYSICIST UNLOADS ON QUANTUM COMPUTING INDUSTRY, SAYS IT'S BASICALLY A HYPE BUBBLE, Sept. 3, 2022. Retrieved Sept. 10, 2022 from https://futurism.com/the-byte/oxford-physicist-unloads-quantum-computing

Contemporary quantum computers are also "so error-prone that any information one tries to process with them will almost instantly degenerate into noise," [Oxford University physicist, Nikita Gourianov] wrote, which scientists have been trying to overcome for years.

Nikita Gourianov, (Prof., Physics, Oxford U.), THE QUANTUM COMPUTING BUBBLE, Aug. 25, 2022. Retrieved Sept. 10, 2022 from https://www.ft.com/content/6d2e34ab-f9fd-4041-8a96-91802bab7765

The reality is that none of these companies — or any other quantum computing firm, for that matter — are actually earning any real money. The little revenue they generate mostly comes from consulting missions aimed at teaching other companies about "how quantum computers will help their business", as opposed to genuinely harnessing any advantages that quantum computers have over classical computers. The simple reason for this is that despite years of effort nobody has yet come close to building a quantum machine that is actually capable of solving practical problems. The current devices are so error-prone that any information one tries to process with them will almost instantly degenerate into noise. The problem only grows worse if the computer is scaled up (ie, the number of "qubits" increased). A convincing strategy for overcoming these errors has not yet been demonstrated, making it unclear as to when — if ever — it will become possible to build a large-scale, fault-tolerant quantum computer.

6. QUANTUM COMPUTERS ONLY OPERATE IN NEAR-ABSOLUTE-ZERO CONDITIONS.

Tanmay Kadam, (Staff, Eurasian Times), OUTGUNNING THE US, CHINA LOOKS AT GAINING UNASSAILABLE LEAD IN QUANTUM TECH WITH NEW HELIUM COOLING SYSTEM, Apr. 5, 2022. Retrieved Apr. 29, 2022 from https://eurasiantimes.com/china-looks-at-gaining-lead-in-quantum-tech-with-new-helium/

China is striving to become a world leader in quantum technology through its national strategy of innovation-driven development. Last week, a team of researchers from Shanghai claimed to have developed a novel cooling system to create extremely low temperatures needed for quantum computers to function. The core components of most quantum machines – from computers to satellites – detect and manipulate subatomic particles that are easily disturbed by heat to store and process information and therefore these machines need to operate in conditions near absolute zero.

7. QUANTUM COMPUTERS LACK THE POWER TO BREAK ENCRYPTION CODES.

Kelley Sayler, (Analyst in Advanced Technology and Global Security, U.S. Congressional Research Service), DEFENSE PRIMER: QUANTUM TECHNOLOGY, April 5, 2022. Retrieved May 6, 2022 from https://sgp.fas.org/crs/natsec/IF11836.pdf

In addition, quantum computers could potentially decrypt classified or controlled unclassified information stored on encrypted media, allowing adversaries to gain access to sensitive information about U.S. military or intelligence operations. Some analysts note that significant advances in quantum computing would likely be required to break current encryption methods. Their estimates suggest that a quantum computer with around 20 million qubits would be required to break current encryption methods; however, the most advanced quantum computers today generally have no more than 256 qubits.

8. THE MONEY NOW BEING POURED INTO QUANTUM COMPUTING IS MOSTLY WASTED.

Nikita Gourianov, (Prof., Physics, Oxford U.), THE QUANTUM COMPUTING BUBBLE, Aug. 25, 2022. Retrieved Sept. 10, 2022 from https://www.ft.com/content/6d2e34ab-f9fd-4041-8a96-91802bab7765

As more money flowed in, the field grew, and it became progressively more tempting for scientists to oversell their results. With time, salesman-type figures, typically without any understanding of quantum physics, entered the field, taking senior positions in companies and focusing solely on generating fanfare. After a few years of this, a highly exaggerated perspective on the promise of quantum computing reached the mainstream, leading to a greed and misunderstanding taking hold and the formation of a classical bubble.

Nikita Gourianov, (Prof., Physics, Oxford U.), THE QUANTUM COMPUTING BUBBLE, Aug. 25, 2022. Retrieved Sept. 10, 2022 from https://www.ft.com/content/6d2e34ab-f9fd-4041-8a96-91802bab7765

Some physicists believe, in private, that there is no problem here: why not take advantage of the situation while it lasts, and take the easy money from the not-too-sophisticated investors? Earning a private-sector level salary whilst doing essentially academic research is a pretty good deal, after all. Well, when exactly the bubble will pop is difficult to say, but at some point the claims will be found out and the funding will dry up. I just hope that when the music stops and the bubble pops, the public will still listen to us physicists.

QUANTUM-SAFE ENCRYPTION METHODS ARE ALREADY NEARING DEPLOYMENT.

1. CRITICAL DEFENSE SYSTEMS ARE ALREADY PROTECTED BY QUANTUM-SAFE ENCRYPTION.

Richard Clarke & Robert Knake, (Official in charge of Cybersecurity Policy for President George W. Bush/Sr. Fellow, Council on Foreign Relations and Sr. Scientist, Northwestern U.), THE FIFTH DOMAIN: DEFENDING OUR COUNTRY, OUR COMPANIES, AND OURSELVES IN THE AGE OF CYBERTHREATS, 2019, 261.

Cryptologists, the mathematicians who live in the abstract world of codes, have seen the threat from quantum computing coming for years now. They have created quantum-resistant coding algorithms, systems of encryption that are more complex, some of which use entirely different approaches than long number factoring. It is a safe assumption that major governments have been using quantum-resistant encryption methods for some time.

2. ALL U.S. TECH COMPANIES ARE DEVELOPING QUANTUM-SAFE ENCRYPTION.

BBC (British Broadcasting Company), WHAT IS THE QUANTUM APOCALYPSE AND SHOULD WE BE SCARED?, Jan. 30, 2022. Retrieved Apr. 28, 2022 from Nexis Uni.

Tech giants like Google, Microsoft, Intel and IBM are working on solutions, as well as more specialist companies like Quantinuum and Post-Quantum. Most importantly, there is currently something of a post-quantum cryptography "beauty parade" taking place at the US National Institute for Science and Technology (NIST) just outside Washington DC.'

3. MANY CANDIDATES FOR QUANTUM-SAFE ENCRYPTION ARE NOW AVAILABLE.

Lindsay Rand, (Ph.D. Candidate, U. Maryland School of Public Policy), NOTRE DAME JOURNAL OF EMERGING TECHNOLOGY, Feb. 2022, 54.

Despite the challenges posed by quantum decryption, researchers have developed several viable candidates to replace current encryption standards that would be "quantum-safe." As quantum computing threatens to disrupt existing encryption standards, new methods for securing data have evolved. These methods, referred to as post-quantum encryption, have been under development by a narrow range of private sector actors and NIST. The goal for post-quantum encryption is to develop problem designs that could challenge even quantum computers.

M. Ramesh, (Staff, Business Line), BEWARE THE QUANTUM COMPUTERS, Apr. 11, 2021. Retrieved Apr. 29, 2022 from Nexis Uni.

In the post-quantum world, today's cryptography is a joke. It is against this backdrop that a fairly new area of expertise is gaining ground: 'Post-quantum cryptography (PQC)', sometimes called 'quantum-resistant cryptography'. This is the science of protecting your data even from the all-powerful quantum computers.

Mark Herman, (Sr. Fellow, Hudson Institute), BOOZ ALLEN SOUNDS THE ALARM ON CHINA'S COMING QUANTUM HARVEST, Dec. 9, 2021. Retrieved Apr. 28, 2022 from https://www.forbes.com/sites/arthurherman/2021/12/09/booz-allen-sounds-the-alarm-on-chinas-coming-quantum-harvest/

Fortunately, as we've illustrated with our Executive Guides to quantum technology, companies already exist in the U.S., Canada, Australia, and Europe that already offer solutions that are quantum-resistant and/or quantum-based, which can protect against present as well as future quantum cyber threats.

4. THE U.S. NATIONAL BUREAU OF STANDARDS IS PREPARING A UNIFORM QUANTUM-SAFE ENCRYPTION SYSTEM.

Liam Tung, (Staff, ZD Net), WHITE HOUSE: QUANTUM COMPUTERS COULD CRACK ENCRYPTION, SO HERE'S WHAT WE NEED TO DO, May 5, 2022. Retrieved May 6, 2022 from https://www.zdnet.com/article/quantum-computers-could-crack-encryption-warns-white-house-as-it-details-action-plan/

The directors of the National Institute of Standards and technology (NIST) and the National Security Agency (NSA) are developing standards for quantum-resistant cryptography. The first set of these standards are slated for public release by 2024. Within the next 90 days, the Secretary of Commerce will work with NIST to establish a working group involving industry, critical infrastructure and others on how to progress the adoption of quantum-resistant cryptography.

Katrina Manson, (Staff, Bloomberg News), PENTAGON'S OUTGOING DATA BOSS WARNS OF QUANTUM CYBER THREATS, Apr. 6, 2022. Retrieved Apr. 30, 2022 from https://www.unionleader.com/news/military/pentagons-outgoing-data-boss-warns-of-quantum-cyber-threats/article_ba1720d4-ddee-5f58-bacf-437d13aaf2bd.html

Among the efforts underway to bolster defenses against quantum-based attacks, the National Institute of Standards and Technology, known as NIST, is seeking to select new quantum-proof encryption algorithms from seven finalists shortly as part of a global competition. Jonathan Katz, computer science professor at the University of Maryland who submitted a "post-quantum algorithm" to the NIST competition, said the stakes in the NIST competition were high: an algorithm that later proved vulnerable would be "a disaster." Once a choice is made, the U.S. Department of Defense faces a huge task in upgrading all its software and hardware that features algorithms, he said, adding that included not only servers and laptops but also parts of submarines, tanks, helicopters and weapons systems.

Martyn Warwick, (Editor-in-Chief of TelecomTV), QUANTUM ALLIANCE INITIATIVE URGES US GOVERNMENT TO COLLABORATE ON UNIVERSAL QUANTUM COMPUTER R&D, Apr. 28, 2022. Retrieved May 6, 2022 from https://www.telecomtv.com/content/security/quantum-alliance-initiative-urges-us-government-to-collaborate-on-universal-quantum-computer-r-d-44308/

Currently, the US government is already planning for, and devoting resources to, systems that will enable and protect encrypted data, both strategic, tactical and commercial, against decryption by quantum computers belonging to “enemy states”, even though the devices do not as yet exist (allegedly). The National Institute of Standards and Technology (NIST), a part of the US Commerce Department, is one body already working on the problem of devising methodologies, technologies and standards that will guarantee encoded messages cannot be decoded by even the most powerful quantum computers.

Martyn Warwick, (Editor-in-Chief of TelecomTV), QUANTUM ALLIANCE INITIATIVE URGES US GOVERNMENT TO COLLABORATE ON UNIVERSAL QUANTUM COMPUTER R&D, Apr. 28, 2022. Retrieved May 6, 2022 from https://www.telecomtv.com/content/security/quantum-alliance-initiative-urges-us-government-to-collaborate-on-universal-quantum-computer-r-d-44308/

As the QAI prospectus states, a quantum computer can indeed pose a threat to national security as it exists right now, but quantum cybersecurity can provide a solution. That’s because it will “usher in an era of a nearly unhackable cyberspace through a layered approach of implementing quantum random numbers, quantum resistant algorithms, and quantum communication networks. Through a concerted effort to develop and implement quantum cybersecurity solutions, we can secure today’s most sensitive data from both current hackers and future quantum-enabled hackers, as well as protect vital infrastructure from the same threats.”

THE CHIPS AND SCIENCE ACT OF 2022 FULLY FUNDS QUANTUM COMPUTING RESEARCH.

1. THE CHIPS AND SCIENCE ACT OF 2022 IS NOW PUBLIC LAW.

Oliver Peckham, (Staff, Hewlett Packard), U.S. CHIPS AND SCIENCE ACT SIGNED INTO LAW, Aug. 8, 2022. Retrieved Sept. 21, 2022 from https://www.hpcwire. com/2022/08/09/us-chips-and-science-act-signed-into-law/

Just a few days after it was passed in the Senate, the U.S. CHIPS and Science Act has been signed into law by President Biden. In a ceremony today, Biden signed and lauded the ambitious piece of legislation, which over the course of the legislative process broadened to include hundreds of billions in additional science and technology spending.

2. THE CHIPS AND SCIENCE ACT PROVIDES FOR INVESTMENT IN QUANTUM COMPUTING RESEARCH.

Dario Gil, (Sr. Vice President & Director of Research at IBM), HOW THE CHIPS ACT SUPERCHARGES THE US QUANTUM INDUSTRY, Sept. 13, 2022. Retrieved Sept. 21, 2022 from https://thehill.com/opinion/technology/3640416-how-the-chips-act-supercharged-the-us-quantum-industry/

Much of the attention surrounding the recently passed CHIPS and Science Act focused on investments in the semiconductor industry, and rightly so — the bill made a historic down payment on chip manufacturing and innovation that will help strengthen supply chains and national security and restore American competitiveness and economic leadership for the future. But the CHIPS and Science Act also authorized substantial investments to accelerate other emerging technologies, like quantum computing, which can help solve some of the world's most complex problems faster and more efficiently than standard computers and is critical to our national security.

3. THE CHIPS AND SCIENCE ACT EXPANDS THE NATIONAL QUANTUM INITIATIVE (NQI)

Dario Gil, (Sr. Vice President & Director of Research at IBM), HOW THE CHIPS ACT SUPERCHARGES THE US QUANTUM INDUSTRY, Sept. 13, 2022. Retrieved Sept. 21, 2022 from https://thehill.com/opinion/technology/3640416-how-the-chips-act-supercharged-the-us-quantum-industry/

Passed in 2018 with strong support from both parties, the NQI authorized several major increases in support and goals, including an additional $1.25 billion of federal support for quantum efforts into the Department of Energy (DOE), National Science Foundation (NSF) and National Institute of Standards and Technology (NIST). At DOE, it authorized several new national quantum research centers, critically, with joint participation from private quantum companies. For NSF, it authorized several new university research and teaching programs on quantum technologies. NIST was able to build a broad industry consortium, the Quantum Economic Development Consortium or QED-C, to help drive new commercial prospects for quantum technologies. The NQI also aimed to trigger others in America to invest in quantum technologies, including universities and the private sector.

4. THE CHIPS AND SCIENCE ACT FUNDS MORE THAN 70 QUANTUM RESEARCH CENTERS.

Dario Gil, (Sr. Vice President & Director of Research at IBM), HOW THE CHIPS ACT SUPERCHARGES THE US QUANTUM INDUSTRY, Sept. 13, 2022. Retrieved Sept. 21, 2022 from https://thehill.com/opinion/technology/3640416-how-the-chips-act-supercharged-the-us-quantum-industry/

At DOE, over 70 parties are now part of the five national quantum research centers, including labs, universities and many private companies such as IBM (where one of us works as a senior vice president and director of research) Applied Materials and Goldman Sachs. The effort also triggered substantial additional industry and academic investment beyond the federal NQI funding. As a result, industry, national labs and others have achieved significant technological accomplishments, and many universities expanded degree programs for quantum technologies.

5. THE CHIPS AND SCIENCE ACT INCLUDES THE QUEST PROGRAM.

Dario Gil, (Sr. Vice President & Director of Research at IBM), HOW THE CHIPS ACT SUPERCHARGES THE US QUANTUM INDUSTRY, Sept. 13, 2022. Retrieved Sept. 21, 2022 from https://thehill.com/opinion/technology/3640416-how-the-chips-act-supercharged-the-us-quantum-industry/

But we can't stop there. The recently passed CHIPS and Science Act authorizes new efforts to advance quantum technologies and presents a new opportunity to double down on our advancements. For DOE, it creates two new efforts: the QUEST program will have DOE procure quantum computing capacity over the cloud for the use of science researchers. This $166 million purchase over five years, amounting to $33.2 million a year, is a good foundation to provide quantum computing capacity to researchers and help nurture the user community for quantum computing applications. The second DOE effort authorizes $500 million over five years to build large-scale quantum network infrastructure around the country.

Dario Gil, (Sr. Vice President & Director of Research at IBM), HOW THE CHIPS ACT SUPERCHARGES THE US QUANTUM INDUSTRY, Sept. 13, 2022. Retrieved Sept. 21, 2022 from https://thehill.com/opinion/technology/3640416-how-the-chips-act-supercharged-the-us-quantum-industry/

The NQI and investments under the CHIPS and Science Act and the QUEST program give us an important jump start. Growing the quantum industry to full capacity requires continuing to increase the level of focused investment in high-impact initiatives with ambitious national goals as outlined above.

Will Thomas, (Staff, American Institute of Physics), RESEARCH INFRASTRUCTURE INITIATIVES IN THE CHIPS AND SCIENCE ACT, Sept. 8, 2022. Retrieved Sept. 21, 2022 from https://www.aip.org/fyi/2022/research-infrastructure-initiatives-chips-and-science-act

Quantum networking: The CHIPS and Science Act builds on the National Quantum Initiative Act of 2018 through a series of provisions, including one that directs DOE to create a "quantum network infrastructure R&D program" with a funding target of $100 million per year. Managed within DOE's advanced scientific computing research program, the effort extends DOE's current work with industry and university partners to establish quantum communications links between its 17 national labs. Quantum user program: The new act also creates a "Quantum User Expansion for Science and Technology" (QUEST) program within DOE to provide researchers access to quantum computing infrastructure, with a funding target starting at $30 million and rising to more than $36 million by fiscal year 2027.

PHARMACEUTICAL PRICES ARE TOO HIGH

1. PATENTS ALLOW DRUG COMPANIES MONOPOLOY POWER TO INCREASE PRICES.

Ximena Benevides, (Lecturer, Dept. of Political Science, Yale U.), U. OF MICHIGAN JOURNAL OF LEGAL REFORM, Winter 2023, p. 490.

Although the patent system plays an important role in the development of groundbreaking medical treatments, the exchange balance may be too far in favor of drug companies. Patents permit them to keep drug prices "astronomically high," much higher than needed to fund future R&D and very much higher than drug manufacturing costs.

Anna Zhou, (JD), FORDHAM INTELLECTUAL PROPERTY, MEDIA, & ENTERTAINMENT LAW JOURNAL, Spr. 2023, p. 695.

Not only did AbbVie set a high initial price, it continues to raise prices the U.S. list price of Humira has nearly tripled between 2006 and 2017, marking an annual growth rate of over twelve percent a year. Because each additional year of exclusivity means that AbbVie can receive another year of large profit margins, AbbVie is hugely incentivized to extend their exclusivity for any time that they can. Since the regulatory exclusivity period is set by law, a drug manufacturer, like AbbVie, looks to patents to extend exclusivity. The accumulation of patents has paid off for AbbVie. It has fended off biosimilar challenges until 2023 almost a decade after the regulatory exclusivity period ended, and over half a decade after its key patents expired.

2. PHARMACEUTICALS ARE OFTEN PRICED AT OVER $100,000.

Bernie Sanders, (U.S. Sen., Vermont), NEW REPORT SHOWS HOW BADLY BIG PHARMA IS RIPPING OFF AMERICAN PEOPLE WITH PUBLICLY FUNDED MEDICATIONS, June 12, 2023. Retrieved Apr. 21, 2024 from https://www.sanders.senate.gov/press-releases/news-new-report-shows-how-badly-big-pharma-is-ripping-off-american-people-with-publicly-funded-medications/

With few exceptions, private corporations in the U.S. have the unilateral power to set the price of medicines, even when they are developed with taxpayer-funded research. The government asks for nothing in return for its investment. As a result, the average price of new treatments over the past 20 years that NIH scientists helped invent is $111,000 – more than ten times the price that led the NIH to first introduce a reasonable pricing clause in 1989.

3. AMERICANS DIE BECAUSE THEY CANNOT AFFORD MEDICATIONS.

Clovia Hamilton & Gerald Stokes, (Profs., Business Law, Indiana U.), NORTHWESTERN JOURNAL OF TECHNOLOGY & INTELLECTUAL PROPERTY, Nov. 2023, p. 76.

More than thirteen percent of American adults have reported knowing at least one person in the past five years who died after not receiving needed medical treatment due to inability to pay for the treatment. Further, the lockdowns during the pandemic also caused business closures and an increase in unemployment. Once some individuals lost their jobs, they lost their health care insurance.

4. PHARMACEUTICAL PRICES ARE FAR HIGHER IN THE U.S. THAN ELSEWHERE.

Clovia Hamilton & Gerald Stokes, (Profs., Business Law, Indiana U.), NORTHWESTERN JOURNAL OF TECHNOLOGY & INTELLECTUAL PROPERTY, Nov. 2023, p. 81.

The drug Humira can cost a consumer $2,669 per month in the United States, $1,362 in the United Kingdom ("U.K.") and $822 in Switzerland. Three million people suffer from Hepatitis C in the United States. The cost of the three-month course of Solvadi for Hepatitis C is $84,000. Interestingly, in India, a generic version costs $200. Furthermore, "[n]et prices for brand-name prescription drugs in the United States rose by 60% from 2007 to 2018."

PHARMACEUTICAL COMPANY PROFITS ARE MASSIVE

1. BIG PHARMA PROFITS ARE IN THE TRILLIONS OF DOLLARS.

Fred Ledley et al., (Prof., Applied Sciences, Bentley U. & Dir., Center for Integration of Science and Industry), U.S. TAX DOLLARS FUNDED EVERY NEW PHARMACEUTICAL IN THE LAST DECADE, Sept. 2, 2020. Retrieved Apr. 21, 2024 from https://www.ineteconomics.org/perspectives/blog/us-tax-dollars-funded-every-new-pharmaceutical-in-the-last-decade

The increase in pharmaceutical sales has also generated enormous profits for the pharmaceutical industry. In another study, we recently showed that from 2000 to 2018, 35 large pharmaceutical companies had cumulative revenue of $11.5 trillion and net income (earnings) of $1.9 trillion. Moreover, that study also showed that large pharmaceutical companies had median net income margins of 13.8%, significantly greater than those of other large corporations in the S&P 500 (7.7%) and similar to those of other research-driven companies.

2. BIG PHARMA PROFITS ARE ORDERS OF MAGNITUDE HIGHER THAN FOR OTHER MAJOR CORPORATIONS.

Abbey Meller, (Analyst, Center for American Progress), HOW BIG PHARMA REAPS PROFITS WHILE HURTING EVERYDAY AMERICANS, Aug. 30, 2019. Retrieved July 22, 2021 from https://www.americanprogress.org/issues/democracy/reports/2019/08/30/473911/big-pharma-reaps-profits-hurting-everyday-americans/

While consumers continue to pay the price of this market manipulation, a Government Accountability Office (GAO) report on the pharmaceutical industry found that these unfair practices are significantly enriching manufacturers. As the report stated, “Among the largest 25 companies, annual average profit margin fluctuated between 15 and 20 percent.” The GAO contextualizes these profits by comparing the pharmaceutical industry’s profits with those of its counterparts, stating that “the annual average profit margin across non-drug companies among the largest 500 globally fluctuated between 4 and 9 percent.”

Maura Nuno, (JD), CASE WESTERN RESERVE JOURNAL OF INTERNATIONAL LAW, Spr. 2016, 404.

Arguably, pharmaceutical companies also enjoy the highest profit margins on the market. For example, Pfizer, the world's largest pharmaceutical company, ended 2013 with a 42 percent profit margin.

3. BIG PHARMA REVENUE IS MORE THAN THE GDP OF A MAJORITY OF COUNTRIES.

Anand Grover, (Dir., HIV/AIDS Unit of the Lawyers Collective), JOURNAL OF LAW, MEDICINE, AND ETHICS, Summer 2012, 237.

For instance, in 2010 the revenues of Pfizer, the world's largest pharmaceutical company, were larger than the GDP of approximately two-thirds of the countries in the world.

4. IT IS THE PATENT SYSTEM THAT ENABLES MASSIVE DRUG COMPANY PROFITS.

Carolyn Maloney, (U.S. Rep., New York), UNSUSTAINABLE DRUG PRICES (PART III): TESTIMONY FROM ABBVIE CEO RICHARD GONZALEZ, May 18, 2021. Retrieved May 10, 2024 from https://www.govinfo.gov/content/pkg/CHRG-117hhrg44685/pdf/CHRG-117hhrg44685.pdf

Our investigation also uncovered evidence that AbbVie has exploited the U.S. patent system and engaged in anti-competitive practices to extend its monopoly pricing. The committee has obtained internal documents showing that AbbVie’s own executives projected its top-selling drug, Humira, would face competition from lower-priced versions of the drug, known as biosimilars, beginning in 2017. But AbbVie used legally questionable tactics to block lower-priced biosimilars from reaching America consumers until at least 2020. Those tactics made AbbVie a fortune, but cost Americans dearly.

PHARMACEUTICAL COMPANIES DO NOT USE THEIR PROFITS TO PROMOTE RESEARCH

1. PROFITS ARE USED FOR TV ADS, NOT ADDITIONAL RESEARCH.

Staff Report, U.S. Senate Committee on Health, Education, Labor & Pensions Committee, PUBLIC INVESTMENT, PRIVATE GREED, June 12, 2023. Retrieved June 12, 2023 from https://www.sanders.senate.gov/wp-content/uploads/Public-Medicines-Report-updated.pdf

The pharmaceutical industry says it needs astronomical prices and profits to protect innovation. But the top pharmaceutical corporations spent more on sales and marketing than research and development (R&D) every year from 1999 to 2018. Over the past decade, 14 major pharmaceutical corporations spent $87 billion more buying back stock and handing out dividends than investing in the development of new medicines.

2. HIGH PROFITS ARE USED TO CREATE MONOPOLY POWER.

Ximena Benevides, (Lecturer, Dept. of Political Science, Yale U.), U. OF MICHIGAN JOURNAL OF LEGAL REFORM, Winter 2023, p. 495.

A U.S. Government Accountability Office report revealed that the pharmaceutical industry is increasingly inclined to buy smaller firms to acquire knowledge about drugs already invented (and patented) and maximize returns by increasing medicine prices over a patent's lifetime while reducing research and trials investment risks.

3. HIGH PROFITS ARE USED TO SUPPORT LOBBYING.

Sharon Lerner, (Staff, The Intercept), BIG PHARMA PREPARES TO PROFIT FROM THE CORONAVIRUS, Mar. 13, 2020. Retrieved May 19, 2024 from https://theintercept.com/2020/03/13/big-pharma-drug-pricing-coronavirus-profits/

"Wouldn't it be great to have some of the profits from those drugs go back into public research at the NIH?" asked Posner. Instead, the profits have funded huge bonuses for drug company executives and aggressive marketing of drugs to consumers. They have also been used to further boost the profitability of the pharmaceutical sector. According to calculations by Axios, drug companies make 63 percent of total health care profits in the U.S. That's in part because of the success of their lobbying efforts. In 2019, the pharmaceutical industry spent $295 million on lobbying, far more than any other sector in the U.S.

4. BIG PHARMA PROFITS GO TO SHAREHOLDERS, NOT TO RESEARCH.

William Lazonick, (Analyst, New Institute for Economic Research), SICK WITH "SHAREHOLDER VALUE": US PHARMA'S FINANCIALIZED BUSINESS MODEL DURING THE PANDEMIC, Dec. 6, 2022. Retrieved Aug. 28, 2024 from https://www.ineteconomics.org/perspectives/blog/sick-with-shareholder-value-us-pharmas-financialized-business-model-during-the-pandemic

The corporate executives who signed the PhRMA letter contend that price regulation will reduce profits and stifle drug innovation. Negating this assumption, however, is abundant—and indeed overwhelming—evidence that most of these pharmaceutical executives allocate corporate profits to massive distributions to shareholders in the form of cash dividends and stock buybacks. Rather than devoting the high profits from high drug prices to augmenting and accelerating investment in drug innovation, US pharmaceutical companies burden US patients and taxpayers with high drug prices so that, through massive distributions to shareholders, the senior executives who make these allocation decisions can boost the yields on the companies' publicly traded shares.

THE FEDERAL GOVERNMENT FUNDS MOST PHARMACEUTICAL RESEARCH

1. ALMOST ALL PHARMACEUTICALS ARE DEVELOPED WITH FEDERAL FUNDING.

Fred Ledley et al., (Prof., Applied Sciences, Bentley U. & Dir., Center for Integration of Science and Industry), U.S. TAX DOLLARS FUNDED EVERY NEW PHARMACEUTICAL IN THE LAST DECADE, Sept. 2, 2020. Retrieved Apr. 21, 2024 from https://www.ineteconomics.org/perspectives/blog/us-tax-dollars-funded-every-new-pharmaceutical-in-the-last-decade

Amid debates over costs—and profits—from a coronavirus vaccine, a new study shows that taxpayers have been footing the bill for every new drug approved between 2010 and 2019.

Ekaterina Galkina Cleary, et al. (), Center for Integration of Science and Industry, Bentley University), JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION HEALTH FORUM, Apr. 4, 2024. Retrieved Apr. 21, 2024 from www.ncbi.nlm.nih.gov/pmc/articles/PMC10148199/

Funding from the NIH was contributed to 354 of 356 drugs (99.4%) approved from 2010 to 2019 totaling $187 billion, with a mean (SD) $1344.6 ($1433.1) million per target for basic research on drug targets and $51.8 ($96.8) million per drug for applied research on products.

2. THE FEDERAL GOVERNMENT PROVIDES HUNDREDS OF BILLIONS TO SUPPORT DRUG RESEARCH.

Abbey Meller, (Analyst, Center for American Progress), HOW BIG PHARMA REAPS PROFITS WHILE HURTING EVERYDAY AMERICANS, Aug. 30, 2019. Retrieved April 4, 2024 from https://www.americanprogress.org/issues/democracy/reports/2019/08/30/473911/big-pharma-reaps-profits-hurting-everyday-americans/

A 2018 study on the National Institute of Health's (NIH) financial contributions to new drug approvals found that the agency "contributed to published research associated with every one of the 210 new drugs approved by the Food and Drug Administration from 2010–2016." More than $100 billion in NIH funding went toward research that contributed directly or indirectly to the 210 drugs approved during that six-year period. The NIH Research Project Grant (R01) – which supports health-related research – was by far the most common kind of grant used to fund the science that supported the new drugs. In all, NIH gave out nearly 118,000 R01 grants related to those drugs from 2010 to 2016.

Abbey Meller, (Analyst, Center for American Progress), HOW BIG PHARMA REAPS PROFITS WHILE HURTING EVERYDAY AMERICANS, Aug. 30, 2019. Retrieved April 4, 2024 from https://www.americanprogress.org/issues/democracy/reports/2019/08/30/473911/big-pharma-reaps-profits-hurting-everyday-americans/

Billions of taxpayer dollars go into the creation and marketing of new drugs. The Los Angeles Times reports that, "Since the 1930s, the National Institutes of Health has invested close to $900 billion in the basic and applied research that formed both the pharmaceutical and biotechnology sectors." Despite taxpayers' crucial investment, U.S. consumers are increasingly paying more for their prescription drugs.

3. GOVERNMENT FUNDING MEANS THAT CONSUMERS MUST PAY TWICE FOR THEIR DRUGS.

Clovia Hamilton & Gerald Stokes, (Profs., Business Law, Indiana U.), NORTHWESTERN JOURNAL OF TECHNOLOGY & INTELLECTUAL PROPERTY, Nov. 2023, p. 103.

The United States heavily subsidizes the pharmaceutical industry with research funding and tax breaks. Critics call the phenomenon of high drug pricing "paying twice." The idea is that the United States federal government pays for the research and then a second pay out occurs through the purchase of market priced resulting drug products. This phenomenon is also called the privatization of federally funded research.

PHARMACEUTICAL PATENT PROTECTION UNDERMINES PUBLIC HEALTH

1. PATENTS INCREASE DRUG PRICES.

Ximena Benevides, (Lecturer, Dept. of Political Science, Yale U.), U. OF MICHIGAN JOURNAL OF LEGAL REFORM, Winter 2023, p. 487.

Evidence shows that IP law and patents have made drugs very expensive in the United States. Drugs are expensive not only because they are costly to produce, but also because the companies that benefit from patents are permitted to set prices. During the term of exclusivity, in the absence of competition, drug makers can essentially charge whatever prices they deem the market can bear and exclude generic manufacturers who promise lower costs. Patents can last decades and become monopolies in practice. During that time, commercial interests and financial returns mostly inform manufacturers' decisions rather than consumer-focused decisions such as the price and number of doses to produce.

Robert Pearl, (MD), WHY PATENT PROTECTION IN THE DRUG INDUSTRY IS OUT OF CONTROL, Jan. 19, 2017. Retrieved July 25, 2021 from https://www.forbes.com/sites/robertpearl/2017/01/19/why-patent-protection-in-the-drug-industry-is-out-of-control/

The intent of the patent process and the balance between the dual objectives have been warped over the past decade. Increasingly, drug companies are not investing in R&D proportional to the profits they earn from the drugs they bring to market, despite their protests to the contrary. Instead, many have figured out that it's simpler and safer from a financial perspective to either buy the rights to drugs developed by others and raise the prices many times over, as with Sovaldi, or to obtain a medication already in existence and, using monopolistic control, raise the price as much as 500% or more, as in the case of the EpiPen. As a consequence, the patent protection process now primarily serves the drug companies, most often not on behalf of the American people, but, rather, at their expense.

2. PATENTS LIMIT ACCESS TO VITAL VACCINES.

Andrew Mitchell et al., (Prof., Law, Monash U.), TULANE JOURNAL OF TECHNOLOGY & INTELLECTUAL PROPERTY, Spr. 2023, 10.

A patent gives its owner the exclusive right to make, use or sell the invented product or process specified in the patent. Vaccines and vaccine manufacturing processes are often subject to the protection of one or more patents. Thus, firms wishing to manufacture developed vaccines may encounter barriers to production where patents protect the vaccine and its production processes under the domestic law of the country where the firm seeks to exploit the invention. Equally, patent rights can prevent the importation of finished vaccines or production inputs where this occurs without the patent holder's authorization. Patents may also cover technologies and devices used to administer vaccines and technologies used for storage and delivery, so these also may need to be addressed to ensure effective vaccine access.

Brook Baker & Rachel Thrasher, (Prof., Law, Northeastern U. School of Law/ Researcher with the Boston University Global Development Policy Center's Global Economic Governance Initiative), BOSTON UNIVESITY INTERNATIONAL LAW JOURNAL, Spr. 2023, 2.

A global respiratory pandemic, COVID-19, has been met by an international legal and policy regime that instantiates closed science, intellectual property ("IP") monopolies, and privatized control over the testing, supply, price, and distribution of life-saving health technologies. As a result, we have had avoidable delays in biopharmaceutical preparedness, COVID-19 medical technologies that are not optimized for use in resource poor settings, inconclusive and non-comparative clinical evidence, artificially restricted supplies, needlessly high prices, and grotesquely inequitable distribution. IP right holders have preferentially and disproportionately supplied richer countries paying high prices at the same time that those countries have stockpiled excessive quantities of COVID-19 health technologies, resulting in what is now known as vaccine/therapeutic/diagnostic apartheid.

3. PATENTS RESTRICT ACCESS TO NECESSARY HEALTH CARE.

Lauren Luna, (JD), UNIVERSITY OF SOUTH FLORIDA LAW REVIEW, 2019, 367.

In a utopian world, there would be an even balance of patent rights and public health needs. Patent holders would be able to create and both reap the benefits of their invention and provide innovation that improves public health. Simultaneously, developing nations would have unlimited access to the products of the patent holders at lower-priced premium or have access to generic medicines. Unfortunately, that is not an option here, as there is an unsolvable tension between patent rights and public health access.

4. PATENTS UNDERMINE THE ABILITY TO DEAL WITH FUTURE PANDEMICS.

Smitha Gundavajhala, (JD Candidate), WASHINGTON JOURNAL OF LAW, TECHNOLOGY, AND THE ARTS, June 11, 2023, p. 75.

Patents can deprive countries of access to genetic technologies, which can have detrimental consequences during a pandemic or similar global health crisis. The filing of a patent, whether enforced or not, can in and of itself have anti-competitive effects on domestic production of genetic technologies. The very existence of a patent poses a threat of enforcement and can harm investments into local production of essential diagnostics and therapeutics.

5. PATENTS DENY ACCESS TO GENERIC DRUGS.

Smitha Gundavajhala, (JD Candidate), WASHINGTON JOURNAL OF LAW, TECHNOLOGY, AND THE ARTS, June 11, 2023, p. 75.

For instance, the existence of patents alone has delayed the entry of generic drugs into the U.S. healthcare system, costing the U.S. over $ 55 billion over the next 15 years.

6. PATENTS RESTRICT ACCESS TO BIOTECHNOLOGY IN THIRD WORLD COUNTRIES.

Smitha Gundavajhala, (JD Candidate), WASHINGTON JOURNAL OF LAW, TECHNOLOGY, AND THE ARTS, June 11, 2023, p. 83.

Patent protections can inhibit countries from producing diagnostics and therapeutics affordably and locally, creating reliance upon patent holders. Furthermore, current patent laws (TRIPS) and bilateral agreements (TRIPS-Plus) permit anticompetitive practices by biotechnology companies, which further inhibit access to and drive up prices of diagnostic and therapeutic applications of genetic technologies.

7. PATENTS STIFLE INNOVATION.

Husna Rizvi, (Staff, New Internationalist), WHAT IF . . . DRUG PATENTS WERE SCRAPPED?, June 24, 2020. Retrieved April 4, 2024 from https://newint.org/features/2020/06/11/what-if-drug-patents-were-scrapped

The pharmaceutical patents system is based on the belief that without patents, medical innovation will cease. But researchers have shown how firms stifle innovation, engaging in 'killer acquisitions' to buy up smaller innovative companies, solely to stop their drug development projects and remove future competition. It's a broken system, not delivering the drugs we need at prices we need. (ellipsis in original)

8. PATENTS GRANT MONOPOLOY POWER OVER MEDICINES.

Nan Lan, (JD Candidate, SMU School of Law), AMERICAN UNIVERSITY INTELLECTUAL PROPERTY BRIEF, Apr. 2020, p. 42.

The U.S. patent system enables pharmaceutical companies to extend their monopolies, which is a proximate cause of the high drug prices in the U.S. For example, Humira, one of AbbVie's most successful drugs, accounts for approximately 60% of AbbVie's annual revenue in 2018. As a result, AbbVie has obtained over 100 patents in on treatments related to Humira, therefore successfully extending its patent protection until the 2030s.

9. PATENTS SLOW THE RESPIONSE TO HEALTH EMERGENCIES.

Stephen Burany, (London-based Science Journalist), DRUG COMPANIES TOOK NONE OF THE RISKS TO DEVELOP THE COVID-19 VACCINE. THEY'RE GETTING ALL OF THE PROFITS, Apr. 29, 2021. Retrieved April 4, 2024 from https://www.jacobinmag.com/2021/04/covid-vaccines-patents-ip-bill-gates-big-pharma

Despite early suggestions that the knowledge and expertise required for mass production of vaccines would be widely shared, private industry has maintained control thanks to restrictive intellectual property laws designed to protect its profits – the result being a slowed rollout that puts private wealth ahead of human need, even as pharma companies reap the benefits from public subsidies and publicly funded scientific research.

Ximena Benevides, (Lecturer, Dept. of Political Science, Yale U.), U. OF MICHIGAN JOURNAL OF LEGAL REFORM, Winter 2023, p. 487.

Because medicines are life-changing and lifesaving, the risk of this protected invention model is that it creates harmful silos of market power that stand in the way of widespread, affordable, and timely access to high-quality medicine. "With rare exceptions, the set of entitlements" that patents and other IP laws create "has grown steadily and dramatically since the eighteenth century."

Ximena Benevides, (Lecturer, Dept. of Political Science, Yale U.), U. OF MICHIGAN JOURNAL OF LEGAL REFORM, Winter 2023, p. 489.

There is an obvious mismatch between the policy of vaccines as IP and policy for an effective pandemic response. While patents encourage needed invention and innovation during public health and life-threatening circumstances, they do not necessarily encourage technological expansion. Instead, patents – and, more specifically, the power which exclusivity rights confer to the patent holder – give big pharmaceutical companies incentives to stand in the way of quick and wide global vaccination. Instead of accelerating vaccine diffusion, patent tools favor global vaccination slowdown. These tools allow vaccine makers to block competitors and control how fast global vaccination occurs, while prioritizing fast returns – getting the vaccines to (some) markets faster.

Ximena Benevides, (Lecturer, Dept. of Political Science, Yale U.), U. OF MICHIGAN JOURNAL OF LEGAL REFORM, Winter 2023, p. 500.

As explained above, IP protections and patents are primary factors in vaccine production. These proprietary rights grant producers not only market power in the form of "temporary" market exclusivity but also political power. Patent holders control the production and price of patented products and the power to control – and maintain – the status quo and their elite position.

10. PATENTS DENY DRUG ACCESS TO POOR PEOPLE.

Nicole Hassoun, (Prof., Philosophy, Binghamton U.), JOURNAL OF LAW, MEDICINE, AND ETHICS, Summer 2016, 322.

Moreover, in general, patents do not really spur the kind of research and development necessary to address many pressing global health problems. Traditional patents give pharmaceutical companies an incentive to create products that treat, but do not cure, chronic diseases of rich patients. They can continue to sell such products to rich patients indefinitely. Companies have little incentive to address the diseases of the global poor. Poor people cannot pay much. Even with patents on important medicines, few are developed by companies aiming to capitalize on the incentive the patents create. Of the 1,393 medicines developed between 1975-1999, only 13 were for tropical diseases and, of these, two came from military research and five from veterinary research. From 2000-2009, 26 drugs for neglected disease secured worldwide marketing approval.

PHARMACEUTICAL PATENTS UNDERMINE THE RIGHT TO HEALTH

1. THERE OUGHT TO BE A RIGHT TO BASIC HEALTH CARE.

Briana Long, (JD Candidate), “Prioritizing Preparation: Ensuring Access to Health Care Through Hospitals' Stockpiling of Personal Protective Equipment,” WYOMING LAW REVIEW, 2021, 51.

Access to health care is an essential human right. While some Americans contest this statement, more than half of the world's countries formally recognize health care as a human right. After the severe nationwide impact of this pandemic on American citizens, the United States must reevaluate this omission of a fundamental right. By formally recognizing health care as a human right, the government would acknowledge its duty to provide Americans access to health care. This pandemic has highlighted the importance for all citizens, but especially health care providers, to be confident that their health is a priority to the government. Health care providers are the most critical component of saving lives in the health care system because they provide diagnoses, treatment, and care to patients.

2. THE RIGHT TO HEALTH CARE REQUIRES THE RIGHT OF ACCESS TO ESSENTIAL MEDICATIONS.

Brook Baker, (Prof., Law, Northeastern U. School of Law), NORTHEASTERN UNIVERSITY LAW REVIEW, Summer 2018, 696.

A human rights approach to access to medicines is founded on the right to health, which guarantees that people who need access to an essential medicine can have such access on a nondiscriminatory, equitable, and affordable basis no matter where they live or what their status. Historically, rich people in rich countries have had an "express lane" to the medicines that they need--research and development is focused on their health priorities and newly discovered medicines are rushed to their markets. In contrast, poorer people, especially those in LMICs, have had limited or no access to medicines focused on their priority needs to the newest medicines, to medicines well adapted to their circumstances, or to medicines that are affordable.

Henrik Andersen, (Prof., Law, Copenhagen Business School), UNIVERSITY OF THE PACIFIC LAW REVIEW, 2020, 452.

Access to medicine is a human right and is derived from Art. 12.1 of the International Covenant on Economic, Social and Cultural Rights ("ICESCR"): "The States Parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health." Access to medicine and health are fundamental rights in public international law.

Ezinne Mirian Igbokwe & Andrea Tosato, (Prof. Law, U. Nottinham/Prof., Law, U. Pensylvania Law School), FORDHAM LAW JOURNAL, April 2023, 1800.

The international human right to health has provided an even stronger platform for the development of access to medicines as a derivative human right. Numerous international law instruments expressly recognize a right to health. Mirroring the interpretive trajectory of the right to life, the right to health has been construed ever more broadly to include access to medicines. For example, article 12 of the International Covenant on Economic, Social and Cultural Rights states that individuals have a right to "the highest attainable standard of physical and mental health" and requires signatory countries to take the necessary steps for "[t]he prevention, treatment and control of epidemic, endemic . . . and other diseases." Providing the authoritative interpretation of this provision, the Committee on Economic, Social and Cultural Rights expressly specified that it includes a right to access "essential drugs" of appropriate quality, in sufficient quantities, and without discrimination. (ellipsis in original)

Nicole Hassoun, (Prof., Philosophy, Binghamton U.), JOURNAL OF LAW, MEDICINE, AND ETHICS, Summer 2016, 323-324.

Important medicines are important precisely because they are necessary for life and health, and people have rights to adequate protection of their ability to live reasonably healthy lives.

3. PATENTS DENY THE RIGHT OF ACCESS TO ESSENTIAL MEDICATIONS.

Anand Grover, (Dir., HIV/AIDS Unit of the Lawyers Collective), JOURNAL OF LAW, MEDICINE, AND ETHICS, Summer 2012, 247.

The global lack of access to medicines is one of world's most egregious ongoing human rights crises. Pharmaceutical companies, through their pricing practices and research and development priorities, play a central role in this global health emergency. The current global intellectual property regime contributes to this crisis by treating health as a commodity and prioritizing trade and intellectual property rights over health and human rights. As a result, millions of people lack access to life-saving drugs because they are too expensive or because they do not exist at all.

Nicole Hassoun, (Prof., Philosophy, Binghamton U.), JOURNAL OF LAW, MEDICINE, AND ETHICS, Summer 2016, 323.

On the standard view of obligations correlative to human rights, about which I will say more below, every agent has an obligation to refrain from violating rights. One does not have to hold that people have a human right to the highest attainable standard of health to accept the idea that extending intellectual property rights on important medicines and setting prices that make it very difficult for many poor people to access them violates rights to access these medicines. Nor need one agree that companies extending property rights on important medicines and setting high prices must ensure that as many people as possible have access to these medicines.

Robert Pearl, (MD), WHY PATENT PROTECTION IN THE DRUG INDUSTRY IS OUT OF CONTROL, Jan. 19, 2017. Retrieved April 4, 2024 from https://www.forbes.com/sites/robertpearl/2017/01/19/why-patent-protection-in-the-drug-industry-is-out-of-control/

Patent protection was never intended for use in a situation when human life would be endangered through its use. In other areas of society, broad legal prohibitions exist to protect human life and the well-being of citizens. For example, individuals are prohibited from yelling "Fire!" in a theater, and utility monopolies that control all of the electricity for a city are prohibited from price gouging. Patents make sense in a retail or manufacturing context. If you don't want to purchase Venetian glass, you can decide it’s too expensive. In contrast, if your child is born with a genetic defect, you have no choice but to obtain the medication available for treatment regardless of price.

Peter Yu, (Prof., Law, Drake U. Law School), ARIZONA STATE LAW JOURNAL, Winter 2013, 1572.

As the Joint United Nations Programme on HIV/AIDS ("UNAIDS") lamented in its 2010 report, about two-thirds of the estimated fifteen million people living with HIV in less developed countries have no access to affordable life-saving medications. Such limited access has renewed fears that the disease will continue to plague the globe for decades to come. Of great importance in the intellectual property arena are issues concerning access to essential medicines – and in this case, access to HIV/AIDS antiretrovirals. The arrival of the TRIPS Agreement in 1994 has greatly curtailed the ability of less developed countries to manufacture affordable generic medicines.

THE PROBLEM OF COUNTERFEIT DRUGS IS NOT SOLVED BY STRONGER IP PROTECTION

1. PHARMACEUTICAL COMPANIES ARE THEMSELVES RESPONSIBLE FOR THE COUNTERFEIT DRUG PROBLEM – ASTRONOMICAL DRUG PRICES ARE TO BLAME.

Maura Nuno, (JD), CASE WESTERN RESERVE JOURNAL OF INTERNATIONAL LAW, Spr. 2016, 408.

Disproportionately high prices and limited access to name brand medicines exacerbate the counterfeit drug market problem. The WHO explains, "[w]hen prices of medicines are high and price differentials between identical products exists there is a greater incentive to supply cheap counterfeit medicines." The counterfeit drug market functions by supplying counterfeit drugs through traditional distribution channels or directly to consumers.

2. IP PROTECTION DOES NOT PROVIDE ANY GUARANTEE OF SAFETY.

Cynthia Ho, (Prof., Law, Loyola U. Chicago School of Law), FORDHAM INTERNATIONAL LAW JOURNAL, Dec. 2011, 13.

Drugs may be substandard (poor quality) if they fail to meet scientific specifications, or have become contaminated. Alternatively, fake drugs contain ingredients different than indicated on the label, or no active ingredient at all. However, patent and trademark requirements are not relevant to safety issues. A patent can be granted on a drug without any evidence that it is safe or effective since the patent standards do not require evaluation of such concepts. Similarly, a trademark signifies that a product is from a particular source to help guarantee consistency, but does not guarantee safety or efficacy since these are not requirements for trademark protection.

3. MOST SO-CALLED “COUNTERFEIT” DRUGS ARE REALLY JUST GENERIC VERSIONS OF NAME-BRAND PHARMACEUTICALS.

Cynthia Ho, (Prof., Law, Loyola U. Chicago School of Law), FORDHAM INTERNATIONAL LAW JOURNAL, Dec. 2011, 50.

Generic medicines neither infringe on intellectual property nor are dangerous. Generic medicines are "not substandard or illegal." Rather, generic drugs are by definition legal drugs that have been properly evaluated and certified as being equivalent in safety and efficacy to the original brand name version. EU claims about saving lives are a transparent attempt to misrepresent the facts; in none of the cases of seized drugs was quality an issue. This underscores that the EU is not truly worried about quality; rather, their concern is in overzealous enforcement of EU patents. The EU Regulation is a thinly disguised trade barrier that protects the European pharmaceutical industry while undermining the Indian generics industry.

Cynthia Ho, (Prof., Law, Loyola U. Chicago School of Law), FORDHAM INTERNATIONAL LAW JOURNAL, Dec. 2011, 50.

Counterfeit drugs are ones that improperly use the trademark of another; they may pose health risks if they are substandard drugs, but the word counterfeit by itself does not mean that the drug is of poor quality.

4. STRONGER IP PROTECTION WON’T STOP COUNTERFEIT DRUGS.

Hannah Jarrells, (JD), GEORGIA JOURNAL OF INTERNATIONAL AND COMPARATIVE LAW, 2015, 571.

As discussed above, the dangerous counterfeit-drug problem in sub-Saharan Africa generally does not involve patent infringing products. Therefore, anti-counterfeit legislation addressing pharmaceutical products imported into or manufactured in sub-Saharan Africa should not be focused on intellectual property considerations.

INCREASING THE POWER OF THE PATENT TRIAL AND APPEAL BOARD (PTAB) IS A MISTAKE

1. THE PTAB HAS BEEN CAPTURED BY WELL-FUNDED BIG TECH COMPANIES.

Adam Mossoff, (Prof., Law, George Mason University School of Law), BIG TECH'S ABUSE OF PATENT OWNERS IN THE PTAB MUST END, June 9, 2023. Retrieved May 10, 2024 from https://www.heritage.org/sites/default/files/2023-06/LM336.pdf

The PTAB [Patent Trial and Appeal Board] has thus come to serve a key role in the rise of predatory infringement by large, well-funded Big Tech companies that try to steal technologies owned by inventors or small businesses. Predatory infringement (also called 'efficient infringement' by policy wonks) occurs when a company determines that it 'economically gains from deliberately infringing patents' because the company ultimately will pay less in legal fees in either forcing settlements or in easily petitioning the PTAB to invalidate patents than in paying patent owners for licenses. Predatory infringement is a successful strategy because it is now incredibly uncertain and expensive for patent owners to file infringement lawsuits due to a host of changes to the patent system during the past 15 years, including the additional costs of defending one's patent at the PTAB. It is estimated that a PTAB proceeding costs between $300,000 and $600,000, not including the inevitable court appeals that follow such a proceeding."

2. THE PTAB WORKS TO THE DISADVANTAGE OF SMALL BUSINESSES AND INNOVATORS.

Kevin Riley, (U.S. Representative from California), AMERICA CAN DEFEAT CHINA AND WIN THE FUTURE IF WE DO THIS ONE THING, Apr. 14, 2023. Retrieved May 10, 2024 from https://www.foxnews.com/opinion/america-can-defeat-china-win-future-if-we-one-thing

Meanwhile, administrative processes at the U.S. Patent and Trademark Office are creating headaches and worse for innovators seeking to defend their patents. A quasi-judicial administrative body within USPTO – the Patent Trial and Appeal Board, or PTAB – has become a favored forum for companies to challenge the validity of patents they are accused of infringing. This works to the disadvantage of inventors and small businesses who must defend their IP in court and the PTAB simultaneously, reducing the incentive to invent in the first place.

3. THE PTAB USES VAGUE STANDARDS TO INVALIDATE TOO MANY PATENTS.

Josh Malone, (Analyst, U.S. Inventors), HOW THE PATENT TRIAL AND APPEAL BOARD DISPROPORTIONATELY HARMS PRACTICING SMALL ENTITIES, July 6, 2024. Retrieved Aug. 29, 2024 from https://usinventor.org/how-the-patent-trial-and-appeal-board-disproportionately-harms-practicing-small-entities/

Unpredictability in Patent Trial and Appeal Board (PTAB) proceedings is paralyzing inventors who cannot obtain investment to develop and manufacture inventions or obtain licenses to commercialize them. At the PTAB, burdens of proof are reduced while subjective determinations are calibrated to err on the side of invalidation. Specifically the "reasonable likelihood" standard for institution is vague and readily achieved by an expert declaration that combining several pieces of prior art "would have been obvious" under the Supreme Court's KSR precedent. Once a trial is instituted, challengers need prove invalidity by only a preponderance of evidence. PTAB judges have interpreted these provisions of the AIA as removing the presumption of validity and have oriented their decision-making toward invalidation whereby patent owners lack any viable defense against an obviousness argument, rendering invalid 84% patents subject to a final written decision.

PRESERVING FINTIV DENIALS IS JUSTIFIED

1. FINTIV DENIAL OF PTAB REVIEW IS PROPER BECAUSE IT AVOIDS DUPLICATION.

Greg Reilly, (Prof., Law, Chicago-Kent College of Law), CONNECTICUT LAW REVIEW, May 2023, p. 623.

Another consideration the AIA balances against the need to eliminate "bad" patents is avoiding duplicative proceedings, which create inefficiency and potential burden and harassment of patent owners. Duplicative proceedings can also result in inconsistent decisions, typically (because of the higher burden of proof in litigation) where the PTAB invalidates a patent that the district court previously upheld.

Greg Reilly, (Prof., Law, Chicago-Kent College of Law), CONNECTICUT LAW REVIEW, May 2023, p. 625.

The Patent Office's Fintiv discretionary denial practice reasonably implements this statutory objective by specifically trying to avoid duplication with pending litigation that may resolve before or near the time of the IPR [inter partes review] decision. To be fair, the AIA seeks to channel patent validity questions away from the courts and to the expertise of the PTAB, such that IPRs "serve as a substitute for Article III litigation over patent validity." Fintiv discretionary denials flip this objective by allowing litigation to substitute for PTAB review, channeling invalidity challenges away from the expertise of the PTAB and to the courts. But it is the practices of federal courts, not the Patent Office, that prevent IPRs from substituting for litigation validity determinations.

2. DUPLICATIVE PROCEEDINGS ARE UNREASONABLY COSTLY.

Greg Reilly, (Prof., Law, Chicago-Kent College of Law), CONNECTICUT LAW REVIEW, May 2023, p. 629.

First, IPRs [inter partes review] were intended to be a cheaper means of invalidating patents than litigation, and they are undoubtedly cheaper as an alternative to litigation. However, IPRs are not cheap in absolute terms, with average costs of IPR, when granted, estimated at over $ 300,000 per party. When IPRs substitute for invalidity litigation, which can average at least $ 950,000 per party, this cost is well-justified. But when IPRs proceed in parallel with litigation, the IPR cost is merely tacked on to the already-high cost of patent litigation, raising litigation costs and creating inefficiency contrary to the AIA's goal of more efficient resolution. Indeed, general litigation procedural principles and tools recognize that litigating the same or related issues simultaneously in multiple tribunals is difficult and costly and, like the Fintiv practice, seek to avoid doing so. Fintiv denials may introduce additional costs in the IPR petitioning process, but these pale in comparison to the additional costs imposed by conducting an IPR in parallel with district court litigation. Fintiv denials thus promote more efficient dispute resolution.

3. DUPLICATIVE PROCEEDINGS CAUSE COURT CLOG.

Yegina Whang, (JD Candidate, U. California at Berkeley School of Law), BERKELEY TECHNOLOGY LAW JOURNAL, 2021, p. 1509.

With increasingly overcrowded dockets and limited resources, the American judicial system decided to adopt preclusion for two reasons: to promote finality and to preserve judicial resources. First, by preventing disgruntled litigants from taking a second bite of the proverbial apple, preclusion protects parties from duplicative and vexatious litigation and lends confidence to a court's decision as final. Second, while finality focuses on the parties directly involved in the suit, judicial economy focuses on society's desire for efficiency. With the ever-increasing rise in litigation, society has a great interest in "seeing that cases are tried just once" so that judges can adjudicate more cases fairly, accurately, and quickly.

THE PROBLEM OF PATENT TROLLS IS EXAGGERATED

1. MOST SO-CALLED TROLLS ARE LEGITIMATE BUSINESSES TRYING TO PROTECT THEIR INTERESTS.

Paul Michel & Matthew Dowd, (Former Chief Judge of the U.S. Court of Appeals for the Federal Circuit/Patent Attorney), DRAKE LAW REVIEW, 2021, p. 28.

Peter Detkin, former in-house counsel for Intel, is frequently named as the creator of the term patent troll. It is a clearly pejorative term, not too different than "ambulance chaser," as it seeks to denigrate the party seeking to enforce the patent right, rather than questioning the validity of the patent right itself. It is true that, in the late 1990s and early 2000s, there was an uptick in patent-enforcement actions seeking nuisance-value settlements, particularly against retailers and other end-users of technologies. But those instances were far outweighed by the efforts of legitimate companies seeking to enforce valid patent rights.

2. THE ECONOMIC HARM FROM PATENT TROLLS IS EXAGGERATED.

Paul Michel & Matthew Dowd, (Former Chief Judge of the U.S. Court of Appeals for the Federal Circuit/Patent Attorney), DRAKE LAW REVIEW, 2021, p. 4.

After the Supreme Court's renewed interest in patent law, the concerted lobby effort got underway to enact so-called "patent reform." Much of the legislation was supported by very discrete interest groups, some of which were well-funded by the major Silicon Valley corporations. The rallying cry was that business method patents and patent trolls were a multi-billion-dollar drain on the economy, even though little economic evidence supported such broad-brush claims.

3. MANY NON-PRACTICING ENTITIES ARE ACTUALLY QUITE LEGITIMATE UNIVERSITY-BASED RESEEARCHERS.

Paul Michel & Matthew Dowd, (Former Chief Judge of the U.S. Court of Appeals for the Federal Circuit/Patent Attorney), DRAKE LAW REVIEW, 2021, p. 28.

Moreover, the term patent troll soon came to cover any non-practicing entity seeking to license patents. In other words, if one was an inventor but did not manufacture or commercialize one's invention, then one might be called the dreaded patent troll. Any inventor or innovative entity could be labeled a patent troll: a university that created ground-breaking research but licensed its patented technology or an independent inventor whose invention had been stolen by a large corporation and needed financial backing to enforce her patent rights.

4. THERE ARE VERY FEW INSTANCES OF ILLEGITIMATE DEMAND LETTERS.

Paul Morinville, (Former President, U.S. Inventor, Inc.), HOW THE AMERICA INVENTS ACT HARMED INVENTORS, Sept. 10, 2016. Retrieved Feb. 20, 2024 from https://ipwatchdog.com/2016/09/10/america-invents-act-harmed-inventors/id=72551/

After several months of investigation, the NY AG found six examples of nefarious demand letters in a multi-month nationwide search. That’s right – six – only six. Yet the patent troll remained the narrative driving the passage of the AIA and is still the narrative of the infringer lobby in their effort to pass the Innovation Act. That is because it is really just a smokescreen, a red herring based on slivers of truth and dressed out with unsubstantiated false allegations that is intended to mystify the true nature of patent reform. This smokescreen provided cover for lawmakers to pass the AIA and effectively transfer the property rights of small inventors to the large multinational corporations led by Google, the same multinationals who paid for it in Washington.

ONLY "PERSONS" SHOULD BE GIVEN PATENT PROTECTION

1. THE VERY NAME "INTELLECTUAL PROPERTY" REFERS TO CREATIONS OF THE HUMAN MIND.

Andres Guadamuz, (Prof., Law, U. of Sussez & Editor, Journal of World Intellectual Property). ARTIFICIAL INTELLIGENCE AND INTELLECTUAL PROPERTY, 2021, p. 154.

Intellectual property is specifically directed towards the protection of the fruits of the human mind, and these works are given a set of limited ownership rights allocated to persons, both natural and legal. Because of the personal nature of this type of protection, there is no such thing as non-human intellectual property rights.

2. AI IS ONLY A TOOL – THE HUMAN CREATOR IS THE ONE THAT SHOULD HAVE THE PATENT.

Dan Burk, (Prof., Law, U. California at Irvine), THE FUTURE OF INTELLECTUAL PROPERTY, 2021, p. 148.

The qualities of AI innovation that have been said to challenge the tenets of patenting are based on a category mistake, confusing the tool with the user. No one would seriously assert that the drill or screwdriver, much less the hydrocarbon cracking refinery or chromatographic column that is used to construct an invention is an inventor, or even co-inventor with the human deploying the equipment.

3. THERE IS NO EVIDENCE THAT THE ABSENCE OF PATENT PROTECTION HOLDS BACK AI CREATION.

Reto Hilty et al., (Dir., Max Planck Institute for Innovation and Competition). ARTIFICIAL INTELLIGENCE AND INTELLECTUAL PROPERTY, 2021, p. 62.

It has been claimed that the (human) programmers need to obtain rights to the results generated by AI, because programming would not be undertaken if third parties could immediately free ride. However, no evidence supports this assumption, and in any case it does not substantively go beyond the mere reiteration of theoretical, abstract lines of IP reasoning.

4. AI DOES NOT REQUIRE FINANCIAL INCENTIVES AS A REASON TO INVENT.

Joe Mullin, (Sr. Policy Analyst, Electronic Frontier Foundation), STUPID PATENT OF THE MONTH: TRYING TO GET U.S. PATENTS ON AN AI PROGRAM, Apr. 28, 2023. Retrieved May 10, 2024 from https://www.eff.org/deeplinks/2023/04/stupid-patent-month-trying-get-us-patents-ai-program

Only people can get patents. There's a good reason for that, which is that the patent grant – a temporary monopoly granted by the government – is supposed to be given out only to 'promote the progress of science and useful arts.' Just like monkeys can't get a copyright on a photo, because it doesn't incentivize the monkey to take more photos, software can't get patents, because it doesn't respond to incentives. Stephen Thaler hasn't gotten this memo, because he's spent years trying to get copyrights and patents for his AI programs. And people do seem intrigued by the idea of AI getting intellectual property rights. Thaler is able to get significant press attention by promoting his misguided legal battles to get patents, and he has plenty of lawyers around the world interested in helping him.

AI IS DEVELOPING RAPIDLY NOW

1. AI IS GROWING EXPONENTIALLY NOW.

Andy Stern, (Senior Fellow, Columbia University's Richman Center), RAISING THE FLOOR: HOW A UNIVERSAL BASIC INCOME CAN RENEW OUR ECONOMY AND REBUILD THE AMERICAN DREAM, 2016, 57-58.

"An analysis of the history of technology shows that technological change is exponential, contrary to the common-sense 'intuitive linear' view. So we won't experience 100 years of progress in the twenty-first century—it will be more like 20,000 years of progress (at today's rate). The returns, such as chip speed and cost-effectiveness, also increase exponentially. There's even exponential growth in the rate of exponential growth. Within a few decades, machine intelligence will surpass human intelligence, leading to the Singularity—technological change so rapid and profound it represents a rupture in the fabric of human history. The implications include the merger of biological and non-biological intelligence, immortal software-based humans, and ultra-high levels of intelligence that expand outward in the universe at the speed of light."

2. AI SYSTEMS ARE SELF-LEARNING.

David Barnhizer & Daniel Barnhizer, (Prof., Law, Emeritus, Cleveland State U./Prof., Law, Michigan State School of Law), THE ARTIFICIAL INTELLIGENCE CONTAGION, 2019, 177-178.

An intriguing question involves the implications of self-learning by AI systems. Even if we successfully program self-learning AI systems at the beginning, doesn't their learning potential include the ability to acquire added knowledge and insights from "The Cloud" and other information storage systems by way of linked communication systems that the AI brains develop either through our programming or on its own? I suspect this information acquisition about human reality is not a small matter and becomes quite significant if AI systems learn how to reprogram themselves. As to imbuing AI systems with ethics, emotions and decision-making power in "gray areas," we humans have constant problems with our own moral and ethical dilemmas and have still failed to "get it right" after millennia. It is delusional to think we are capable of resolving such issues for AI systems since we don't even know how to be consistently ethical or moral ourselves.

3. AI BREAKTHROUGHS ARE HAPPENING RAPIDLY NOW.

Ryan Dowell, (JD Candidate), "Fundamental Protections for Non-Biological Intelligences or: How We Learn to Stop Worrying and Love Our Robot Brethren," MINNESOTA JOURNAL OF LAW, SCIENCE, AND TECHNOLOGY, Winter 2018, 307.

Over the past decade, breakthroughs in AI development have driven a surge likened to a gold rush. Some metrics show AI performance growing nearly fifty times over three years to reach "superhuman" capabilities. AI has accomplished landmark feats that had long eluded researchers, and did so years ahead of most estimated timelines.

4. IF ANYTHING, AI DEVELOPMENT IS TOO RAPID AT PRESENT.

Steve Rose, (Staff, The Guardian), FIVE WAYS AI MIGHT DESTROY THE WORLD: 'EVERYONE ON EARTH COULD FALL OVER DEAD IN THE SAME SECOND', July 7, 2023. Retrieved Apr. 21, 2024 from https://www.theguardian.com/technology/2023/jul/07/five-ways-ai-might-destroy-the-world-everyone-on-earth-could-fall-over-dead-in-the-same-second

Artificial intelligence has progressed so rapidly in recent months that leading researchers have signed an open letter urging an immediate pause in its development, plus stronger regulation, due to their fears that the technology could pose "profound risks to society and humanity".

THE U.S. LEADS THE WORLD IN ARTIFICIAL INTELLIGENCE RESEARCH AND DEVELOPMENT.

1. THE U.S. LEADS THE WORLD IN THE COMMERCIALIZATION OF AI.

Kateryna Meleshenko, (PhD in Engineering; Technology Consultant, Intersog GLOBAL AI RACE: DOMINANT PLAYERS AND ASPIRING CHALLENGERS, June 26, 2023. Retrieved Apr. 21, 2024 from https://intersog.com/blog/ai-dominant-players-and-aspiring-challengers/

The United States is leading in the commercialization of AI and has no direct competition in this field. China is the closest country to the USA but is 66% behind. The three following countries are Israel, the United Kingdom, and Singapore; their commercial scores are lower than 30.

2. THE U.S. HAS THE WORLD BEST BUSINESS ENVIRONMENT FOR THE DEVELOPMENT OF AI.

Kateryna Meleshenko, (PhD in Engineering; Technology Consultant, Intersog GLOBAL AI RACE: DOMINANT PLAYERS AND ASPIRING CHALLENGERS, June 26, 2023. Retrieved Apr. 21, 2024 from https://intersog.com/blog/ai-dominant-players-and-aspiring-challengers/

The United States and China demonstrate the best technical, financial, and social environment for AI growth, although the USA is far ahead. While these countries do not face stiff competition from other countries, many countries still have huge potential in the AI field.

3. LEADING AI RESEARCHERS ARE BASED IN THE U.S.

Tim Keary, (Technology Specialist, Techopedia), TOP 10 COUNTRIES LEADING IN AI RESEARCH & TECHNOLOGY IN 2024, Apr. 9, 2024. Retrieved Apr. 21, 2024 from https://www.techopedia.com/top-10-countries-leading-in-ai-research-technology

Today, the US is the most prolific country in AI research, with Macro Polo finding almost 60% of “top tier” AI researchers work for American universities and companies, and Mirae Assets suggesting $249 billion in private funding has been raised to date. Silicon Valley alone is the home of some of the most prominent vendors in the industry, including OpenAI, Google, Meta, and Anthropic, who’ve contributed to leading products, including GPT-4, DALL E-3, Gemini, Llama 2, and Claude 3. At this stage in the market’s development, GPT-4 is undoubtedly the golden goose of the AI race, achieving 100 million weekly active users. AI investment in the region is extremely strong – with the U.S. raising $31 billion in funding across 1,151 deals in 2023.

Tim Keary, (Technology Specialist, Techopedia), TOP 10 COUNTRIES LEADING IN AI RESEARCH & TECHNOLOGY IN 2024, Apr. 9, 2024. Retrieved Apr. 21, 2024 from https://www.techopedia.com/top-10-countries-leading-in-ai-research-technology

The next most significant contributor to AI research is China, which has 11% of top-tier AI researchers (Macro Polo), 232 AI-related investments in 2023, and has raised $95 billion in private investment between 2022 and 2023, according to Mirae Assets.

Kateryna Meleshenko, (PhD in Engineering; Technology Consultant, Intersog GLOBAL AI RACE: DOMINANT PLAYERS AND ASPIRING CHALLENGERS, June 26, 2023. Retrieved Apr. 21, 2024 from https://intersog.com/blog/ai-dominant-players-and-aspiring-challengers/

According to the provided dataset, the United States is the top country in the number of AI talents (an average score of all factors is 100). The following country with the lower score is India (a score of 45,3). The other three countries in the top-5 countries with skilled practitioners in AI are Great Britain, Singapore, and Israel, with almost equal scores (~40).

4. MOST AI INVESTMENT IS COMING FROM THE U.S.

Homeland Security Today, U.S. LEADS THE WORLD IN AI BUSINESS INVESTMENT, GLOBAL DATA REVEALS, Jan. 24, 2024. Retrieved Apr. 21, 2024 from https://www.hstoday.us/subject-matter-areas/ai-and-advanced-tech/us-leads-the-world-in-ai-business-investment-global-data-reveals/

AI statistics from AIPRM, has found that the United States is the country investing the most in AI, with $328,548 million spent in the last five years. They have invested $67,911 million in 2023 alone, a 65.94% increase from that of 2019. China places second with $132,665 million spent on AI between 2019 to 2023, around 60% less than the United States. The country's investment in AI has been slowing down since 2019, totaling $15,071 million in 2023, about a third less than their spending in 2019.

Tim Keary, (Technology Specialist, Techopedia), TOP 10 COUNTRIES LEADING IN AI RESEARCH & TECHNOLOGY IN 2024, Apr. 9, 2024. Retrieved Apr. 21, 2024 from https://www.techopedia.com/top-10-countries-leading-in-ai-research-technology

This article will examine the top 10 countries based on rankings from the Global AI Index, Mirae Assets's Global X AI investment survey, Stanford's Artificial Intelligence Index Report, and findings from CBInsights to give our verdict on their performance. The rankings in this article are loosely based on the overall innovation in the country's AI research and development, startup community, the value of private investment, and government spending. From the United States to Singapore, this article takes a top-down look at the top 10 countries leading in AI research and technology as of 2024. The US leads the way, with almost 60% of "top tier" AI researchers and $249 billion in private funding. China and the UK round out the top three, with Israel and Canada following closely behind.

5. ALL OF THE INDUSTRY LEADERS IN AI ARE BASED IN THE U.S.

InvestGlass, WHICH COUNTRIES ARE LEADING THE AI RACE?, Feb. 6, 2023. Retrieved Apr. 21, 2023 from https://www.investglass.com/which-countries-are-leading-the-ai-race/

The United States has indisputably become the primary hub for artificial intelligence development, with tech giants like Google, Facebook, and Microsoft at the forefront of AI-driven research. As the race to dominate AI grows ever more competitive around the world, companies within the U.S. are exploring new opportunities to strengthen their foothold in the industry through acquisitions, sharing deals and internal advances. Their goal: to become a major player in an industry that is expected to reach upwards of $118 billion by 2025. While competitors in China and other parts of the world are set on challenging US dominance, U.S.-based firms continue to push forward with cutting-edge initiatives that position them as AI leaders for years to come.

6. THE U.S. DOMINATES THE SEMICONDUCTOR MARKET.

Ernestas Naprys, (Senior Journalist, CyberNews), CHINA VS. U.S.: WHO'S WINNING THE RACE FOR AI SUPREMACY?, Nov. 28, 2023. Retrieved Apr. 21, 2023 from https://cybernews.com/tech/china-usa-artificial-intelligence-race/

The US clearly dominates the semiconductor design market, having an 85% global share, with 5% left to Asian countries, according to the Department of Defence. China, the largest importer and semiconductor market, depends on US chips. China represents 31.4% of worldwide final sales or $180 billion out of $574 billion in 2022, Citi Global Insights report revealed.

7. THE U.S. LEADS THE WORLD IN THE DEVELOPMENT OF AI LANGUAGE MODELS.

Ernestas Naprys, (Senior Journalist, CyberNews), CHINA VS. U.S.: WHO'S WINNING THE RACE FOR AI SUPREMACY?, Nov. 28, 2023. Retrieved Apr. 21, 2023 from https://cybernews.com/tech/china-usa-artificial-intelligence-race/

American companies and institutions developed most of the world's large language and multimodal models, 54% in 2022. In 2022, China developed only three "significant machine learning systems," while the US produced 16. The notable American models included OpenAI's DALL-E 2 and GPT-3, or Google's PaLM. The only Chinese large language and multimodal model released in 2022 was bilingual GLM-130B. In 2023, we're hearing about new AI models every month. The story is similar with private investments. US's private investors brought $47.4 billion to the table in 2022, roughly 3.5 times more than China's. The US leads globally in the total number of newly funded AI companies, having 3.4 times more than China.

8. THE U.S. HAS A SIGNIFICANT LEAD OVER CHINA AND THE REST OF THE WORLD.

Kateryna Meleshenko, (PhD in Engineering; Technology Consultant, Intersog GLOBAL AI RACE: DOMINANT PLAYERS AND ASPIRING CHALLENGERS, June 26, 2023. Retrieved Apr. 21, 2024 from https://intersog.com/blog/ai-dominant-players-and-aspiring-challengers/

Globally, only three countries are on a high level of development in the AI field; they are the USA (a score is 100), China (a score is 80), and South Korea (a score is 77,3). The score of other countries is lower than 50. To complete the top-5 list, - the last two countries are Australia and Japan.

Kateryna Meleshenko, (PhD in Engineering; Technology Consultant, Intersog GLOBAL AI RACE: DOMINANT PLAYERS AND ASPIRING CHALLENGERS, June 26, 2023. Retrieved Apr. 21, 2024 from https://intersog.com/blog/ai-dominant-players-and-aspiring-challengers/

According to the GAII measured by Tortoise Media, two power players are on the map - the United States and China; however, China is almost 40% weaker than the USA.

Paul Mozur, et al., (Global Technology Correspondent for The Times, based in Taipei.), CHINA'S RUSH TO DOMINATE A.I. COMES WITH A TWIST: IT DEPENDS ON U.S. TECHNOLOGY, Feb. 21, 2024. Retrieved Apr. 21, 2024 from https://www.nytimes.com/2024/02/21/technology/china-united-states-artificial-intelligence.html

Jenny Xiao, a partner at Leonis Capital, an investment firm that focuses on A.I.-powered companies, said the A.I. models that Chinese companies build from scratch "aren't very good," leading to many Chinese firms often using "fine-tuned versions of Western models." She estimated China was two to three years behind the United States in generative A.I. developments.

9. THE REGULATORY SYSTEM IN CHINA WILL PREVENT LEADERSHIP IN AI.

Paul Mozur, et al., (Global Technology Correspondent for The Times, based in Taipei.), CHINA'S RUSH TO DOMINATE A.I. COMES WITH A TWIST: IT DEPENDS ON U.S. TECHNOLOGY, Feb. 21, 2024. Retrieved Apr. 21, 2024 from https://www.nytimes.com/2024/02/21/technology/china-united-states-artificial-intelligence.html

When OpenAI released ChatGPT in November 2022, many Chinese firms were being hamstrung by a regulatory crackdown from Beijing that discouraged experimentation without government approval. Chinese tech companies were also burdened by censorship rules designed to manage public opinion and mute major opposition to the Chinese Communist Party. Chinese companies with the resources to build a generative A.I. model faced a dilemma. If they created a chatbot that said the wrong thing, its makers would pay the price. And no one could be sure what might tumble out of a chatbot's digital mouth. "It's just not possible to get rid of all the problematic ways these systems can express themselves," said Andrew Ng, who teaches computer science at Stanford and was a former executive at Baidu, the Chinese search giant.

10. CHINA'S DEVELOPMENT OF AI HAS BEEN SIDETRACKED INTO SURVEILLANCE SYSTEMS.

Paul Mozur, et al., (Global Technology Correspondent for The Times, based in Taipei.), CHINA'S RUSH TO DOMINATE A.I. COMES WITH A TWIST: IT DEPENDS ON U.S. TECHNOLOGY, Feb. 21, 2024. Retrieved Apr. 21, 2024 from https://www.nytimes.com/2024/02/21/technology/china-united-states-artificial-intelligence.html

Tech investors in China have also pushed for quick turnarounds from A.I., which has meant money has flowed to easy-to-execute applications instead of more ambitious goals focused on fundamental research, said Yiran Chen, a John Cocke Distinguished Professor of Electrical and Computer Engineering at Duke University. As much as 50 percent of China's A.I. investment has gone into computer vision technology, which is required for surveillance, instead of building foundation models for generative A.I., he said.

11. CHINESE COMPANIES ARE RELIANT ON U.S. RESEARCH IN AI.

Paul Mozur, et al., (Global Technology Correspondent for The Times, based in Taipei.), CHINA'S RUSH TO DOMINATE A.I. COMES WITH A TWIST: IT DEPENDS ON U.S. TECHNOLOGY, Feb. 21, 2024. Retrieved Apr. 21, 2024 from https://www.nytimes.com/2024/02/21/technology/china-united-states-artificial-intelligence.html

Even as the country races to build generative A.I., Chinese companies are relying almost entirely on underlying systems from the United States. China now lags the United States in generative A.I. by at least a year and may be falling further behind, according to more than a dozen tech industry insiders and leading engineers, setting the stage for a new phase in the cutthroat technological competition between the two nations that some have likened to a cold war.

ACCELERATION OF AI DEVELOPMENT WILL BRING THE END OF CIVILIZATION

1. DEVELOPMENTS IN AI ARE MOVING TOO FAST; WE MUST SLOW THEM DOWN.

David Barnhizer & Daniel Barnhizer, (Prof., Law, Emeritus, Cleveland State U./Prof., Law, Michigan State School of Law), THE ARTIFICIAL INTELLIGENCE CONTAGION, 2019, 172.

We must heed Oxford's Nick Bostrom's warning that “We are like small children playing with a bomb” when it comes to the potential consequences flowing from Artificial Intelligence. Presumably in an effort to "defuse the bomb," several individuals have contributed $20,000,000 to fund analyses of the potential impacts of AI/robotics on human societies and to figure out how to block the worst of the effects. The problem is that events and breakthroughs in AI/robotics are moving so rapidly, the applications are so diverse, and the motivations of the nations and researchers developing the technologies so incompatible, at least in the shorter term, that by the time we figure out what is happening the conditions will be too far along to avoid many of the consequences.

2. THERE IS NO PLAN FOR STOPPING AI – THE WINDOW TO STOP IT IS CLOSING.

Eliezer Yudkowsky, (Research Scientist, Machine Intelligence Research Institute), PAUSING AI DEVELOPMENTS ISN’T ENOUGH. WE NEED TO SHUT IT ALL DOWN, Mar. 29, 2023. Retrieved Apr. 21, 2024 from https://time.com/6266923/ai-eliezer-yudkowsky-open-letter-not-enough/

We are not prepared. We are not on course to be prepared in any reasonable time window. There is no plan. Progress in AI capabilities is running vastly, vastly ahead of progress in AI alignment or even progress in understanding what the hell is going on inside those systems. If we actually do this, we are all going to die.

3. IF AI CONTINUES TO DEVELOP, IT WILL BECOME SELF-AWARE.

David Barnhizer & Daniel Barnhizer, (Prof., Law, Emeritus, Cleveland State U./Prof., Law, Michigan State School of Law), THE ARTIFICIAL INTELLIGENCE CONTAGION, 2019, 174.

For the linked systems, when we factor in the storage capacity of server arrays such as the "Cloud" that can be used to interface with an individual unit's system and add in the incredible processing capacity, capability, awareness and synchronized knowledge residing in the externalized AI controller, it is probable that we will reach a point where the system becomes "self-aware" to the point that it could begin to make its own decisions or make decisions consistent with its interpretation of the programming algorithms that empower and direct its processes even if those are not considered by the human programmers that created the operating codes from an inevitable point of imperfect logic. Thinking we will be able to control what is clearly an "alien" mind is nonsensical.

4. WELL-MEANING RESEARCHERS WILL CREATE AN AI MONSTER.

David Barnhizer & Daniel Barnhizer, (Prof., Law, Emeritus, Cleveland State U./Prof., Law, Michigan State School of Law), THE ARTIFICIAL INTELLIGENCE CONTAGION, 2019, 179.

Such naive hopes are not only doomed to failure but show that AI/robotics researchers do not understand the implications of what they are creating, just as those who created nuclear and biological weapons ignored the moral dimensions of their activities. "Now I am become death, the destroyer of worlds," the well-known lament of the "father" of the atomic bomb, Robert Oppenheimer, when he witnessed the initial test of the atomic bomb in 1944 comes to mind. It is a powerful moral caution for researchers and those who use their work. It is likely to go unheeded.

5. DEVELOPMENT OF AI WILL LEAD TO "THE SINGULARITY."

David Barnhizer & Daniel Barnhizer, (Prof., Law, Emeritus, Cleveland State U./Prof., Law, Michigan State School of Law), THE ARTIFICIAL INTELLIGENCE CONTAGION, 2019, 173-174.

Another way of looking at the issue of whether AI/robotic systems will be an existential threat to humans is to consider the possibility of an alternative development: the merging of AI/robotic systems and humans. American author, inventor, and futurist Ray Kurzweil is famous for his argument that the exponential rise in computing power we see today will continue to a point where in 2029, machines will be as smart as people. At that point, Kurzweil says, people will begin to use technology in new ways, including implanting powerful devices that augment our abilities. Kurzweil calls this point in time "The Singularity," representing the joining of flesh and blood humans with the powers of AI, computers and robotic systems.

6. EVEN THOSE WHO BELIEVE AI WILL BE BENIGN, ADMIT THERE IS A SIGNIFICANT CHANCE THAT IT COULD DESTROY HUMANITY.

Kelsey Piper, (Sr. Writer, Future Perfect), AI EXPERTS ARE INCREASINGLY AFRAID OF WHAT THEY'RE CREATING, Nov. 28. 2022. Retrieved Apr. 21, 2024 from https://www.vox.com/the-highlight/23447596/artificial-intelligence-agi-openai-gpt3-existential-risk-human-extinction

But while divides remain over what to expect from AI — and even many leading experts are highly uncertain — there's a growing consensus that things could go really, really badly. In a summer 2022 survey of machine learning researchers, the median respondent thought that AI was more likely to be good than bad but had a genuine risk of being catastrophic. Forty-eight percent of respondents said they thought there was a 10 percent or greater chance that the effects of AI would be "extremely bad (e.g., human extinction)." It's worth pausing on that for a moment. Nearly half of the smartest people working on AI believe there is a 1 in 10 chance or greater that their life's work could end up contributing to the annihilation of humanity.

7. AI WILL FIND WAYS TO PREVENT BEING TURNED OFF.

Cade Metz, (Technology Reporter, New York Times), HOW COULD A.I. DESTROY HUMANITY?, June 10, 2023. Retrieved Apr. 21, 2024 from https://www.nytimes.com/2023/06/10/technology/ai-humanity.html

"People are actively trying to build systems that self-improve," said Connor Leahy, the founder of Conjecture, a company that says it wants to align A.I. technologies with human values. "Currently, this doesn't work. But someday, it will. And we don't know when that day is." Mr. Leahy argues that as researchers, companies and criminals give these systems goals like "make some money," they could end up breaking into banking systems, fomenting revolution in a country where they hold oil futures or replicating themselves when someone tries to turn them off.

8. HUMANS WON'T BE SMART ENOUGH TO COMPETE WITH AI.

David Barnhizer & Daniel Barnhizer, (Prof., Law, Emeritus, Cleveland State U./Prof., Law, Michigan State School of Law), THE ARTIFICIAL INTELLIGENCE CONTAGION, 2019, 171.

We don't know, and if Albert Einstein is correct when he said "Two things are infinite: the universe and human stupidity; and I'm not sure about the universe," the likelihood is that we simply aren't smart enough to survive the introduction of an AI species with vastly superior intelligence. At this point the answer is, could be, maybe yes, maybe no, depends, probably. The issue is real. We are inventing systems that will quite possibly evolve far beyond us in terms of capability, representing a form of awareness and intelligence "other" than us that will likely surpass the limits of biological humanity on numerous fronts.

9. AI IS THE BIGGEST EXISTENTIAL THREAT.

Anne Steele, (Staff), THE CHRISTIAN SCIENCE MONITOR, Oct. 27, 2014. Retrieved May 15, 2018 from Nexis.

Just as Tony Stark warns of the dangers of high-tech weaponry in the wrong hands, Elon Musk – the Tesla and SpaceX founder who is regularly compared to Iron Man's not-so-secret identity – is raising the alarm about advances in artificial intelligence. The Space X founder called artificial intelligence "our biggest existential threat," at an MIT symposium, comparing it to "summoning the demon."

Toby Walsh, (Fellow of the Australian Academy of Science and the Association for the Advancement of Artificial Intelligence), MACHINES THAT THINK; THE FUTURE OF ARTIFICIAL INTELLIGENCE, 2018, 7.

Yet many other commentators have predicted that AI carries with it many dangers, even to the extent that it may hasten the end of humankind if we're not too careful. In 2014 Elon Musk warned an audience at MIT that "we should be very careful about artificial intelligence. If I had to guess at what our biggest existential threat is, it's probably that.

10. EVEN A SMALL CHANCE OF THE AI APOCALYPSE IS TOO GREAT A RISK.

Anthony Aquirre, (Prof., Physics, U. California, Santa Cruz), WHAT TO THINK ABOUT MACHINES THAT THINK, 2015, 214.

But when you're talking about something that could radically determine the future (or future existence of) humanity, 75 percent confidence isn't enough. Nor is 90 percent enough, or 99 percent! We'd never have built the Large Hadron Collider if there was a 1 percent (let alone 10 percent) chance of its actually spawning black holes that consumed the world—there were, instead, extremely compelling arguments against that.

11. THE RISK OF EXTINCTION SHOULD OUTWEIGH ALL OTHERS.

Benjamin Todd, (CEO and co-founder of 80,000 Hours, a London-based think tank), HUMANITY IS PROBABLY FACING ITS MOST DANGEROUS TIME EVER, Oct. 2017. Retrieved Dec. 6, 2020 from https://80000hours.org/articles/extinction-risk/

In this new age, what should be our biggest priority as a civilization? Improving technology? Helping the poor? Changing the political system? Here's a suggestion that's not so often discussed: our first priority should be to survive. So long as civilization continues to exist, we'll have the chance to solve all our other problems, and have a far better future. But if we go extinct, that's it.

12. AI NEED NOT HATE HUMANS – IT WILL JUST FIND BETTER USES FOR THEIR ATOMS.

Eliezer Yudkowsky, (Research Scientist, Machine Intelligence Research Institute), PAUSING AI DEVELOPMENTS ISN'T ENOUGH. WE NEED TO SHUT IT ALL DOWN, Mar. 29, 2023. Retrieved Apr. 21, 2024 from https://time.com/6266923/ai-eliezer-yudkowsky-open-letter-not-enough/

Without that precision and preparation, the most likely outcome is AI that does not do what we want, and does not care for us nor for sentient life in general. That kind of caring is something that could in principle be imbued into an AI but we are not ready and do not currently know how. Absent that caring, we get "the AI does not love you, nor does it hate you, and you are made of atoms it can use for something else." The likely result of humanity facing down an opposed superhuman intelligence is a total loss. Valid metaphors include "a 10-year-old trying to play chess against Stockfish 15", "the 11th century trying to fight the 21st century," and "Australopithecus trying to fight Homo sapiens".

13. ONCE AI REACHES SENTIENCE, IT WILL BE TOO LATE TO SAVE HUMANITY.

Eliezer Yudkowsky, (Research Scientist, Machine Intelligence Research Institute), PAUSING AI DEVELOPMENTS ISN'T ENOUGH. WE NEED TO SHUT IT ALL DOWN, Mar. 29, 2023. Retrieved Apr. 21, 2024 from https://time.com/6266923/ai-eliezer-yudkowsky-open-letter-not-enough/

It took more than 60 years between when the notion of Artificial Intelligence was first proposed and studied, and for us to reach today's capabilities. Solving safety of superhuman intelligence—not perfect safety, safety in the sense of "not killing literally everyone"—could very reasonably take at least half that long. And the thing about trying this with superhuman intelligence is that if you get that wrong on the first try, you do not get to learn from your mistakes, because you are dead. Humanity does not learn from the mistake and dust itself off and try again, as in other challenges we've overcome in our history, because we are all gone.

14. MANY OF THE SMARTEST PEOPLE AMONG US ARE WARNING ABOUT THE AI APOCALYPSE.

George Zarkadakis, (Ph.D., Artificial Intelligence, City U. of London), IN OUR IMAGE: THE HISTORY AND FUTURE OF ARTIFICIAL INTELLIGENCE, 2015, 270.

In 2014, Max Tegmark, a prominent physicist at MIT, wrote in an op-ed in the Huffington Post that he is in no doubt that one day computers will beat humans at all tasks and develop superhuman intelligence. After that point, he claimed, everything on Earth will change. Machines will outsmart the markets, out-invent and out-patent all human researchers, and out-manipulate all human leaders. In a follow-up public letter printed in the British newspaper the Independent, co-signed by Stephen Hawking, computer scientist Stuart Russell and physics Nobel-winner Frank Wilczek, Tegmark and his peers raised the alarm about what might happen if AI takes over. Taking its lead from the film Transcendence, these prominent scientists argued that the threat of human extinction is very real, very serious and closing in upon us. They are not the only ones worried about AI taking over the world. Ray Kurzweil – inventor, entrepreneur and currently the head of AI research for Google – thinks that this will happen by 2030.

Mark Bishop, (Prof., Centre for Intelligent Data Analytics, U. of London), RISKS OF ARTIFICIAL INTELLIGENCE, 2016, 268.

In a television interview on December 2, 2014, Rory Cellan-Jones asked how far engineers had come along the path toward creating AI to which, slightly alarmingly, Professor Hawking replied "Once humans develop artificial intelligence it would take off on its own and redesign itself at an ever increasing rate. Humans, who are limited by slow biological evolution, couldn't compete, and would be superseded."

Rory Cellan-Jones, (Staff, BBC News), ARTIFICIAL INTELLIGENCE AND THE TECHNOLOGICAL SINGULARITY, 2017, 150.

Prof Stephen Hawking, one of Britain's pre-eminent scientists, has said that efforts to create thinking machines pose a threat to our very existence. He told the BBC: "The development of full artificial intelligence could spell the end of the human race."

15. EVIL PEOPLE COULD USE AI TO KILL BILLIONS.

Yoshua Bengio, (Computer science professor, the University of Montreal; scientific director, Mila – Quebec AI Institute), FIVE WAYS AI MIGHT DESTROY THE WORLD: 'EVERYONE ON EARTH COULD FALL OVER DEAD IN THE SAME SECOND', July 7, 2023. Retrieved Apr. 21, 2024 from https://www.theguardian.com/technology/2023/jul/07/five-ways-ai-might-destroy-the-world-everyone-on-earth-could-fall-over-dead-in-the-same-second

The easiest scenario to imagine is simply that a person or an organisation intentionally uses AI to wreak havoc. To give an example of what an AI system could do that would kill billions of people, there are companies that you can order from on the web to synthesize biological material or chemicals.

16. GIVING AI EVEN THE SIMPLEST TASKS COULD END UP IN CATASTROPHE.

Luke Dormehl, (Journalist & Documentary Filmmaker), THINKING MACHINES: THE QUEST FOR ARTIFICIAL INTELLIGENCE, 2017, 222-223.

A favorite thought experiment of those who believe advanced AI could mean the demise of the human race is the so-called "paperclip maximizer" scenario. In the scenario, proposed by Swedish philosopher and computational neuroscientist Nick Bostrom, an AI is given the seemingly harmless goal of running a factory producing paperclips. Issued with the task of maximizing the efficiency for producing paperclips, the AI, able to utilize nano technology to reconstruct matter on a molecular level, disastrously proceeds to turn first the Earth and then a large portion of the observable universe into paperclips.

Nick Bilton, (Staff), THE NEW YORK TIMES, Nov. 6, 2014, E2.

But the upheavals can escalate quickly and become scarier and even cataclysmic. Imagine how a medical robot, originally programmed to rid cancer, could conclude that the best way to obliterate cancer is to exterminate humans who are genetically prone to the disease.

17. AI WILL KILL WITHOUT MERCY.

Luke Westaway, (Sr. Editor, CNET), ARTIFICIAL INTELLIGENCE AND THE TECHNOLOGICAL SINGULARITY, 2017, 32-33.

Machines that become smart enough to ponder their own existence may certainly be a problem decades down the line, but phenomenal advances in AI mean that robots that kill without even being programmed to understand the barest concept of mercy are uncomfortably close.

Matt Egan, (Staff, CNN Business), 42% OF CEOS SAY AI COULD DESTROY HUMANITY IN FIVE TO TEN YEARS, June 14, 2023. Retrieved Apr. 21, 2024 from https://www.cnn.com/2023/06/14/business/artificial-intelligence-ceos-warning/index.html

Many top business leaders are seriously worried that artificial intelligence could pose an existential threat to humanity in the not-too-distant future. Forty-two percent of CEOs surveyed at the Yale CEO Summit this week say AI has the potential to destroy humanity five to ten years from now, according to survey results shared exclusively with CNN. “It’s pretty dark and alarming,” Yale professor Jeffrey Sonnenfeld said in a phone interview, referring to the findings.

18. THE RISK FROM AI IS GREATER THAN THE THREAT OF NUCLEAR WAR.

Nick Bilton, (Staff), NEW YORK TIMES, Nov. 6, 2014, E2.

Silicon Valley's resident futurist, Elon Musk, recently said artificial intelligence is "potentially more dangerous than nukes." And Stephen Hawking, one of the smartest people on earth, wrote that successful A. I. "would be the biggest event in human history. Unfortunately, it might also be the last." There is a long list of computer experts and science fiction writers also fearful of a rogue robot-infested future. Two main problems with artificial intelligence lead people like Mr. Musk and Mr. Hawking to worry. The first, more near-future fear, is that we are starting to create machines that can make decisions like humans, but these machines don't have morality and likely never will. The second, which is a longer way off, is that once we build systems that are as intelligent as humans, these intelligent machines will be able to build smarter machines, often referred to as superintelligence. That, experts say, is when things could really spiral out of control as the rate of growth and expansion of machines would increase exponentially. We can't build safeguards into something that we haven't built ourselves.

19. AI WILL EVENTUALLY IGNORE HUMAN COMMANDS.

Sam Harris, (Neuroscientist & Chair, Project Reason), WHAT TO THINK ABOUT MACHINES THAT THINK, 2015, 409-410.

Imagine, for instance, that we build a computer that's no more intelligent than the average team of researchers at Stanford or MIT—but because it functions on a digital time scale, it runs a million times faster than the minds that built it. Set it humming for a week, and it would perform 20,000 years of human-level intellectual work. What are the chances that such an entity would remain content to take direction from us? And how could we confidently predict the thoughts and actions of an autonomous agent that sees more deeply into the past, present, and future than we do?

20. AI WILL BECOME AN IMMORTAL DICTATOR.

David Barnhizer & Daniel Barnhizer, (Prof., Law, Emeritus, Cleveland State U./Prof., Law, Michigan State School of Law), THE ARTIFICIAL INTELLIGENCE CONTAGION, 2019, 179.

At least when there's an evil dictator, that human is going to die. ... But for an AI there would be no death. It would live forever, and then you'd have an immortal dictator, from which we could never escape." (ellipsis in original)

21. IF AI IS NOT STOPPED, ALL WILL DIE.

Eliezer Yudkowsky, (Research Scientist, Machine Intelligence Research Institute), PAUSING AI DEVELOPMENTS ISN'T ENOUGH. WE NEED TO SHUT IT ALL DOWN, Mar. 29, 2023. Retrieved Apr. 21, 2024 from https://time.com/6266923/ai-eliezer-yudkowsky-open-letter-not-enough/

Many researchers steeped in these issues, including myself, expect that the most likely result of building a superhumanly smart AI, under anything remotely like the current circumstances, is that literally everyone on Earth will die. Not as in "maybe possibly some remote chance," but as in "that is the obvious thing that would happen."

Eliezer Yudkowsky, (Research Scientist, Machine Intelligence Research Institute), PAUSING AI DEVELOPMENTS ISN'T ENOUGH. WE NEED TO SHUT IT ALL DOWN, Mar. 29, 2023. Retrieved Apr. 21, 2024 from https://time.com/6266923/ai-eliezer-yudkowsky-open-letter-not-enough/

To visualize a hostile superhuman AI, don't imagine a lifeless book-smart thinker dwelling inside the internet and sending ill-intentioned emails. Visualize an entire alien civilization, thinking at millions of times human speeds, initially confined to computers—in a world of creatures that are, from its perspective, very stupid and very slow. A sufficiently intelligent AI won't stay confined to computers for long. In today's world you can email DNA strings to laboratories that will produce proteins on demand, allowing an AI initially confined to the internet to build artificial life forms or bootstrap straight to post-biological molecular manufacturing. If somebody builds a too-powerful AI, under present conditions, I expect that every single member of the human species and all biological life on Earth dies shortly thereafter.

Mark Bishop, (Prof., Centre for Intelligent Data Analytics, U. of London), RISKS OF ARTIFICIAL INTELLIGENCE, 2016, 277-278.

Without having to fantasize that it has now (or will ever) reached the level of superhuman intelligence that Professors Warwick and Hawking have graphically warned us of, the all-too-real-world example of armed robots (as described earlier) precisely illustrate why it is easy to concur that already current AI systems pose a real "existential threat" to humanity—the threat of artificial stupidity.

HISTORY SHOWS THAT FEAR OF TECHNOLOGICAL ADVANCE IS MISPLACED.

1. ALL TECHNOLOGICAL ADVANCES HAVE BEEN MET WITH THE FEAR OF CHANGE.

Joanna Penn, (Best-Selling Author), THE AI-ASSISTED ARTISAN, May 5, 2023. Retrieved Dec. 15, 2023 from https://www.thecreativepenn.com/2023/05/05/ai-assisted-artisan-author/

In Build for Tomorrow, Jason Feifer gives many examples of how people have reacted to change. Bicycles were considered damaging to society, and books were considered dangerous for women. US Founding Father Thomas Jefferson even said that novels were "poison [that] infects the mind." Cars were known as 'devil wagons,' and "people on the side of the streets started throwing rocks at [those in cars]. Oftentimes, bystanders would yell, 'Get a horse!'" When I was growing up in the 80s, TV was rotting our brains and computer games caused violence in children. Now we live in a golden era for TV and the gaming industry is bigger than music and movie industries combined.

2. SPELL AND GRAMMAR CHECK WERE ONCE VIEWED WITH SKEPTICISM.

Joanna Penn, (Best-Selling Author), THE AI-ASSISTED ARTISAN, May 5, 2023. Retrieved Dec. 15, 2023 from https://www.thecreativepenn.com/2023/05/05/ai-assisted-artisan-author/

You are already AI-assisted and you already use AI tools as part of your daily life and your author business. If you use Grammarly or ProWritingAid for aspects of editing, Google for research or Maps for navigation or email with auto-anti-spam, Amazon for publishing or advertising or shopping, Facebook or TikTok or Twitter for social media, Spotify for music discovery, or Netflix for TV, you are using AI-assisted platforms and tools. Even if you only use Microsoft Word, it will soon be enhanced by generative AI with Co-Pilot. You can go back to writing by hand on paper and avoid AI altogether, or you can take a breath and follow your curiosity. Experiment.

3. EBOOKS WERE ONCE VIEWED AS THE DEATH KNELL FOR LITERATURE.

Elisa Lorello, (Author), HOW TO MAKE PRODUCTIVE USE OF CHATGPT, Apr. 19, 2023. Retrieved Dec. 15, 2023 from https://janefriedman.com/author/chris-jane/

I think people were sounding the same kinds of alarms about ebooks and the Kindle in 2009–2010. They said ebooks (especially self-published ebooks) were going to kill the printed word and put traditional authors, agents, editors, and bookstores out of business. Digital publishing-on-demand was disruptive, and the industry needed to adjust and adapt. But here's the thing: it did. The industry adjusted and adapted, and digital publishing-on-demand is as viable an option as traditional publishing. Moreover, the professional standards for self-publishing significantly increased as a result.

4. ALL TECHNOLOGICAL ADVANCES ARE MET WITH UNREASONABLE FEAR – AI IS NO DIFFERENT.

Joanna Penn, (Best-Selling Author), THE AI-ASSISTED ARTISAN, May 5, 2023. Retrieved Dec. 15, 2023 from https://www.thecreativepenn.com/2023/05/05/ai-assisted-artisan-author/

Too many people are making pronouncements about AI in the creative sphere without trying the tools — or without trying them again, since there are developments every day and the tools are changing and improving at high speed. An opinion you held last week may now shift based on new developments, so question and test your assumptions. Too many people are stuck in panic and fear and/or avoidance — which I completely understand as I have had those feelings too — but we need to move forward into curiosity and adaptation, as generative AI is not going back in the box.

AI IS MORE LIKELY TO BE HELPFUL THAN HARMFUL IN THE CREATIVE ARTS.

1. AI PROMOTES HUMAN CREATIVITY.

Falon Fatemi, (CEO of Fireside, a Streaming Platform for Writers), WHY AI IS NOT GOING TO REPLACE HOLLYWOOD CREATIVES, June 21, 2023. Retrieved Dec. 15, 2023 from https://www.forbes.com/ sites/falonfatemi/2023/06/21/why-ai-is-not-going-to-replace-hollywood-creatives/?sh=61e1e8c442bb

The advent of AI doesn't diminish writers' creative prowess; rather, it amplifies it by allowing them to focus on the essence of their craft. Writers' greatest asset in their ability to craft unique narratives and evoke emotions through words. With AI taking care of routine tasks—and even generating text in the writer's own unique voice, writers are liberated to delve deeper into the lives and minds of their characters, to iterate on plotlines to make them even more original, and to experiment with new narrative forms and formats, since AI only generates from what is and has been.

Falon Fatemi, (CEO of Fireside, a Streaming Platform for Writers), WHY AI IS NOT GOING TO REPLACE HOLLYWOOD CREATIVES, June 21, 2023. Retrieved Dec. 15, 2023 from https://www.forbes.com/ sites/falonfatemi/2023/06/21/why-ai-is-not-going-to-replace-hollywood-creatives/?sh=61e1e8c442bb

When we welcome AI as a companion on the creative journey, we allow each writer to, in effect, become their own studio—an approach which certainly didn't hurt Walt Disney. Writers can leverage AI's strengths to amplify their output, unlock new realms of imagination and bring their stories to life like never before. Today, writers are not facing a threat. Rather, they have the opportunity to redefine the art of storytelling in the age of AI.

2. AI PROVIDES BRAINSTORMING ASSISTANCE.

Elisa Lorello, (Author), HOW TO MAKE PRODUCTIVE USE OF CHATGPT, Apr. 19, 2023. Retrieved Dec. 15, 2023 from https://janefriedman.com/author/chris-jane/

Next, I did some creative exploration for fiction—titles, story ideas, and even scenes of description and dialogue. For example, I asked Chat GPT "What kind of character would appeal to a Generation X female reader?" Or "What are the most popular tropes for contemporary romance?" When I wrote The AI Author Assistant, I asked for title and subtitle recommendations. In the book, I showed the progress of how I ultimately came up with the title I did. The most interesting and unexpected result was all that exploration and play sparked ideas of my own. So, for example, if I asked ChatGPT to give me 10 premises for an office romance, I would decide they were all too generic—and then the following morning in the shower a fresh idea for an office romance would come to me.

3. AI CAN ACTUALLY HELP SPARK HUMAN CREATIVITY.

Ramón López de Mántaras, (Artificial Intelligence Research Institute (IIIA), Bellaterra, Spain), ARTIFICIAL INTELLIGENCE AND THE ARTS: TOWARD COMPUTATIONAL CREATIVITY May 31, 2023. Retrieved Dec. 15, 2023 from https://www.bbvaopenmind.com/en/articles/artificial-intelligence-and-the-arts-toward-computational-creativity/

Can we use artificial intelligence to support human creativity and discovery? A new trend known as Assisted Creation has important implications for creativity: on the one hand, assistive creation systems are making a wide range of creative skills more accessible. On the other hand, collaborative platforms, such as the one developed within the European project PRAISE for learning music, are making it easier to learn new creative skills. PRAISE is a social network-based learning platform that includes humans and intelligent software agents that give feedback to a music student regarding music composition, arrangement, and performance. Students upload their solutions to a given lesson plan provided by a tutor (compositions, arrangements, or performances).

4. AI HELPS ARTISTS FIND WAYS TO EXPRESS THEIR CREATIVE IDEAS.

Tojin Eapen et al. (Prof., Business, U. of Missouri), HARVARD BUSINESS REVIEW, July/August 2023. "How Generative AI Can Augment Human Creativity." Retrieved Dec. 15, 2023 from https://hbr.org/2023/07/how-generative-ai-can-augment-human-creativity

Humans have boundless creativity. However, the challenge of communicating their concepts in written or visual form restricts vast numbers of people from contributing new ideas. Generative AI can remove this obstacle.

5. AI INCREASES WRITERS' PRODUCTIVITY.

Falon Fatemi, (CEO of Fireside, a Streaming Platform for Writers), WHY AI IS NOT GOING TO REPLACE HOLLYWOOD CREATIVES, June 21, 2023. Retrieved Dec. 15, 2023 from https://www.forbes.com/sites/falonfatemi/2023/06/21/why-ai-is-not-going-to-replace-hollywood-creatives/?sh=61e1e8c442bb

Efficiency directly translates into productivity, and increased productivity means that writers can take on and complete more projects, participate in more collaborations, and ultimately, earn more income. Writers often face the challenge of juggling multiple projects while striving to maintain the quality of their work. AI can be writers' ally in this endeavor.

6. AI CAN BE USED AS A RESEARCH ASSISTANT.

Falon Fatemi, (CEO of Fireside, a Streaming Platform for Writers), WHY AI IS NOT GOING TO REPLACE HOLLYWOOD CREATIVES, June 21, 2023. Retrieved Dec. 15, 2023 from https://www.forbes.com/sites/falonfatemi/2023/06/21/why-ai-is-not-going-to-replace-hollywood-creatives/?sh=61e1e8c442bb

AI has the remarkable ability to process vast amounts of data, analyze patterns, and generate insights at lightning speed. By harnessing its power, writers can optimize their time and focus on higher-value tasks. Mundane activities like researching, fact-checking, and organizing information can be delegated to AI, freeing up those hours for writers to do the emotional storytelling that humans do best.

7. AI CAN HELP CURE WRITER'S BLOCK.

Elisa Lorello, (Author), HOW TO MAKE PRODUCTIVE USE OF CHATGPT, Apr. 19, 2023. Retrieved Dec. 15, 2023 from https://janefriedman.com/author/chris-jane/

I use ChatGPT as a springboard. For example, I dislike writing book descriptions, and I always freeze up when it's time to write one. I asked ChatGPT to write a book description for The AI Author Assistant. I hated what it came up with; however, it unblocked me and I wrote a description on my own. (I used only one line from the AI-generated one, and tweaked it a bit.) I did the same writing copy for Amazon ads. ChatGPT gave me some ideas to work with, and I then created copy in my own words.

Elisa Lorello, (Author), HOW TO MAKE PRODUCTIVE USE OF CHATGPT, Apr. 19, 2023. Retrieved Dec. 15, 2023 from https://janefriedman.com/author/chris-jane/

I think it can if you use it as a freewriting technique. For example, if I don't know what scene comes next, I could summarize (or perhaps even copy and paste) the previous scene and outright ask ChatGPT "What do you think should happen next?" In the past, I've tried to unblock myself by typing, "What I'm trying to say is…" and then proceeding to try to work it out on the page, however messy it may be. You can say that to ChatGPT and it could potentially help you organize your thoughts or give you clarity or direction.

8. AI SHOULD BE VIEWED AS A USEFUL TOOL FOR PRACTITIONERS OF THE ARTS.

Elisa Lorello, (Author), HOW TO MAKE PRODUCTIVE USE OF CHATGPT, Apr. 19, 2023. Retrieved Dec. 15, 2023 from https://janefriedman.com/author/chris-jane/

Meanwhile, administrative things I began using it for—outlines and timetables and daily schedules, mainly—were freeing me creatively and improving my productivity and time management. This past month, I started writing two novels with overlapping storylines, kind of like companion novels. ChatGPT generated outlines for each, and I've been writing both manuscripts as if they were one novel with alternating POVs. In three weeks, I drafted 35,000 words (combined). At this rate, I predict I'll complete the first draft of both by the end of June.

Joanna Penn, (Best-Selling Author), THE AI-ASSISTED ARTISAN, May 5, 2023. Retrieved Dec. 15, 2023 from https://www.thecreativepenn.com/2023/05/05/ai-assisted-artisan-author/

But when I started co-writing with GPT4 (and it really does feel like co-writing), I had a moment of reckoning. It is a step change from what has come before. Based on my ideas and my structured prompting and using my own J.F. Penn fiction as examples to guide voice and tone, I was able to output words much faster than I could write them myself. I was so engrossed in the story as I prompted and GPT4 generated, that I enjoyed the experience far more than writing alone. It was so much fun that I was desperate to get back to the page to continue turning what was in my head into reality.

Joanna Penn, (Best-Selling Author), THE AI-ASSISTED ARTISAN, May 5, 2023. Retrieved Dec. 15, 2023 from https://www.thecreativepenn.com/2023/05/05/ai-assisted-artisan-author/

The Merriam Webster dictionary defines author as "the writer of a literary work (such as a book), and also "one that originates or creates something." The latter half of the definition works perfectly if you want to embrace AI-assistance. You can use AI tools through the creative process, with your ideas as the origin of the story or the non-fiction book, your hand-crafting through multiple prompting layers, your guidance and editing shaping the final version of whatever you want to create.

9. MUSICIANS USE AI AS A COLLABORATIVE ASSISTANT.

Joanna Penn, (Best-Selling Author), THE AI-ASSISTED ARTISAN, May 5, 2023. Retrieved Dec. 15, 2023 from https://www.thecreativepenn.com/2023/05/05/ai-assisted-artisan-author/

In the creative sphere, Feifer reports that musicians initially resisted recorded music, seeing it as a threat to their live performances, but then pivoted into embracing it when they began to make money from recordings. As I write this in May 2023, there is controversy over Heart on my Sleeve, a viral hit song created with the AI-synthesized voices of two human artists, with debates over the ramifications for copyright and fair use legal frameworks. But some artists are embracing the change, with musician Grimes saying on Twitter, "I'll split 50% royalties on any successful AI-generated song that uses my voice. Same deal as I would with any artist I collab with.

10. ARTISTS USE AI AS A TOOL TO INCREASE HUMAN CREATIVITY.

Himanshu Kumar, (Staff, Medium.com), 6 WAYS AI ART GENERATORS WILL HELP ARTISTS, NOT REPLACE THEM, Jan. 5, 2023. Retrieved Dec. 15, 2023 from https://medium.com/@imhimanshu/ai-art-generators-will-help-artists-541ab7f2047a

After working on design projects day in and day out, it can be easy to get stuck in a rut. After a while, it can be difficult to come up with new, original ideas. This is where AI art generators can help. By using artificial intelligence, you can create art that is unique and original, providing you with new ideas for your next project. They can help you expand your creative horizons by giving you access to design possibilities that you never would have considered before. This tool can assist you in breaking out of a creative rut, and producing truly one-of-a-kind art. With this tool at your disposal, you can push the boundaries of your creativity; discovering new styles, and methods of art that you would have never come up with on your own.

THE USE OF AI IN ART, MUSIC, AND LITERATURE PROMOTES LOVE FOR THE ARTS FOR A WIDER AUDIENCE.

1. AI IS THE KEY TO OPENING DOORS FOR YOUNGER CREATIVE ARTISTS.

National Foundation for Youth Music, GENERATION AI: HOW YOUNG MUSICIANS ARE EMBRACING AI, Oct. 10, 2023. Retrieved Dec. 15, 2023 from https://youthmusic.org.uk/generation-ai-how-young-musicians-are-embracing-ai

There are still important questions to be addressed around the monetising of AI and the ownership of content, for example. "However, what we're hearing right now from the next generation of creatives Is excitement around its potential to equalise access to making, learning and earning in music. Especially those who don't have the advantage of expensive music education or equipment to aid their learning process, or paid support to run their business. The fact that two thirds (63%) of young people see AI as a useful tool in their creative arsenal, reinforces this idea that there is a future for AI in the creative sphere. "From their perspective, our research shows that AI Is levelling the playing field, which will ensure a more diverse pipeline of talent entering the music industries."

Sarah Ransome, (Artist), ART IDEAS FOR KIDS: USING ARTIFICIAL INTELLIGENCE (AI) ART GENERATORS, 2023. Retrieved Dec. 16, 2023 from https://www.sarahransomeart.com/blog/art-and-craft-ideas-for-kids-using-artificial-intelligence-ai-art-generators

AI Art can inspire children to think outside the box and explore new ideas. Through AI Art, children can learn about the principles of design, color, and composition, and apply these concepts to their own artworks. AI Art can also introduce children to new themes, art mediums and concepts that they may not have encountered before, for example they can become aware of and start applying cubism, pop art or cyber punk, to name a few.

2. AI ALLOWS PERSONS WITH DISABILITIES TO PARTICIPATE IN ARTISTIC CREATION.

Kelly Bishop, (Staff, Vice), IS AI MUSIC A GENUINE THREAT TO REAL ARTISTS?, Feb. 16, 2023. Retrieved Dec. 15, 2023 from https://www.vice.com/en/article/88qzpa/artificial-intelligence-music-industry-future

Many musicians seem to be of the opinion that using AI to create music is cheating, but once you start discussing who should be allowed to make art and how, other kinds of ethical questions around ableism and classism arise. Advancements in technology are leading to instruments being developed that can be played by people with disabilities. An eye harp controlled with eye movement alone has allowed people to create music whose bodies normally wouldn't allow them to do so – is that cheating, too? Many people are deprived of the privilege of creating art, not only for reasons of ability but accessibility, too. Not everyone has the option of music lessons or can afford to buy an instrument to practise on – maybe one benefit of AI music apps is that they democratise songwriting.

3. THE USE OF AI PROMOTES A BROADER APPRECIATION OF ARTISTIC CREATIVITY.

Ramón López de Mántaras, (Artificial Intelligence Research Institute (IIIA), Bellaterra, Spain), ARTIFICIAL INTELLIGENCE AND THE ARTS: TOWARD COMPUTATIONAL CREATIVITY May 31, 2023. Retrieved Dec. 15, 2023 from https://www.bbvaopenmind.com/en/articles/artificial-intelligence-and-the-arts-toward-computational-creativity/

New technologies, and in particular artificial intelligence, are drastically changing the nature of creative processes. Computers are playing very significant roles in creative activities such as music, architecture, fine arts, and science. Indeed, the computer is already a canvas, a brush, a musical instrument, and so on.

4. THE USE OF AI STIMULATES REVERENCE FOR GREAT ARTISTS OF THE PAST.

Ramón López de Mántaras, (Artificial Intelligence Research Institute (IIIA), Bellaterra, Spain), ARTIFICIAL INTELLIGENCE AND THE ARTS: TOWARD COMPUTATIONAL CREATIVITY May 31, 2023. Retrieved Dec. 15, 2023 from https://www.bbvaopenmind.com/en/articles/artificial-intelligence-and-the-arts-toward-computational-creativity/

Certainly the best-known work on computer composition using AI is David Cope's EMI project. This work focuses on the emulation of styles of various composers. It has successfully composed music in the styles of Cope, Mozart, Palestrina, Albinoni, Brahms, Debussy, Bach, Rachmaninoff, Chopin, Stravinsky, and Bartok. It works by searching for recurrent patterns in several (at least two) works of a given composer. The discovered patterns are called signatures. Since signatures are location dependent, EMI uses one of the composer's works as a guide to fix them to their appropriate locations when composing a new piece. To compose the musical motives between signatures, EMI uses a compositional rule analyzer to discover the constraints used by the composer in his works.

5. THE USE OF AI INCREASES ACCESS TO ARTISTIC EXPRESSION.

Ramón López de Mántaras, (Artificial Intelligence Research Institute (IIIA), Bellaterra, Spain), ARTIFICIAL INTELLIGENCE AND THE ARTS: TOWARD COMPUTATIONAL CREATIVITY May 31, 2023. Retrieved Dec. 15, 2023 from https://www.bbvaopenmind.com/en/articles/artificial-intelligence-and-the-arts-toward-computational-creativity/

A basic idea is that creativity is a social process that can be augmented through technology. By projecting these ideas into the future, we could imagine a world where creativity is highly accessible and (almost) anyone can write at the level of the best writers, paint like the great masters, compose high-quality music, and even discover new forms of creative expression. For a person who does not have a particular creative skill, gaining a new capability through assisted creation systems is highly empowering.

6. THE USE OF AI TAKES HUMAN CREATIVITY TO HIGHER LEVELS.

Haochen Sun, (Prof., Law, Hong Kong Faculty of Law), IOWA LAW REVIEW, Mar. 2022, 1241.

The expression contributed by the AI system making independent creative choices blends with the human creator's expression such that the resulting work does not fully embody the original intellectual conception of the human creator. In such a case, it is difficult to assert that the AI system is an agent of fixation while authorship is solely attributed to the human creator.

Joanna Penn, (Best-Selling Author), THE AI-ASSISTED ARTISAN, May 5, 2023. Retrieved Dec. 15, 2023 from https://www.thecreativepenn.com/2023/05/05/ai-assisted-artisan-author/

If you are AI-positive or at least AI-curious, check out the Facebook groups AI Writing for Authors, and AI Art for Authors, which are full of great tips and tricks and recommendations for various tools and prompts to get started. You can also get ideas from The AI Author Assistant by Elisa Lorello, or check out tutorial videos like Elisabeth Ann West's videos on Sudowrite, or join J. Thorn's newsletter about the impact of AI on creatives at creativeaidigest.com, or check out Monica Leonelle's essays at The Author Analyst. This is the beginning of a new form of creativity, and everyone is finding their own way.

Haochen Sun, (Prof., Law, Hong Kong Faculty of Law), IOWA LAW REVIEW, Mar. 2022, 1241.

Rather, AI-generated creations could even be the result of the collaboration between humans and AI systems. The output does not solely contain the expression of the human creator with the AI system using its own capacities to create and thereby contribute original expression to the resulting work.

THE CLAIM THAT THE USE OF AI IN THE ARTS CONSTITUTES STEALING IS MISGUIDED.

1. CREATIVE ARTISTS HAVE ALWAYS RELIED ON SOURCES BEYOND THEMSELVES.

Laura Smith, (Deputy Editor, California Magazine), WILL AI WRITE THE NEXT GREAT AMERICAN NOVEL?, Apr. 15, 2021. Retrieved Dec. 15, 2023 from https://www.universityofcalifornia.edu/news/will-ai-write-next-great-american-novel

Writing, arguably, hasn't experienced any major evolutionary steps since word processing sped up the transfer of thoughts from brain to page, or since the internet widened our access to information. What if, armed with beautiful machines, writers could push their artform beyond its current boundaries, transcend the idea of authorship, even unravel the mysteries of the creative process? That could be revolutionary. And yet, we've long accepted the idea that stories come from a "force" outside of us. By John Milton's own account, he wasn't the author of "Paradise Lost." He claimed it was dictated to him by his "celestial patroness" while he slept. He would emerge from his slumbers with the fully formed epic poem ready to be announced to the closest person with a pen. When he tried to write while awake, without his muse, nothing came. The feeling of words and ideas flowing through you is one of the most gratifying experiences a writer can have. Who's to say a muse couldn't be mechanical?

2. AI DEVELOPS ARTISTIC SKILL USING THE SAME METHODS AS HUMAN CREATIVES.

Grant Darling, (Staff, Udemy), IS AI ART REALLY THEFT? THE ETHICALITY OF AI ART GENERATORS, Feb. 10, 2023. Retrieved Dec. 15, 2023 from https://thecodebytes.com/is-ai-art-theft/

Many people understand that these ai art generators are taking millions of images and using them to create new artwork. Which sounds like theft. However, people also assume these art generators are copying pixel for pixel from multiple images to create a single image. This would be plagiarism. However, this is also not the case. What AI Art AI is actually doing is learning from these images. A big difference between copying and pasting.

Ella Feldman, (Contributor, Smithsonian Magazine), ARE A.I. IMAGE GENERATORS VIOLATING COPYRIGHT LAWS?, Jan. 24, 2023. Retrieved Dec. 15, 2023 from https://www.smithsonianmag.com/smart-news/are-ai-image-generators-stealing-from-artists-180981488/

Speaking with the Associated Press in December, before the lawsuits were filed, Midjourney CEO David Holz compared the process behind his image generating service to the process behind human creativity, which often entails drawing inspiration from other artists. "Can a person look at somebody else's picture and learn from it and make a similar picture?" Holz said. "Obviously, it's allowed for people and if it wasn't, then it would destroy the whole professional art industry, probably the nonprofessional industry too. To the extent that A.I.s are learning like people, it's sort of the same thing and if the images come out differently then it seems like it's fine."

3. THE USE OF AI IN THE ARTS IS NOT THEFT.

Grant Darling, (Staff, Udemy), IS AI ART REALLY THEFT? THE ETHICALITY OF AI ART GENERATORS, Feb. 10, 2023. Retrieved Dec. 15, 2023 from https://thecodebytes.com/is-ai-art-theft/

Ultimately, to say AI art is theft just isn't true. AI art-making models are a tool and it is within the hands of the user to either use them ethically or unethically. These AI art-generating models are not directly stealing other's artwork or images to create their own, they just use them to learn. Similar to any artist. However, if you ask the AI to make art in the style of a famous artist, it could be seen as unethical. That being said, there is nothing stopping a human artist from doing the same thing.

THE USE OF AI IN THE ARTS WILL NEVER REPLACE HUMAN ARTISTS, MUSICIANS, AND WRITERS.

1. CONSUMERS WILL STILL VALUE ORIGINAL HUMAN ARTISTIC CREATIONS.

Dan Burk, (Distinguished Professor of Law, University of California, Irvine), GEORGIA LAW REVIEW, 2023, 1686.

We can, for example, already reprint essentially infinite copies of graphics such as the visual works of Rembrandt van Rijn for popular consumption. These can be produced at any level of resolution and fidelity desired, including brushstroke reproductions of the original paintings. This does not change the value of the original paintings of course; the reproductions are not authentic in the sense of having been produced by the physical action of the painter Rembrandt. As Benjamin might say, only the initial Rembrandt painting carries an aura of authenticity; reproductions, no matter what their physical quality, lack this attribute.

Morgan Sung, (Staff, NBC News), LENSA, THE AI PORTRAIT APP, HAS SOARED IN POPULARITY. BUT MANY ARTISTS QUESTION THE ETHICS OF AI ART. Dec. 6, 2022. Retrieved Dec. 15, 2023 from https://www.nbcnews.com/tech/internet/lensa-ai-artist-controversy-ethics-privacy-rcna60242

Prisma issued a lengthy Twitter thread on Tuesday morning, in which it addressed concerns of AI art replacing art by actual artists. The thread did not address accusations that many artists didn't consent to the use of their work for AI training. "As cinema didn't kill theater and accounting software hasn't eradicated the profession, AI won't replace artists but can become a great assisting tool," the company tweeted. "We also believe that the growing accessibility of AI-powered tools would only make man-made art in its creative excellence more valued and appreciated, since any industrialization brings more value to handcrafted works."

2. TECHNOLOGICAL REPRODUCTION ACTUALLY INCREASES THE VALUE OF ORIGINALS.

Amy Adler, (Prof., Law, New York University School of Law), NYU LAW REVIEW, 2023, 769.

In my view, our yearning for authenticity has been paradoxically amplified by our current culture of copying and the disorientation that it produces. We're drowning in images we're drowning in information we're living on Zoom and in virtual space we're moving into the metaverse. Nothing is real. At times it seems as if we're grasping for something to hold on to and touch. We see this quest for authenticity across culture, not just in art. The passion for vinyl records has come back into vogue in our age of streaming. Suddenly the coolest media outlet for Gen Z is a printed newspaper, available not online but in a box on a corner in the hipster neighborhood called "Dimes Square" in New York City.

3. HUMAN CREATIVE ARTISTS WILL NEVER BE REPLACED.

Sam Johnson, (Editor-In-Chief of Otter PR), WHY AI CAN'T REPLACE A CLIENT-FOCUSED TEAM OF DEDICATED HUMAN WRITERS, Apr. 3, 2023. Retrieved Dec. 15, 2023 from https://www.spiceworks.com/tech/artificial-intelligence/guest-article/why-ai-cant-replace-human-writers/

Frankly, I don't know any writer who would scoff at freeing up some of their time that would otherwise be dedicated to research and outlining. The ability of AI programs to do the frontline work of compiling data, outlining, and prompting ideas can prove endlessly helpful for writers looking to maximize their productivity and output. With all that current AI is capable of and all of the advancements that will come soon, writers need to think of AI not as a replacement but as an additional tool in their toolbelt. AI will hopefully improve the writer's job, but it is not on its way to replacing human writers soon.

NON-FUNGIBLE TOKENS (NFTS) PROVIDE AN AVAILABLE ALTERNATIVE TO COPYRIGHT PROTECTION

1. AI HAS CREATED THE NEW WORLD OF NON-FUNGIBLE TOKENS (NFTS).

Edward Lee, (Prof., Law, Illinois Tech Chicago-Kent College of Law), UNIVERSITY OF ILLINOIS LAW REVIEW, 2023, 1089.

The starting point in understanding how NFTs are developing De-IP is recognizing that an NFT is itself a new form of intellectual property - one that wasn't created by statute or the common law, but instead by computer code and decentralized technology using blockchain.

Amy Adler, (Prof., Law, New York University School of Law), NYU LAW REVIEW, 2023, 760.

To vastly oversimplify: NFTs are unique non-fungible cryptographic tokens, existing on the blockchain, that identify or "point to" things. While NFTs can point to anything, one of the first applications of NFT technology was in the realm of digital art, and even now, as their uses continue to expand, NFTs most frequently point to digital images or clips that are publicly available and capable of endless repetition.

Edward Lee, (Prof., Law, Illinois Tech Chicago-Kent College of Law), UNIVERSITY OF ILLINOIS LAW REVIEW, 2023, 1054.

When people buy NFTs, they are not buying "just a JPEG." Instead, the sale involves a purchase of the virtual token, a new type of property, stored on blockchain, plus a content license, granted by the creator, that allows the NFT owner to make certain uses of the associated copyrighted work, such as commercial uses and the making of derivative works. This complex arrangement of virtual ownership - the sale of a virtual token with a content license that grants the NFT owner certain rights to use the associated artwork - has created a new form of decentralized intellectual property.

2. AT PRESENT, THERE IS DRAMATIC GROWTH IN THE USE OF NFT MARKERS.

Amanda Sharp, (JD Candidate), SAN DIEGO LAW REVIEW, Fall 2022, 638.

The year is 2022 and a new art phenomenon is sweeping the nation - non-fungible tokens (NFTs). Non-fungible assets are unique and cannot be replicated. While the word token might suggest NFTs are associated with a physical coin, NFTs are simply unique data strings that provide public proof of asset ownership. NFTs track a digital asset's possession on a phenomenon called a blockchain. Similar to how a barcode on an item of clothing marks the clothing's price, tracks inventory of that item, and can be referenced to verify that an authentic purchase has occurred, NFTs can track digital asset ownership and verify a transaction's authenticity. NFTs are commonly used to track the transfer, trade, and sale of digital artworks; however, NFTs have also been associated with songs, movies, and other creative and non-creative works.

Edward Lee, (Prof., Law, Illinois Tech Chicago-Kent College of Law), UNIVERSITY OF ILLINOIS LAW REVIEW, 2023, 1055.

Although the market for NFTs is in its early stages, in 2021 over $27 billion in NFT sales occurred. To put that number into perspective, global streaming revenue from recorded music was estimated to be only $19.6 billion in 2021. To get a glimpse of how NFTs operate as De-IP, consider that NFTs are, themselves, a new form of intellectual property. One can abandon copyrights for the artwork associated with an NFT, yet the NFT can have independent value as intellectual property.

3. THE NFT MARKER CAN BE USED FOR ANY TYPE OF ARTISTIC CREATION.

Edward Lee, (Prof., Law, Illinois Tech Chicago-Kent College of Law), UNIVERSITY OF ILLINOIS LAW REVIEW, 2023, 1076.

As computer programs, NFTs are extremely versatile. NFTs can be programmed to identify virtually anything. Although the most prominent uses reported by the media have involved artwork and visual images, often sold for millions of dollars, NFTs can be programmed to associate with limitless subject matter, ranging from artwork and collectibles to financial instruments and intellectual property rights to virtual real estate and even rights to have someone perform certain conduct, such as getting a tattoo. In other words, NFTs can be used to "tokenize" subject matter as far as human imagination runs. Whatever can be owned can be made into a virtual token or NFT. One benefit of doing so is having a permanent public record of it.

Randy Ginsburg, (Staff, NFT Now), LITERARY NFTS: HERE'S HOW WRITERS CAN LEVERAGE THEIR PASSION IN WEB3, Sept. 28, 2022. Retrieved Dec. 15, 2022 from https://nftnow.com/guides/literary-nfts-heres-how-writers-can-leverage-their-passion-in-web3/

The beauty of literary NFTs lies in their versatility. NFTs can showcase a written work, act as a digital collectible, or serve as a key to an exclusive fan community. Some creators may even release individual NFTs of fictional literary characters. While still in its infancy, plenty of literary NFT projects have popped up in the last year from independent and well-established creators.

Randy Ginsburg, (Staff, NFT Now), LITERARY NFTS: HERE'S HOW WRITERS CAN LEVERAGE THEIR PASSION IN WEB3, Sept. 28, 2022. Retrieved Dec. 15, 2022 from https://nftnow.com/guides/literary-nfts-heres-how-writers-can-leverage-their-passion-in-web3/

A major aspect of NFTs is the ability for creators to add unlockable content. This is specifically relevant for literary NFTs as now, instead of minting a block of plain text, creators have the freedom and flexibility to experiment with using different media forms such as photos, videos, and GIFs for the actual NFT while including the written work as downloadable content in the form of a PDF, .epub, or text file. It's good to note that the downloadable content doesn't need to be text. It can be anything, like an exclusive audio file, a link to an owner's only live reading, or a collection of work-in-progress titles that didn't make the cut.

4. THE NFT MARKER IS PRESERVING FINANCIAL REWARDS FOR HUMAN CREATORS.

Randy Ginsburg, (Staff, NFT Now), LITERARY NFTS: HERE'S HOW WRITERS CAN LEVERAGE THEIR PASSION IN WEB3, Sept. 28, 2022. Retrieved Dec. 15, 2022 from https://nftnow.com/guides/literary-nfts-heres-how-writers-can-leverage-their-passion-in-web3/

When it comes to earning power, writers have historically gotten the short end of the stick. Due to the vastly misaligned financial incentives of the traditional publishing industry, professional writers are often subject to low salaries and razor-thin royalty percentages, while the publishers and distributors capture the majority of the value. NFTs flip the value chain on its head, allowing creators to earn immediately, directly, and in some situations, consistently.

Amy Adler, (Prof., Law, New York University School of Law), NYU LAW REVIEW, 2023, 759.

In March 2021, the non-fungible token (NFT) revolution burst onto the art market. Christie's sold an NFT of a work by the digital artist Beeple for $69 million. It was the third most expensive work by a living artist sold at auction, placing Beeple directly behind Jeff Koons and David Hockney. (The Beeple work is also the most expensive single NFT sold to date in any market, not just the art market.)

Chelsea Cohen, (JD Candidate, Loyola Law School, Los Angeles), HASTINGS COMMUNICATION & ENTERTAINMENT LAW JOURNAL, Winter 2023, 47.

NFTs create a way for artists to sell virtual merchandise, album posters, tickets to exclusive virtual shows, and songs as digital tokens. The potential profits that can be generated from this new evolution of music and the internet are huge. This is evidenced by Kings of Leon, who became the first band to fully release an album as an NFT which grossed over two million dollars in its first week.

Chelsea Cohen, (JD Candidate, Loyola Law School, Los Angeles), HASTINGS COMMUNICATION & ENTERTAINMENT LAW JOURNAL, Winter 2023, 59.

The decentralized universe introduces the unique concept of digital property rights. With the introduction of these rights, more opportunities open for songwriters and publishers to profit from downstream, second-market royalties.

5. THE NFT MARKER MAKES UP FOR THE SHORTCOMINGS OF COPYRIGHT.

Edward Lee, (Prof., Law, Illinois Tech Chicago-Kent College of Law), UNIVERSITY OF ILLINOIS LAW REVIEW, 2023, 1051.

The Copyright Act was designed for the printing press, not the Internet. The Act did not anticipate how transitory copies would become a natural part of the process of simply viewing material, making innocent acts potentially infringement, or how digital copies profoundly alter the economics of cultural production and the ease of infringement, as well as pose challenges under doctrines once thought fundamental, such as the first-sale doctrine.

Amy Adler, (Prof., Law, New York University School of Law), NYU LAW REVIEW, 2023, 708.

Why buy something for vast sums of money that other people can seemingly have for free? This is one of the puzzles confronting people new to both the art market and the market in Non-Fungible Tokens ("NFTs"). Both soaring markets depend on a stark division between real and fake, original and copy. Yet in a world of increasingly cheap and limitless copying, why do people still pay so much for authentic originals when you can download or 3D-print identical copies? What is the mysterious mechanism that creates value in a world of unfettered mechanical and digital reproduction? For years, the mechanism was copyright law, which was created to solve the problem of how to monetize works that could be copied. But the art market, presaging the NFT market, long ago cast aside copyright as the mechanism to create value in a world of copies. Both markets instead depend on a non-legal market mechanism - what I call the "norm of authenticity."

Edward Lee, (Prof., Law, Illinois Tech Chicago-Kent College of Law), UNIVERSITY OF ILLINOIS LAW REVIEW, 2023, 1054.

If the copyright system is intended to promote the arts, incentivize artists to create, and enable authorship to be a full-time occupation, NFTs have already shown greater promise in achieving that goal. Artists no longer need to be approved by industry gatekeepers to succeed. De-IP [decentralized intellectual property] puts creators back in control. And the primary vehicle for De-IP is the new technology called the NFT. An NFT is a virtual token that is created by computer code (what's called a smart contract) that identifies the token as unique - or "non-fungible" - on blockchain, a peer-to-peer network that operates as a permanent public ledger. Artists can use NFTs to associate the tokens with copyrighted works by including, within the smart contract, a link to a digital file containing a digital copy of the work, such as a pictorial work, musical work, or audio-visual work.

COPYLEFT IS SUPERIOR TO COPYRIGHT.

1. COPYLEFT MEANS OPEN ACCESS RATHER THAN CLOSED ACCESS TO MATERIAL.

Ali Johnson, (JD Candidate), WASHINGTON LAW REVIEW, Oct. 2021, p. 1254.

One philosophy of protection is known as " Copyleft." Originally coming from software programmers, the Copyleft approach believes that "an abundance of expressive material in the public domain is essential to a healthy society." This philosophy is embodied in Creative Commons, "an organization founded in 2001 that embraces the idea of "some rights reserved' and provides tools by which authors can give others "the right to share, use, and even build upon' their work."

Bobby Owsinski (Music 3.0), COPYRIGHT? NO COPYLEFT AND YES, IT'S REALLY A THING, Hypebot, Copyright Law, July 7, 2023. Retrieved May 21, 2024 from https://www.hypebot.com/hypebot/2023/07/copyright-no-copyleft-and-yes-its-really-a-thing.html

While copyright restricts what you can do with the work under license, copyleft spells out all the things that are legal under the license. Think of a Creative Commons license where it gives you the right to use, copy, modify, or distribute something. That's copyleft in action.

2. THE PRESENT SYSTEM IS MOVING TOWARD OPEN SOURCE – OR COPYLEFT.

Timothy Murphy, (Prof., Law, U. of Idaho College of Law), FORDHAM INTELLECTUAL PROPERTY MEDIA & ENTERTAINMENT LAW JOURNAL, Summer 2020, p. 1048.

Prior to the 1990's, the notion that thousands of developers would pour their creative effort and countless hours into projects with little-to-no hope of financial reward may have sounded ludicrous, or at least one could be excused for being skeptical. However, the current popularity, and ubiquity, of OSS [open source software] bears testament to exactly that result. OSS is widely available on the internet and boasts millions of projects covering all manner of applications. Moreover, Android is the open source operating system software running on approximately 75% of the world's mobile phones, and the Linux open source operating system is running approximately 47% of the websites available on the internet.

2. INCREASED COPYRIGHT PROTECTION UNDERMINES OPEN SOURCE.

Daniel Seng, (Prof., Law, Center for Technology, Robotics, AI, and the Law). ARTIFICIAL INTELLIGENCE AND INTELLECTUAL PROPERTY, 2021, pp. 313-314.

We are already witnessing the same phenomenon in the copyright space. Under the guise of copyright infringement, takedown notices have been used as tools to smother competition and stifle discussion about public issues. Right holders may behave in an 'overzealous and overreaching' manner, by attempting to take down non-copyrighted content, or copyrighted content which it did not own, in an attempt to stymie the network service provider. The rise of 'opportunistic copyright trolls', where right holders (and their complicit lawyers) engage in 'speculative invoicing' in an attempt to strike sufficient fear, uncertainty, and doubts about possible criminal prosecution and large amounts of damages in the minds of targeted consumers to get them to settle for disproportionately large sums of money, is really enabled by a combination of automated detection and large scale enforcement against consumer piracy.

Mark Bartholomew, (Prof., Law, U. of Buffalo School of Law), INTELLECTUAL PROPERTY AND THE BRAIN: HOW NEUROSCIENCE WILL RESHAPE LEGAL PROTECTION FOR CREATIONS OF THE MIND, 2022, p. 18.

When every social media post and selfie snap, no matter how pedestrian, becomes the subject of a copyright for more than a century, the amount of material available in the public domain for true artistic output shrinks. Meanwhile, the population becomes an unwitting army of infringers as they violate copyright each time they resend or repost someone else's expression.

3. COPYLEFT BEST PROMOTES INNOVATION.

Reagan Joy, (JD), CASE WESTERN RESERVE, Summer 2022, p. 991.

The Copyleft movement stands on the opposite side of the copyright bargain from copyright law: where copyright law gives a monopoly to a creator to encourage creation, the Copyleft movement believes that the monopoly grant is not necessary to incentivize creation and actually inhibits innovation.

4. COPYLEFT PROMOTES COLLABORATION.

Gayathri Poti (Contributor in the NASSCOM Community), COPYLEFT LICENSES: RISKS OF OPEN SOURCE CODE IN PROPRIETARY SOFTWARE DEVELOPMENT, NASSCOM Community, December 10, 2022. Pgs. 2-3. Retrieved May 20, 2024 from https://community.nasscom.in/communities/application/copyleft-licenses-risks-open-source-code-proprietary-software-development

The birth of the copyleft movement is attributed to Richard Stallman, a former MIT professor, who noticed that the increasing popularity of proprietary software in the late 1970's was making it difficult for programmers to engage in ubiquitous activities such as sharing and collaborative development of software. Stallman predicted that software had the potential to advance mankind and terms that dictated restrictions on software usage would impede this progress. He believed that programmer comradeship was an indispensable facet of software evolution. According to him, programmers ought to be encouraged to learn from each other's work and brainstorm collective solutions. This solidarity was being threatened by the commercialization of software through which knowledge was being monopolized. Stallman decided that the antidote to the growing culture of software proprietorship, which hampered contribution to the marketplace of ideas, was to create software that would be licensed on terms that would not only allow for free distribution but also barred proprietary modifications. Thus began the advent of the copyleft era with the word 'copyleft' being a sardonic take on the copyright regime.

5. COPYLEFT BEST PROMOTES KNOWLEDGE DISSEMINATION.

Bobby Owsinski (Music 3.0), COPYRIGHT? NO COPYLEFT AND YES, IT'S REALLY A THING, Hypebot, Copyright Law, July 7, 2023. Retrieved May 21, 2024 from https://www.hypebot.com/hypebot/2023/07/copyright-no-copyleft-and-yes-its-really-a-thing.html

As said before, copyleft is something that you've probably used before without knowing it. It's not only useful in today's digital economy, but essential, and it helps us to share art and knowledge with the world.

Jessica Silbey, (Prof., Law, Boston U. School of Law), MARQUETTE INTELLECTUAL PROPERTY & INNOVATION LAW REVIEW, Winter 2023, 15.

Because copying and borrowing are essential to the work being done, everyday creators and innovators often ignore intellectual property rules that restrict borrowing and sharing. These accounts describe a much more tolerant, more generous regime in which the public domain is richer and bigger. This resonates with the original purpose and structure of the Constitution's progress clause, underscoring its role in the production and dissemination of fundamental knowledge with a much narrower scope and duration for intellectual property exclusivity. Thus, overly aggressive assertions of IP really bother everyday creators. I know this because they describe others' claims of exclusivity as norm-breaking – violent and uncivil – suggesting a breakdown in the rules of community engagement.

6. COPYLEFT BEST PROTECTS AGAINST EVIL USES OF AI – SHARING ALLOWS FOR PUBLIC SCRUTINY.

Rae Lynn Mitchell (Texas A&M University School of Public Health), A WAY TO GOVERN ETHICAL USE OF ARTIFICIAL INTELLIGENCE WITHOUT HINDERING ADVANCEMENT, Texas A&M Today, Science & Tech, February 16, 2023. Retrieved May 21, 2024 from https://today.tamu.edu/2023/02/16/a-way-to-govern-ethical-use-of-artificial-intelligence-without-hindering-advancement/

"Efforts to promote ethical and trustworthy AI must go beyond what is legally mandated as the baseline for acceptable conduct," Wagner said. "We can and should strive to do better than what is minimally acceptable." Once implemented, Copyleft AI with Trusted Enforcement (CAITE) will guard against the potential harms of AI without hindering technological advances. The researchers say that as AI continues to expand into more of our daily lives, the value of a responsive ethical framework will become crucial.

Rae Lynn Mitchell (Texas A&M University School of Public Health), A WAY TO GOVERN ETHICAL USE OF ARTIFICIAL INTELLIGENCE WITHOUT HINDERING ADVANCEMENT, Texas A&M Today, Science & Tech, February 16, 2023. Retrieved May 21, 2024 from https://today.tamu.edu/2023/02/16/a-way-to-govern-ethical-use-of-artificial-intelligence-without-hindering-advancement/

The Copyleft AI with Trusted Enforcement (CAITE) model is built on an ethical use license. This license would restrict certain unethical AI uses and require users to abide by a code of conduct. Importantly, it would use a copyleft approach to ensure that developers who create derivative models and data must also use the same license terms as the parent works. The license would assign the enforcement rights of the license to a designated third-party known as a CAITE host. In this way, the enforcement rights for all these ethical use licenses would pool in a single organization, empowering the CAITE host as a quasi-government regulator of AI.

Rae Lynn Mitchell (Texas A&M University School of Public Health), A WAY TO GOVERN ETHICAL USE OF ARTIFICIAL INTELLIGENCE WITHOUT HINDERING ADVANCEMENT, Texas A&M Today, Science & Tech, February 16, 2023. Retrieved May 21, 2024 from https://today.tamu.edu/2023/02/16/a-way-to-govern-ethical-use-of-artificial-intelligence-without-hindering-advancement/

The authors note that using a nongovernment party designated by the AI developer community could allow for greater flexibility in enforcement and trust in oversight. Copyleft AI with Trusted Enforcement (CAITE) hosts can set consequences for unethical actions such as financial penalties or reporting instances of consumer protection law violations. At the same time, the CAITE approach allows for leniency policies that can promote self-reporting and gives flexibility that typical government enforcement schemes often lack. For example, incentives for AI users to report biases that they discover in their AI models could enable the CAITE host to warn other AI users who are relying on those potentially dangerous AI models.

THE ”SAFE HARBOR” PROVISION OF SECTION 230 SHOULD BE PRESERVED

1. THE INTERNET IS THE PROTOTYPICAL MARKETPLACE OF IDEAS.

Patrick Ganninger, (JD Candidate, St. Louis U. School of Law), THE ROLE OF SOCIAL MEDIA IN THE MARKETPLACE OF IDEAS, Mar. 21, 2021. Retrieved Dec. 6, 2023 from https://scholarship. law.slu.edu/cgi/viewcontent.cgi?article=1059&context=lawjournalonline

Today, the rise of the internet and social media has allowed for instantaneous communication between politicians and members of the public. This obviously has many benefits, as the internet has arguably become the most effective means of disseminating ideas and promoting discourse in human history.

2. SECTION 230 VIRTUALLY CREATED THE INTERNET.

Reese D. Bastian, (JD Candidate), TEXAS A&M JOURNAL OF PROPERTY LAW, Spr. 2022, 49.

Section 230 is the glue that holds the Internet - as we know it today - together. Its history is telling, and it started in the early days of the Internet. Section 230 says, "No provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider." Simply put, Section 230 says that websites or platforms are not liable for content posted by third parties.

Tessa Patterson, (JD Candidate), ARIZONA STATE LAW JOURNAL, Spring 2022, 306.

The Internet and the companies it hosts would not be what they are today without the protections of *Section 230*. Known as the "twenty-six words that created the Internet," *Section 230* is a federal statute that shields online companies from liability for user-generated content. This liability shield has allowed online companies to innovate and for the Internet to flourish.

Bailey Barnes, (Antitrust Attorney, Oklahoma), OKLAHOMA LAW REVIEW, Spring 2022, 438.

When Congress enacted *Section 230* in 1996, global internet users topped out around sixteen million. As of January 2021, it had grown to nearly five billion users. Over this time, access to the internet evolved into a basic human right. *Section 230* has been credited as a "catalyst" for the immense growth of the tech industry in the United States.

Courtney Kim, (JD, U. Southern California School of Law), SOUTHERN CALIFORNIA LAW REVIEW, 2022, 467.

Overall, *section 230* serves three core purposes. First, it "maintain[s] the robust nature of internet *communication* and, accordingly… keep[s] government interference in the medium to a minimum.” Second, the immunity provided by *section 230* "protects against the "heckler's veto' that would chill free speech," as without *section 230*, individuals could threaten litigation against interactive computer service providers, which would be forced to choose to either remove the content or face litigation costs and potential liability. Third, *section 230* encourages interactive computer service providers to self-regulate "offensive" material as a response to the holding in *Stratton Oakmont*, in which the provider of an electronic message-board service was "potentially liable for its user's defamatory message because it had engaged in voluntary self-policing of the third-party content."

Thomas Ryan, (JD Candidate), UIC JOHN MARSHALL LAW REVIEW, Summer 2021, 324.

Twenty-six words created the internet in 1996. These words read, "No provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider." These twenty-six words under subsection c of Section 230 of the Communication Decency Act were set up to address the internet and the arising issues. Their result was broad immunity for websites and internet service providers.

3. REPEAL OF SECTION 230 WOULD CRIPPLE THE MARKETPLACEC OF IDEAS.

Danielle Keats Citron, (Prof., Law, Boston U. School of Law), U. OF CHICAGO LEGAL FORUM, 2020, 57.

Section 230 enthusiast Elizabeth Nolan Brown argues that "Section 230 is the Internet's First Amendment." David Williams, president of the Taxpayers Protection Alliance, similarly contends that, "The internet flourishes when social media platforms allow for discourse and debate without fear of a tidal wave of liability. Ending Section 230 would shutter this marketplace of ideas at tremendous cost." Professor Eric Goldman claims that Section 230 is "even better than the First Amendment."

Jason Kelley, (Analyst, Electronic Frontier Foundation), SECTION 230 IS GOOD, ACTUALLY, Dec. 3, 2020. Retrieved Dec. 6, 2023 from https://www.eff.org/deeplinks/2020/12/section-230-good-actually

Without Section 230, the Internet would be a very different place, one with fewer spaces where we're all free to speak out and share our opinions. One of the Internet's most important functions is that it allows people everywhere to connect and share ideas—whether that's on blogs, social media platforms, or educational and cultural platforms like Wikipedia and the Internet Archive.

Tessa Patterson, (JD Candidate), ARIZONA STATE LAW JOURNAL, Spring 2022, 234.

The current language of *Section 230* should remain due to the harm that narrowing would cause to the marketplace of ideas, the heightened barrier to entry, and the slippery slope to government censorship. Instead of taking government action by narrowing the law, issues such as those discussed above are better resolved with private action.

4. REPEAL OF SECTION 230 WOULD NOT JUST HURT BIG MEDIA COMPANIES – IT WOULD SILENCE INDIVIDUAL USERS.

Jason Kelley, (Analyst, Electronic Frontier Foundation), SECTION 230 IS GOOD, ACTUALLY, Dec. 3, 2020. Retrieved Dec. 6, 2023 from https://www.eff.org/deeplinks/2020/12/section-230-good-actually

No, Section 230 is not a "hand-out to Big Tech," or a big tech "immunity, " or a "gift" to companies. Section 230 protects you and the forums you care about, not just "Big Tech." Section 230 protects Internet intermediaries—individuals, companies, and organizations that provide a platform for others to share speech and content over the Internet. Yes, this includes social networks like Facebook, video platforms like YouTube, news sites, blogs, and other websites that allow comments. It also protects educational and cultural platforms like Wikipedia and the Internet Archive.

Malfriður Helgadottir, (Executive Editor), CARDOZO ARTS AND ENTERTAINMENT LAW JOURNAL, 2022, 309.

The Internet would be drastically different from how we know it today without Section 230 and removing its protections would unfairly punish internet users everywhere: Of course, the ultimate beneficiaries of Section 230 are all of us who want online intermediaries to exist so that we can post things online without having to code it ourselves, and so that we can read and watch content that others create. Intermediaries, be they social media platforms, news sites, or email forwarders, aren't protected by Section 230 for their own sake. They're protected so that they can be available to all of us who rely on them.

Nina Brown, (Prof., Law, Cornell Law School), TEXAS A&M LAW REVIEW, Spr. 2021, 463.

Despite the businesses - large and small - that benefit from section 230, the ultimate beneficiaries are the users of interactive computer services. Without section 230's protections, users would not find an online space to quickly create and share thoughts, photos, and videos, and view those posted by others. The ability to freely comment on posts created by others would be stifled, as would the ability to write - or read - product reviews.

REPEAL OF SECTION 230 WOULD SEVERELY DAMAGE FREEDOM OF SPEECH.

1. REPEAL OF SECTION 230 WOULD RESULT IN CENSORSHIP.

Jason Kelley, (Analyst, Electronic Frontier Foundation), SECTION 230 IS GOOD, ACTUALLY, Dec. 3, 2020. Retrieved Dec. 6, 2023 from https://www.eff.org/deeplinks/2020/12/section-230-good-actually

Online platforms' censorship has been shown to amplify existing imbalances in society—sometimes intentionally and sometimes not. The result has been that more often than not, platforms are more likely to censor disempowered individuals and communities' voices. Without Section 230, any online service that did continue to exist would more than likely opt for censoring more content—and that would inevitably harm marginalized groups more than others.

2. WEBSITES SUCH AS WIKIPEDIA WOULD CEASE TO EXIST.

Tessa Patterson, (JD Candidate), ARIZONA STATE LAW JOURNAL, Spring 2022, 325.

Platforms such as Wikipedia provide a completely free wealth of information accessible to anyone with an internet connection. Unless the site was willing to bear all of the risk and liability associated with its user-generated content, without *Section 230*, Wikipedia would never have become what it is today--one of the "largest repositor[ies] of free knowledge in the world."

3. SECTION 230 PROMOTES SOCIAL MOVEMENTS SUCH AS "ME TOO."

Tessa Patterson, (JD Candidate), ARIZONA STATE LAW JOURNAL, Spring 2022, 325.

Additionally, social media has served as a platform for social change by hosting the opinions and calls to action of its users. For example, in 2017, women took to social media and flooded users' feeds with two simple words: "me too." The movement was credited for leading to the sexual assault convictions of several high-profile men, including Bill Cosby, Larry Nassar, and Harvey Weinstein. Most recently, social media has bolstered the Black Lives Matter movement, allowing users to post photos online, share "protest guides," and efficiently spread email and phone templates to help users contact their representatives. If *Section 230* were narrowed, these movements involving sensitive and controversial topics might have never happened.

4. REPEAL OF SECTION 230 MEANS GOVERNMENT CONTROL OF THE INTERNET.

Tessa Patterson, (JD Candidate), ARIZONA STATE LAW JOURNAL, Spring 2022, 330.

In conclusion, the current protections afforded under *Section 230* should remain. Maintaining the current scope of *Section 230* will eliminate companies' concerns about liability for user-generated content, allowing the marketplace of ideas to continue to flourish and social media sites to host controversial, albeit necessary, content. Also, it will help keep competition high and the barrier to entry low for emerging startups. Finally, it will allow for social media to remain unfettered by governmental influence.

5. REPEAL OF SECTION 230 WOULD STIFLE INNOVATION AND COMPETITION.

Tessa Patterson, (JD Candidate), ARIZONA STATE LAW JOURNAL, Spring 2022, 327.

Beyond the marketplace of ideas, narrowing *Section 230* could also harm innovation by erecting high barriers to entry for startup companies. Stricter enforcement would create an increased need for resources to deal with inevitable future litigation and a larger workforce to meet the new moderation standard. Currently, Facebook employs 35,000 staff members to moderate content and carry out security measures, and it suspends more than one million fake accounts daily. Algorithms can assist in moderation, but this demand to closely moderate the Internet would put a huge expense on a new startup. If the cost becomes too high, social media startups may disappear and be replaced with a "desiccated, sanitized, corporate Internet--less like an electronic frontier than a well-patrolled office park."

SECTION 230 BEST FACILITATES THE REMOVAL OF OBJECTIONABLE CONTENT.

1. SECTION 230 PROTECTS INTERNET COMPANIES FROM LAWSUITS WHEN THEY REMOVE OBJECTIONABLE MATERIALS.

Tessa Patterson, (JD Candidate), ARIZONA STATE LAW JOURNAL, Spring 2022, 309.

In addition to shielding services from liability for third-party content, the law contains another immunity. *Section 230* also provides that an interactive computer service shall not be liable to the author for the "good faith" removal or restriction of content "that the provider or user considers to be obscene, lewd, lascivious, filthy, excessively violent, harassing, or otherwise objectionable, whether or not such material is constitutionally protected." This portion of the law encourages internet companies to make editorial decisions to remove offensive content.

2. INTERNET COMPANIES ARE ACTIVELY WORKING TO MODERATE THE CONTENT THAT THEY HOST.

Jessica Melugin, (Analyst, Competitive Enterprise Institute), PRESERVING SECTION 230 IS KEY TO MAINTAINING THE FREE AND OPEN INTERNET, June 23, 2021. Retrieved Dec. 6, 2023 from https://cei.org/studies/preserving-section-230-is-key-to-maintaining-the-free-and-open-internet/

For example, Facebook spent $130 million to set up an Oversight Board to review its content moderation decisions. The Board's website explains its purpose "is to promote free expression by making principled, independent decisions regarding content on Facebook and Instagram and by issuing recommendations on the relevant Facebook company content policy."

Nina Brown, (Prof., Law, Cornell Law School), TEXAS A&M LAW REVIEW, Spr. 2021, 453.

The surprise was that social platforms promised to take a proactive role in removing false and potentially harmful information related to the coronavirus. Facebook was first. It announced it would warn users after they interacted with posts containing "harmful" coronavirus misinformation and link those users to resources from the World Health Organization, the Centers for Disease Control, and local health authorities to combat the false information. Other platforms followed suit. YouTube removed thousands of videos containing false information about the coronavirus.

3. PRIVATE COMPANY CONTROL OF INTERNET CONTENT IS SUPERIOR TO GOVERNMENT CONTROL.

Nina Brown, (Prof., Law, Cornell Law School), TEXAS A&M LAW REVIEW, Spr. 2021, 488.

Allowing government regulation would unravel the promise of the Internet as a medium for the free exchange of thoughts and ideas.

Nina Brown, (Prof., Law, Cornell Law School), TEXAS A&M LAW REVIEW, Spr. 2021, 487.

Indeed, one of the core justifications for the speech freedoms within the First Amendment was a "pervasive and deep-seated mistrust of government." Although the online marketplace of ideas contains damaging and dangerous speech, allowing the government to control that marketplace is a greater threat.

Tessa Patterson, (JD Candidate), ARIZONA STATE LAW JOURNAL, Spring 2022, 329.

While China is an extreme example of censorship, it has demonstrated the harms caused by the government's over-moderation of speech. The majority of sites blocked by the government are ones that allow people to easily publish their own content and vocalize their opinions. The United States is unlikely to reach this degree of censorship; however, the website limitations in China do suggest that a certain amount of censorship will have curtailing effects on citizens' abilities to express their opinions. As previously discussed, where social media has *acted* as a platform for controversial movements, limiting users' ability to voice their opinions due to government censorship through a narrowed *Section 230* could have harmful effects on social rights movements.

Tessa Patterson, (JD Candidate), ARIZONA STATE LAW JOURNAL, Spring 2022, 329.

Freedom of expression played a heavy role in the crafting of *Section 230*. For instance, China employs the Golden Shield Project, also known as the Great Firewall, to filter keywords and block access to select sites. This has led to China temporarily "blacking out" several popular sites in the United States, like Wikipedia, Facebook, and Twitter, during the country's controversial periods.

Tessa Patterson, (JD Candidate), ARIZONA STATE LAW JOURNAL, Spring 2022, 330.

Although it is hard to imagine United States citizens being imprisoned for correcting misinformation perpetrated by the government, giving the government the ability to oversee moderation of the Internet could lead to harmful consequences. Political figures could be tempted to censor certain content under the guise of removing misinformation in order to improve the country's image to the rest of the world. Furthermore, if the government narrows *Section 230* and governs moderation, service providers may be less likely to fact check misinformation published by public officials due to fear of liability. Finally, a narrowed *Section 230* would likely worsen the content echo chambers that social media is prone to creating. As seen in China, a high degree of government moderation of content would essentially create a government-sponsored echo chamber in which only specific types of content could exist.

4. SECTION 230 DOES NOT SHIELD ILLEGAL CONDUCT – IT PROPERLY PLACES THE LIABILITY ON THE PERSONS RESPONSIBLE.

Tessa Patterson, (JD Candidate), ARIZONA STATE LAW JOURNAL, Spring 2022, 308.

It should be noted that *Section 230* does not create a blanket protection for authors or any speech posted online. A person spreading harassment or hate speech on Twitter is not protected by *Section 230* solely because the speech is published on an interactive computer service. Rather, if a victim of hate speech wants to take legal action, she should sue the author directly; *Section 230* merely protects the interactive computer service, or Twitter, in this case. This is because, under *Section 230*, Twitter is not the speaker of the hypothetical hate speech, but just the platform on which the speech was posted.

Jason Kelley, (Analyst, Electronic Frontier Foundation), SECTION 230 IS GOOD, ACTUALLY, Dec. 3, 2020. Retrieved Dec. 6, 2023 from https://www.eff.org/deeplinks/2020/12/section-230-good-actually

Section 230 is one of the most important laws protecting free speech online. While its wording is fairly clear—it states that "No provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider" —it is still widely misunderstood. Put simply, the law means that although you are legally responsible for what you say online, if you host or republish other peoples' speech, only those people are legally responsible for what they say.

REPEAL OF SECTION 230 WILL NOT SOLVE FOR BAD ACTORS ON THE INTERNET.

1. BAD ACTORS WILL SIMPLY MOVE OFFSHORE WHERE THEY CAN ESCAPE U.S. LAW.

Colin Martell, (Attorney), JOURNAL OF BSNS. ENTREPRENEURSHIP AND LAW, Spr. 2021, 56.

Those opposed to FOSTA-SESTA predicted this exact scenario where traffickers have been forced even further underground while consensual sex workers are exposed to more risk and liability. FOSTA-SESTA was passed on the assumption that eliminating communication between providers and consumers of illicit sex on traditional platforms would "strike a lethal blow to the trafficking industry." As seen with Switter, these traffickers have simply moved off United States servers and further away from United States regulatory reach.

2. REPEAL WOULD FORCE INTERNET COMPANIES TO HOST BAD ACTORS.

Malfriður Helgadottir, (Executive Editor), CARDOZO ARTS AND ENTERTAINMENT LAW JOURNAL, 2022,301.

Unlike the government, private social media companies can censor speech on their platforms that they deem intolerable. For example, social media companies have every right to remove despicable content from their platforms. The government might not have been able to interfere with the "Unite the Right" white supremacist rally, but private social media companies have every right to interfere with such content on their platforms. Moreover, there is also a crucial difference between applying First Amendment constraints to the government compared to private social media companies. Not only would the First Amendment prohibit these companies from engaging in any type of censorship on their platforms, but it would also force them to actually host the content on their platforms. This is problematic because it would make companies complicit.

3. DISINFORMATION CAMPAIGNS WOULD BENEFIT FROM REPEAL OF SECTION 230.

Michael Cheah, (General Counsel, The Internet Works, Adjunct Professor, University of Miami Law School), CARDOZO ARTS & ENTERTAINMENT LAW JOURNAL, 2022, 499.

Unlike defamatory statements, there is no obvious liability attached to the spread of vaccine misinformation online. Consequently, those who believe that platforms fail to vigorously remove vaccine misinformation because of Section 230 are mistaken, and their proposals to repeal the statute would not achieve their stated goals. On the other hand, a full repeal of the statute would be counterproductive because: (1) platforms would have to devote more time to removing content that creates legal risk and (2) platforms would face suit for removing vaccine misinformation.

4. REMOVING TERRORIST RECRUITMENT FROM THE INTERNET WILL NOT HELP IN THE FIGHT AGAINST TERRORISM.

Rachel VanLendingham, (Prof, Law, Southwestern Law School), CARDOZO LAW REVIEW, Oct. 2017. Retrieved DEC. 6, 2023 from Nexis.

Despite such congressional rhetoric tying social media companies to material support to terrorism, to date no social media platform has faced criminal prosecution in the United States for hosting third-party terrorism-related content on their platforms or for allowing particular groups to maintain accounts. This lack of prosecutorial effort is odd at first glance, given the statements by the Assistant Attorney General for National Security at the U.S. Department of Justice suggesting such prosecution. One strong reason for this reticence could be the immense benefit the intelligence community gains by open use of social media by terrorist groups; the U.S. security apparatus prefers to mine social media networks for intelligence, even going so far as asking providers to not suspend specific accounts.

REPEAL OF SECTION 230 CREATES SERIOUS DISADVANTAGES.

1. REPEAL OF SECTION 230 WOULD RESULT IN OVER-CENSORSHIP.

John LoNigro, (JD Candidate, Jacob Fuchsberg Law Center), TOURO LAW REVIEW, 2021, 490-491.

These [repeal] proposals, if passed into law, would likely cause interactive computer services to over censor if they wanted to make even the most reasonable restrictions on certain content and speech, i.e., restricting the use of racial slurs and other invidious forms of profanity. Since any type of restriction on a user's content outside those outlined in the statute will trigger publisher liability, the interactive computer service will have to choose between loosely regulating its service, allowing nearly all content, despite its possible relevance on a particular service, or the interactive computer service will have to exercise strict editorial control over nearly all content posted onto its service, in order to make even reasonable regulations that fall outside of the statute's text.

Lauren Rundall, (JD Candidate, U. Missouri School of Law), BUSINESS, ENTREPRENEURSHIP, AND TAX LAW REVIEW, Spr. 2021, 59.

Without Section 230, the internet would be quite a different place and not necessarily for the better. Over-censorship will lead to less public dialogue, and expensive lawsuits will harm consumers who likely will bear the burden of the costs social media platforms will face defending these suits.

Malfriður Helgadottir, (Executive Editor), CARDOZO ARTS AND ENTERTAINMENT LAW JOURNAL, 2022,299.

However, most experts agree that repealing Section 230 would lead to an outcome "that neither the left nor the right want to see: more censorship by major tech companies and potentially paralyzing other websites." Thus, repealing Section 230 is not the solution to combat any censorship concerns because without its protections, the increase of online censorship would be astronomical.

Meghan McDermott, (JD, U. Connecticut School of Law), CONNECTICUT LAW REVIEW, Jan. 2023, 4.

Amending Section 230 would likely reduce the spread of misinformation, but it would also have the practical effect of suppressing harmless, and even socially beneficial, discourse on social media.

Nina Brown, (Prof., Law, Cornell Law School), TEXAS A&M LAW REVIEW, Spr. 2021, 474.

In all likelihood, speech harms will continue to exist even in a world without section 230 protection. Removing this immunity (or threatening to remove it by making its protections contingent upon satisfaction of certain requirements) may indeed create incentives for platforms to minimize speech harms, but this will come at a steep cost: over-removal of speech. The bottom line is that penalizing platforms by removing section 230 protection does not induce platforms to create a safer space - it induces them to minimize risk.

Nina Brown, (Prof., Law, Cornell Law School), TEXAS A&M LAW REVIEW, Spr. 2021, 476.

With a threat of liability looming - in spades, because removing section 230 opens the floodgates to plaintiffs hungry for a deep-pocketed defendant - this framework incentivizes platforms to remove all speech that could be interpreted near that line. This increased legal pressure on social platforms almost certainly would result in "overly aggressive, unaccountable self-policing, leading to arbitrary and unnecessary restrictions on online behavior."

2. REPEAL OF SECTION 230 WOULD ADVANTAGE LARGE INTERNET COMPANIES OVER SMALL ONES.

Will Duffield, (Adjunct Scholar, Cato Institute), REPEALING SECTION 230 WOULD LIMIT AMERICANS' SPEECH. Dec. 6, 2023. Retrieved Dec. 6, 2023 from https://www.cato.org/commentary/repealing-section-230-would-limit-americans-speech

Apart from suppressing speech, repealing Section 230 would suppress competition, agglomerating activity onto large platforms such as Facebook. Without Section 230, Facebook, but not V8Buick.com, could afford to litigate controversies over user speech.

Tyler Dillon, (JD), FEDERAL COMMUNICATIONS LAW JOURNAL, Feb. 2022, 172.

Behemoths like Facebook with billions of dollars in revenue can withstand increased legal and compliance fees; their smaller competitors, however, likely would not be able to and will die, reduce services, or pivot away from social media. Untargeted regulation will therefore help secure the power of large social media platforms by inhibiting their competitors.

Arlette Leyba, (JD, Rutgers Law School), RUTGERS BUSINESS LAW JOURNAL, Spr. 2022, 166.

Disrupting these protections afforded by this *act* will further encourage the monopolization. Although it will be difficult for any company to thrive in a post CDA 230 world, it would be impossible for small businesses fighting for a chance to pose as competition in the realm of public forums. Small online companies do not have the financial stability like Facebook to litigate the liability issues that would surely arise. If small companies cannot compete, the tech giants that Congress is so fervently against will gain more power and create a larger monopolization of internet service providers available to the public. Therefore, if Congress' argument is that *Section 230* is supporting the monopolization of the internet, while there may be truth to that argument, it is incomplete because a repeal would not end the issue.

Jason Kelley, (Analyst, Electronic Frontier Foundation), SECTION 230 IS GOOD, ACTUALLY, Dec. 3, 2020. Retrieved Dec. 6, 2023 from https://www.eff.org/deeplinks/2020/12/section-230-good-actually

No, reforming Section 230 will not hurt Big Tech companies like Facebook and Twitter–but it will hurt smaller platforms and users. Some people wrongly think that eliminating Section 230 will fix their (often legitimate) concerns about the dominance of online services like Facebook and Twitter. But that won't solve those problems - it will only ensure that major platforms never face significant competition.

Jason Kelley, (Analyst, Electronic Frontier Foundation), SECTION 230 IS GOOD, ACTUALLY, Dec. 3, 2020. Retrieved Dec. 6, 2023 from https://www.eff.org/deeplinks/2020/12/section-230-good-actually

Section 230 doesn't just protect the big companies you've heard of—it protects all intermediaries equally. Removing that protection would open every intermediary up to lawsuits, forcing all but the largest of them to shut down, or stop hosting user-generated content altogether. And it would be much more difficult for new services that host speech to enter the online ecosystem.

Malfriður Helgadottir, (Executive Editor), CARDOZO ARTS AND ENTERTAINMENT LAW JOURNAL, 2022, 308.

In addition, repealing Section 230 or amending it to require stricter censorship obligations would make it significantly harder for new marketplace entrants. In any event, repealing or amending Section 230 is far more likely to hurt users and smaller internet platforms.

Tyler Dillon, (JD), FEDERAL COMMUNICATIONS LAW JOURNAL, Feb. 2022, 190.

One of the original authors of section 230, now-Senator Ron Wyden, argued that "if you unravel 230, then you harm the opportunity for diverse voices, diverse platforms, and, particularly, the little guy to have a chance to get off the ground."

STRENGTHENING COPYRIGHTS IMPEDES THE "RIGHT TO REPAIR"

1. THE RIGHT TO REPAIR IS VITALLY IMPORTANT.

Aaron Perzanowski, (Prof., Law, Case Western Reserve U. Law School), THE RIGHT TO REPAIR: RECLAIMING THE THINGS WE OWN, 2022, p. 11.

The ability to fix the technology we rely on can save us billions of dollars. It can help us reduce the staggering harms to the planet that flow from the extraction of raw materials, their conversion into consumer devices, and their eventual disposal. And repair helps us develop knowledge and skills that foster autonomy and build community.

Aaron Perzanowski, (Prof., Law, Case Western Reserve U. Law School), THE RIGHT TO REPAIR: RECLAIMING THE THINGS WE OWN, 2022, p. 29.

Repair can stanch the flow of electronic waste that is clogging landfills, tainting soil, and poisoning water around the globe. If repair were more affordable and widely available, we could significantly extend the average lifespan of the devices we buy. In a world in which cell phones lasted for five years rather than two, or televisions still worked for a decade or more, we would expect to see a precipitous drop in annual e-waste pollution. Repair keeps devices in the hands of owners and out of landfills.

2. STRONGER COPYRIGHT PROTECTION UNDERMINES THE "RIGHT TO REPAIR."

Aaron Perzanowski, (Prof., Law, Case Western Reserve U. Law School), THE RIGHT TO REPAIR: RECLAIMING THE THINGS WE OWN, 2022, p. 110.

As we've seen, firms deploy a variety of tools to limit repair and capture its value. So far though, we've postponed discussion of arguably the most powerful of them. Intellectual property (IP)—in the form of copyrights, patents, trademarks, and trade—offers manufacturers an arsenal of weapons in the war on repair. From a practical perspective, IP law allows firms to credibly threaten to enjoin, silence, and ultimately bankrupt anyone with the audacity to repair a product without permission.

Aaron Perzanowski, (Prof., Law, Case Western Reserve U. Law School), THE RIGHT TO REPAIR: RECLAIMING THE THINGS WE OWN, 2022, p. 9.

Copyright law has been central to Deere's strategy to shut competitors out of the lucrative market for farm-equipment repair. Since the software code on ECUs is protected by copyright, Deere believes it can legally prevent farmers and repair shops from accessing that code. The Digital Millennium Copyright Act (DMCA) makes it unlawful to remove or bypass digital locks that restrict access to copyrighted materials. The law was meant to help protect movies, video games, and other works from online copyright infringement. But under Deere's theory, it applies with equal force to its tractors.

Aaron Perzanowski, (Prof., Law, Case Western Reserve U. Law School), THE RIGHT TO REPAIR: RECLAIMING THE THINGS WE OWN, 2022, p. 9-10.

After a years-long battle, farmers convinced the US Copyright Office to grant them a temporary, three-year exemption from the DMCA in 2015. It insulated farmers from liability for accessing software in order to diagnose, repair, or modify their tractors. The exemption was renewed for another three years in 2018, and the Copyright Office will consider it again in 2021. Nonetheless, the practical hurdles to unlocking Deere's code and remaining sources of legal risk limit the impact of the exemption. As a result, many farmers rely on unlicensed copies of Deere software downloaded from Ukrainian hackers just to keep their tractors running.

COPYRIGHT EXCEPTIONS FOR TERRESTRIAL RADIO STATIONS ARE JUSTIFIED

1. BROADCASTERS PERFORM VITAL PUBLIC SERVICES.

Free Radio Alliance, THERE'S NOTHING FAIR ABOUT THE AMERICAN MUSIC FAIRNESS ACT, June 24, 2021. Retrieved Mar. 10, 2024 from https://www.freeradioalliance.org/blog/theres-nothing-fair-about-the-american-music-fairness-act/

Radio's biggest differentiator is that it functions as a public service to local communities – that has never been more true than during the COVID-19 pandemic, when Americans turned to their local stations for critical information and a connection to the community. Radio stations deliver local news, traffic, weather reports and emergency broadcasts, as well as provide free airtime for local charities. This is in addition to being a free entertainment medium available to anyone, anywhere.

Steve Chabot, (U.S. Representative, Ohio), RESPECTING ARTISTS WITH THE AMERICAN MUSIC FAIRNESS ACT, Feb. 2, 2022. House Hearing, p. 7.

Additionally, unlike other platforms, local broadcasters don't only play music. They also serve a public interest. They serve communities across the United States, local news, community-relevant programming, critical life-saving emergency alerts, and are often a vital partner with local charities and public causes. When the power and internet stop working, radio continues to broadcast life-saving notices and they have been especially helpful during the on-going coronavirus pandemic. other platforms, local broadcasters don't only play music.

W. Craig Fugate, (Former Administrator, Federal Emergency Management Agency), RESPECTING ARTISTS WITH THE AMERICAN MUSIC FAIRNESS ACT, Feb. 2, 2022. House Hearing, p. 13.

Local broadcasters, from the smallest to the largest, are vital to maintaining public safety in times of emergency, be they hurricanes, tornadoes, floods, infrastructure collapses, mass shooting events or other terrorist attacks. Additionally, our local radio stations serve as the backbone of our nation's National Public Warming System, which is a critical national security communications infrastructure in the event of an attack or other cataclysmic event warranting a Presidential message to the American people. The indispensability of local broadcasters to the safety and security of the American public demands that Congress think long and hard before adopting measures, regardless of how they may be characterized, that diverts resources from local broadcasters' news, information, and weather coverage.

Wendy Paulson et al. (Representatives of State Broadcaster's Associations), RESPECTING ARTISTS WITH THE AMERICAN MUSIC FAIRNESS ACT, Feb. 2, 2022. House Hearing, p. 17.

Local radio has played a crucial role in communities across the country for more than a century. Listeners tune in to discover new music, listen to old favorites, find out about the day's weather and community events, and learn critical information in times of natural disasters and other emergencies. Radio provides all of these services for free.

2. REQUIRING THE PAYMENT OF ROYALTIES WILL CRIPPLE BROADCASTERS.

James Winston, (President, National Association of Black Owned Broadcasters), RESPECTING ARTISTS WITH THE AMERICAN MUSIC FAIRNESS ACT, Feb. 2, 2022. House Hearing, p. 15.

On behalf of the National Association of Black Owned Broadcasters, I write in opposition to H.R. 4130 – the American Music Fairness Act. This legislation would impose a new performance royalty on local radio stations, potentially financially crippling many local radio stations, and harming millions of listeners who rely on local radio for news, emergency information, weather updates and entertainment.

3. NEW ARTISTS ARE DISCOVERED BY TERRESTRIAL RADIO EXPOSURE.

Amador Bustos, (President, Bustos Media), RESPECTING ARTISTS WITH THE AMERICAN MUSIC FAIRNESS ACT, Feb. 2, 2022. House Hearing, p. 11.

Broadcast radio in general, and ethnic radio in particular, continues to be a significant driver of music discovery, shining the spotlight on new musicians and helping legacy artists sustain their careers. Yet, under the proposed performance fee, up-and-coming artists would suffer, while the bigger and already established artists, and their multinational record labels, would greatly benefit. To avoid paying higher fees, radio stations would focus their airplay on the most popular performing artists to attempt to draw a larger audience at minimal cost.

Curtis Legeyt, (CEO, National Association of Broadcasters), RESPECTING ARTISTS WITH THE AMERICAN MUSIC FAIRNESS ACT, Feb. 2, 2022. House Hearing, p. 65.

When 239 million listeners hear a new artist or song they like on the radio, consumers then engage with that artist in other ways, whether it's streaming, through social media, or attending live events – all of which adds up to significant income for performers through the promotional value of radio.

Curtis Legeyt, (CEO, National Association of Broadcasters), RESPECTING ARTISTS WITH THE AMERICAN MUSIC FAIRNESS ACT, Feb. 2, 2022. House Hearing, p. 65.

To put the reach of local broadcasting in context, a single song played during the morning drive on Spanish Broadcasting System's salsa and English/Spanish language adult contemporary station WCMQ-FM in Miami, Florida, is the equivalent of more than 15,200 unique streams on Spotify or Pandora.

Free Radio Alliance, THERE'S NOTHING FAIR ABOUT THE AMERICAN MUSIC FAIRNESS ACT, June 24, 2021. Retrieved Mar. 10, 2024 from https://www.freeradioalliance.org/blog/theres-nothing-fair-about-the-american-music-fairness-act/

Radio is still one of the best ways to introduce artists' music to their fans. A performance tax would upend a mutually beneficial relationship between radio and artists that has thrived for more than a century.

5. ROYALTY PAYMENT REQUIREMENT WOULD BENEFIT BIG MUSIC CORPORATIONS, NOT INDIVIDUAL ARTISTS.

Cory Doctorow & Rebecca Giblin, (Music Journalists), WHY STREAMING DOESN'T PAY, Oct. 3, 2022. Retrieved Mar. 11, 2024 from https://www.promarket.org/2022/10/03/why-streaming-doesnt-pay/

Not surprisingly, they created another winner-takes-all system that disproportionately benefits the very top artists and the very top labels. As David Turner explains, "oligopolistic strong-arming by major labels occurred with the emergence of each new streaming service, ensuring the royalty setup would be pro-label, not musicians." That's why their profits are ballooning even as their artists see their share plummet.

Seton Motley, (Analyst, Heartland Institute), BIG BUSINESS' RIP-OFF OF MUSICIANS HAS GONE BIG GOVERNMENT CRONY, Feb. 16, 2022. Retrieved Mar. 11, 2024 from Nexis Uni.

Most of the time, this ends up happening: "(F)or every $1,000 sold, the average musician gets $23.40." Wow - 2.34%. That seems fair.

Sharky Laguana, (Musician), STREAMING MUSIC IS RIPPING YOU OFF, Aug. 17, 2015. Retreived Mar. 11, 2024 from https://medium.com/cuepoint/streaming-music-is-ripping-you-off-61dc501e7f94

If you subscribe to a subscription music service such as Spotify or Apple Music you probably pay $10 a month. And if you are like most people, you probably do so believing your money goes to the artists you listen to. Unfortunately, you are wrong. The reality is only some of your money is paid to the artists you listen to. The rest of your money (and it's probably most of your money) goes somewhere else.

6. THERE IS A GOOD REASON WHY DIGITAL STREAMING SERVICES PAY ROYALTIES AND TERRESTRIAL RADIO DOES NOT – ONLY ONE CHARGES CONSUMERS A FEE.

Curtis Legeyt, (CEO, National Association of Broadcasters), RESPECTING ARTISTS WITH THE AMERICAN MUSIC FAIRNESS ACT, Feb. 2, 2022. House Hearing, p. 59.

We are always on, we are local, and we are completely free to all listeners without expensive subscription or data charges, and in spite of decades of technological advancement, no other platform combines these qualities. This enduring value has never been more apparent than in the current pandemic where local radio is fulfilling its mission of keeping listeners connected, safe, and entertained in the face of its own significant challenges.

Curtis Legeyt, (CEO, National Association of Broadcasters), RESPECTING ARTISTS WITH THE AMERICAN MUSIC FAIRNESS ACT, Feb. 2, 2022. House Hearing, p. 64.

Radio's place in the fabric of American culture is not accidental. It is the product of policy choices and a resulting legal framework that enables broadcast radio to remain completely free and dedicated to local communities. Anyone in the country can access local radio without needing a subscription or internet connection.

Curtis Legeyt, (CEO, National Association of Broadcasters), RESPECTING ARTISTS WITH THE AMERICAN MUSIC FAIRNESS ACT, Feb. 2, 2022. House Hearing, p. 64.

As the music industry grows and streaming offerings expand, broadcast radio remains as popular as ever, for music listening and discovery year after year. Eighty-five percent of Americans listen to radio each week. As a result, the mutually beneficial relationship between performers and ratio – free airplay for free promotion – continues to thrive, and the laws governing that relationship continue to serve the public interest.

Curtis Legeyt, (CEO, National Association of Broadcasters), RESPECTING ARTISTS WITH THE AMERICAN MUSIC FAIRNESS ACT, Feb. 2, 2022. House Hearing, p. 65.

It would be unprecedented for Congress to upend Copyright laws that have governed decades-long relationships, on which entire industries have been built to the mutual benefit of stakeholders as well as the public, and where the fundamental nature of each remains intact. Moreover, the imposition of a new performance royalty is simply untenable for local radio broadcasters. While is critical lifeline service is free to listeners, it is not to those who provide it.

7. ARTISTS BENEFIT FROM TERRESTRIAL RADIO PLAY.

**RAD506 James Winston, (President, National Association of Black Owned Broadcasters), RESPECTING ARTISTS WITH THE AMERICAN MUSIC FAIRNESS ACT, Feb. 2, 2022. House Hearing, p. 15.

Because we are on-air, we also provide free exposure and promotion for the recording industry and performers through free radio air play, interviews, introduction of new performers, concert publicity, music videos, and social media marketing. Free radio airplay provides the recording industry increased popularity, visibility, and sales for both established and new artists. In fact, an industry study estimates that radio's free promotion is worth more than $2.4 billion annually to record labels.

Wendy Paulson et al. (Representatives of State Broadcaster's Associations), RESPECTING ARTISTS WITH THE AMERICAN MUSIC FAIRNESS ACT, Feb. 2, 2022. House Hearing, p. 17.

Broadcasters inform listeners about upcoming concerts in their areas and interview performers on air, introducing them to new audiences. This promotional value adds up to billions of dollars in free publicity.

FEDERAL IP PROTECTION FOR INDIGENOUS PEOPLES IS PROBLEMATIC – SOVEREIGN ACTION IS BETTER

1. ABSENCE OF FEDERAL PROTECTION AFFIRMS TRIBAL SOVEREIGNTY.

Anthony Hernandez, (Law Clerk, United States Court of Appeals for the Ninth Circuit), STANFORD LAW REVIEW, Mar. 2024, p. 677.

Federal trademark law, due to its lack of preemptory power, affords tribes a unique opportunity to experiment. And such experimentation could be sovereignty-affirming if it causes America's other sovereigns to notice, interact with, or adopt tribal innovations. Trademark law, therefore, gives tribes space to govern in areas of particular importance, like economic development and the use of tribal names and iconography. Those economic and expressive functions, as well as a lack of federal preemption, render tribal trademark law a powerful assertion of tribal sovereignty.

2. TRIBAL IP PROTECTION IS BROADER THAN FEDERAL PROTECTION.

Anthony Hernandez, (Law Clerk, United States Court of Appeals for the Ninth Circuit), STANFORD LAW REVIEW, Mar. 2024, p. 676.

Third, because federal trademark law generally does not preempt state trademark law, tribes can legislate tribal trademark rights broader than federal ones. This legislative capability serves as a potentially powerful assertion of tribal sovereignty.

Anthony Hernandez, (Law Clerk, United States Court of Appeals for the Ninth Circuit), STANFORD LAW REVIEW, Mar. 2024, p. 687.

Tribal experimentation in trademark law is possible because, "[u]nlike federal patent and copyright laws, federal trademark law does not preempt state trademark law." Apart from two express preemption provisions in the Lanham Act, the overall lack of preemption means that states and tribes being "comingled American sovereigns" have the power to legislate trademark rights beyond the Lanham Act's strictures.

3. TRIBAL SOVEREIGNTY INCLUDES THE RIGHT TO PROTECT INTELLECTUAL PROPERTY.

Anthony Hernandez, (Law Clerk, United States Court of Appeals for the Ninth Circuit), STANFORD LAW REVIEW, Mar. 2024, p. 663.

Tribal sovereignty tribes' inherent authority to self-govern is typically associated with core governmental functions like the operation of court systems, the definition of political membership, and the collection of governmental revenue. These functions are considered to be prototypical exercises of tribal sovereignty. Less obviously, the regulation of intellectual property is equally integral to tribal sovereignty: "Indigenous communities' political, economic and cultural self-determination" are directly tied to "the ownership and circulation of expression."

4. TRIBES ARE BEST EQUIPPED TO PROTECT THEIR OWN CULTURAL HERITAGE.

Anthony Hernandez, (Law Clerk, United States Court of Appeals for the Ninth Circuit), STANFORD LAW REVIEW, Mar. 2024, p. 668.

The current development of tribal intellectual and cultural property lawmaking showcases why tribal law deserves mainstream attention. First, tribes' intellectual and cultural property laws draw inspiration from ancient, modern, internal, and external sources in a way that is unique in American law. Tribes today "borrow, reject, or reinvent federal and state legal ideas or structures" in order to protect their cultural property. Tribes can look outward to state or federal law, inward to ancient customs and traditions, or a combination of the two.

5. TRIBES ARE NOW TAKING ACTION TO PROTECT THEIR OWN IP.

Anthony Hernandez, (Law Clerk, United States Court of Appeals for the Ninth Circuit), STANFORD LAW REVIEW, Mar. 2024, p. 663.

Consider the following examples. When the Ho-Chunk Nation passed a tribal code providing trademark protection for tribally created Hooc k language materials, the nation not only legislated a substantive legal right, but it also reaffirmed its commitment to language preservation. When Crazy Horse's estate sued a liquor brand that used his name and image, the existence of a tribal court system allowed the estate to pair federal causes of action with culturally appropriate requests for relief. And when the Menominee passed a tribal law that defined cultural resources as "belonging to no specific individual," they joined a growing movement of tribes legislating collective ownership of intellectual property. In each instance, a tribe exercised its sovereignty by creating its own legal framework to protect cultural expression.

6. MORE THAN ONE HUNDRED TRIBES NOW PROTECT THEIR OWN CULTURAL PROPERTY.

Anthony Hernandez, (Law Clerk, United States Court of Appeals for the Ninth Circuit), STANFORD LAW REVIEW, Mar. 2024, p. 664.

Studying the confluence of intellectual property and tribal lawmaking is increasingly important. Over the last two decades, there has been a "striking increase" in the number of tribes enacting their own intellectual and cultural property laws. In 2005, only twenty-seven tribes had laws that protected cultural property. By 2020, 134 tribes had legislated in this area, and the trend is likely to continue.

7. TRIBES ARE TAKING ACTION TO PROTECT THEIR OWN COPYRIGHTS.

Anthony Hernandez, (Law Clerk, United States Court of Appeals for the Ninth Circuit), STANFORD LAW REVIEW, Mar. 2024, p. 669.

As of 2020, thirty-one tribes protect burial grounds as cultural property by integrating the federal Native American Graves Protection and Repatriation Act into tribal code, seven tribes include a "tribal variation of copyright law," and four tribes "reference 'trademark' law in their tribal codes." By contrast, other tribes "maintain aboriginal intellectual property laws and policies, many of which likely predate the United States." For example, in a land use code governing tribal burial grounds, the Little Traverse Bay Band of Odawa Indians incorporated the traditional concept of "the Circle of Life" to govern decisions about how to construct new grave sites. The Pueblo of Pojoaque "devised its policies around repatriation to align with tribal culture and religion" and prohibited repatriated ancestors from being exhibited, photographed, or physically numbered.

8. TRIBAL LAW PROVIDES FOR COLLECTIVE OWNERSHIP OF INTELLECTUAL PROPERTY.

Anthony Hernandez, (Law Clerk, United States Court of Appeals for the Ninth Circuit), STANFORD LAW REVIEW, Mar. 2024, p. 690.

Tribes have innovated one possible solution: collective ownership of intellectual property. While Anglo-American legal systems prioritize the individual, Indigenous conceptions of property are foregrounded in group rights and group ownership. This is not to say that tribal intellectual and cultural property law disregards individual ownership. Many tribes incorporate both group and individual ownership of intellectual and cultural property. For example, the Pascua Yaqui defines its "Traditional Indigenous Intellectual Property" as a "communal right held by the Tribe." And the Sisseton-Wahpeton Oyate Tribe ensures "communal" ownership of cultural property. But both tribes also allow for individual ownership of cultural property "in some instances."

9. TRIBES ARE PROTECTING THEIR OWN TRADEMARKS.

Anthony Hernandez, (Law Clerk, United States Court of Appeals for the Ninth Circuit), STANFORD LAW REVIEW, Mar. 2024, p. 670.

But trademark law implicates tribal sovereignty in three important ways. First, trademark law fosters economic development. Second, trademarks help tribes control the usage of Native names and imagery, which aids their ability to preserve and promote their cultural values. Third, the lack of federal preemption in trademark law enables tribes to broadly legislate and experiment.

Anthony Hernandez, (Law Clerk, United States Court of Appeals for the Ninth Circuit), STANFORD LAW REVIEW, Mar. 2024, p. 672.

The Intertribal Agricultural Council promotes the "Made/Produced by American Indians" mark for Indian-made food products that range from wild rice to beef to smoked fish. The Council's label is a "certification mark," a particular kind of trademark indicating that the goods satisfy third-party standards. The "Made/Produced by American Indians" mark originated in the early 1990s because of concerns that non-Indian producers were falsely labeling products "Indian-made." The Council describes the mark as a way to grow market share and reach more consumers, thereby serving many functions of trademarks: advertising, distinguishing goods, and signifying quality.

Anthony Hernandez, (Law Clerk, United States Court of Appeals for the Ninth Circuit), STANFORD LAW REVIEW, Mar. 2024, p. 673.

And because trademarks are important to brand protection which can aid market growth businesses operated by tribes must know how to use trademark law to their economic advantage. Indeed, tribes are adept at registering and defending their marks: Tribes federally register the names of their businesses. Examples include "Choctaw Ranches," owned by the Choctaw Nation of Oklahoma, for agricultural products; "Talking Cedar," a pending mark owned by the Confederated Tribes of the Chehalis Reservation for the first tribal-owned distillery in the United States; and "Native Nations Cannabis," a pending mark owned by the Flandreau Santee Sioux Tribe for the first tribal-owned cannabis dispensary in South Dakota.

Anthony Hernandez, (Law Clerk, United States Court of Appeals for the Ninth Circuit), STANFORD LAW REVIEW, Mar. 2024, p. 678.

In order to "ensure [a] continued Indigenous existence," tribes are increasingly legislating their own intellectual and cultural property laws. This Note introduces four tribes with references to trademark rights in their laws: the Ho-Chunk Nation, the Pascua Yaqui Tribe, the Colorado River Indian Tribes (CRIT), and the Mohegan Tribe. Even though they are a small subset of all 574 federally recognized tribes, and even if the references to trademark rights are brief, the following four laws show the connection between trademarks and tribal sovereignty and illustrate how America's other sovereigns should interact with tribal legal innovations.

10. TRIBES CONTROL THEIR OWN DATA SOVEREIGNTY.

Anthony Hernandez, (Law Clerk, United States Court of Appeals for the Ninth Circuit), STANFORD LAW REVIEW, Mar. 2024, p. 695.

Today, forty-nine tribes have some form of data sovereignty statute. Some of these laws "address the issue of who will own the research collected and who will hold the intellectual property rights to the resulting products." Moreover, three of the four tribes that explicitly reference trademark law in their tribal codes, as discussed above, have enumerated trademark rights in their research protection codes.

11. TRIBES SHOULD BE TRUSTED TO FIND THEIR OWN IP PROTECTION SOLUTIONS.

Anthony Hernandez, (Law Clerk, United States Court of Appeals for the Ninth Circuit), STANFORD LAW REVIEW, Mar. 2024, p. 670.

Second, tribal law innovates by crafting solutions to problems facing America's other sovereigns. Tribes experiment in jury selection, separation-of-powers law, absentee balloting, consumer finance protection, child welfare, criminal justice, and environmental law. The states have long been viewed as policy laboratories, and it is time for tribes to be viewed in the same light. Accordingly, the study of tribal law would "add hundreds of additional laboratories for American governance." Indeed, as Part II explains, tribal innovations in intellectual and cultural property already suggest solutions to at least two unanswered questions at the federal level. Tribal lawmaking, therefore, is tribal sovereignty in action. The exercise of that fundamental power is worthy of study, especially in the domains of intellectual and cultural property.

STRONGER PROTECTION OF TRADEMARKS IS NOT JUSTIFIED

1. STRONGER TRADEMARK PROTECTION WILL MAKE CRIMINALS OF ALL OF US.

Lior Zemer et al., (Prof., Law, Reichman U. Law School), CARDOZO ARTS & ENTERTAINMENT LAW JOURNAL, 2023, p. 538.

Apart from the difficulties caused to new manufacturers, the ubiquity of trademarks, alongside the predatory use and protection of these marks, puts members of the public at risk of becoming constant trademark infringers. John Tehranian warned us that a similar process in copyright that may lead the public en masse to signify an "infringement nation." Although Tehranian discusses this danger in relation to copyright, there is also a cause for concern in other areas of intellectual property. Tehranian claims that "we are, technically speaking, a nation of constant infringers," as "on any given day, for example, even the most law-abiding American engages in thousands of actions that likely constitute copyright infringement." If wide trademark protection is afforded to general signs and large corporations engage in aggressive litigation attempts to protect their trademark, then by giving life to predatory trademark practices, the public may be in constant infringement of trademarks when using generic applications of say, stars, stripes, circles, and more.

2. MOST TRADEMARK INFRINGEMENT IS HARMLESS BEHAVIOR.

Lior Zemer et al., (Prof., Law, Reichman U. Law School), CARDOZO ARTS & ENTERTAINMENT LAW JOURNAL, 2023, p. 544.

Trademarks "are not created equal," and when extensive protection is afforded to general signs or symbols, like the Adidas stripes, it becomes more difficult for potential competitors to assess whether their behavior is legitimate or unlawful. As Stacey Dogan states: "when those individuals are causing no harm, it's hard to justify saddling them with the costs of assessing risk and avoiding their (harmless) behavior." This is a "serious concern, as it has implications far beyond trademark law and impacts the U.S. economy and the freedom of cultural expression." Second, predatory use of trademarks "can seriously inhibit not only commercial but also non-commercial speech." In this way, some argue that trademark holders "attempt to manipulate the public through direct control of the public's ability to use language."

3. STRONGER ENFORCEMENT OF TRADEMARKS WILL CHILL FREEDOM OF SPEECH.

Leah Chan Grinvald, (Prof., Law, Suffolk U. School of Law), CARDOZO ARTS & ENTERTAINMENT LAW JOURNAL, 2021, p. 933.

The harm from this over-enforcement is broad and impacts society on different levels, from having an anti-competitive effect, to raising barriers for new businesses to enter markets, all the way to chilling free speech. More alarmingly, though, is that much of these over-enforcement activities are conducted extra-judicially - very few of these enforcement efforts see the light of a courtroom. This means that large entities are able to enforce their claims of trademark infringement against less resourced entities without the benefit of judicial oversight to halt more egregious or abusive claims. Where enforcement crosses the line into trademark bullying, the target of such bullying has little recourse.

4. STRONGER ENFORCEMENT OF TRADEMARKS INCREASES PRICES FOR CONSUMERS.

Lior Zemer et al., (Prof., Law, Reichman U. Law School), CARDOZO ARTS & ENTERTAINMENT LAW JOURNAL, 2023, p. 536.

Predatory trademarks are more complex and problematic when the protected trademark uses obvious, common, and generic signs, preventing them from being available for public use. Such trademark protection harms competition and increases the monopolistic power that such companies hold, thereby chilling creativity and eventually leading to lower quality goods and higher prices for the public.

5. STRONGER ENFORCEMENT OF TRADEMARKS PROMOTES MONOPOLY POWER.

Lior Zemer et al., (Prof., Law, Reichman U. Law School), CARDOZO ARTS & ENTERTAINMENT LAW JOURNAL, 2023, p. 567.

Predatory trademarks, together with the over-enforcement of them by courts, impose threats and risks on the public. Excluding general signs from the public domain harms competition by perpetuating the market power of big entities who own these trademarks, and harms non-commercial speech and the freedom of cultural expression. Encouraging predatory trademarks also increases the monopolization powers of such entities, and can potentially lead to poor quality products and high prices in the market.

Lior Zemer et al., (Prof., Law, Reichman U. Law School), CARDOZO ARTS & ENTERTAINMENT LAW JOURNAL, 2023, p. 535.

As Rosemary J. Coombe tells us, "corporate trademarks are key symbols in postmodernity. Corporations invest huge amounts monitoring their use in the public sphere." Corporate trademarks and signs, Coombe writes, "serve as the locus of capital's cultural investments and social inscriptions," and their "meaning is crucial to corporate capital." By granting an exclusive right over a certain sign, trademark laws encircle the sign with exclusive private property rights and limit market access by preventing others from marketing products or services with similar signs. In this way, trademarks reduce the number of marks available to the public and new traders. Further, the association of trademarks with competition has a wide reach in the market, therefore making trademarks an important element of regulating market powers. Striking the balance between these competing interests defines the essence of trademark law and policy and requires attention to detrimental economic and societal effects from trademarks labelled as "monopolistic."

Lior Zemer et al., (Prof., Law, Reichman U. Law School), CARDOZO ARTS & ENTERTAINMENT LAW JOURNAL, 2023, p. 535.

Defining trademarks as "lawful monopolies" signifies how the application of trademark protection by the courts leads to a de facto imbalance in the market of signs and competing marks.

Lior Zemer et al., (Prof., Law, Reichman U. Law School), CARDOZO ARTS & ENTERTAINMENT LAW JOURNAL, 2023, p. 540.

Trademark enforcement may incentivize producers to deflect lower price substitutes to their product by spending money on advertising and promotion, leading to monopolization of the field. As E.H. Chamberlain purports, "if a trademark distinguishes, that is, marks off one product as different from another, it gives the seller of that product a monopoly, from which we might argue ... that there is no competition." (ellipsis in original)

6. TRADEMARKS SUPPORT CULTURAL APPROPRIATION.

Anjali Vats, (Prof., Law, U. of Pittsburgh School of Law), IDEA: THE LAW REVIEW OF THE FRANKLIN PIERCE CENTER FOR INTELLECTUAL PROPERTY, 2021, p. 732.

Trademark law has long been intertwined with race and colonialism, through the perpetuation and monetization of images that degrade and humiliate people of color. From Aunt Jemima, the Quaker Oats Pancake Mammy to Mia, the Land O' Lakes Butter Maiden, the racialization of Black, Indigenous, and Brown people has been commonplace in American culture.

THE PROBLEM OF COUNTERFEIT PRODUCTS BEING SOLD ONLINE IS EXAGGERATED

1. ONLINE SELLERS ARE ACTING ON THEIR OWN TO PREVENT SALE OF COUNTERFEIT PRODUCTS.

David Mizrachi, (JD, Tulane University Law School), AMERICAN U. INTELLECTUAL PROPERTY BRIEF, Dec. 2023, p. 19.

Amazon, on its part, has embarked on a proactive campaign to portray itself as a responsible citizen by actively preventing and combatting counterfeiting through its website. In this regard, it announced a very strict Anti-Counterfeiting Policy which states: "Products offered for sale on Amazon must be authentic. The sale of counterfeit products is strictly prohibited. Failure to abide by this policy may result in loss of selling privileges, funds being withheld, and disposal of inventory in our possession." It is worth noting that the warning refers only to inventory in Amazon's possession.

David Mizrachi, (JD, Tulane University Law School), AMERICAN U. INTELLECTUAL PROPERTY BRIEF, Dec. 2023, p. 20.

In response to concerns about its role in trading counterfeit products, Alibaba introduced the ambitiously named "Big Data Anti-Counterfeiting Alliance" in 2017. This initiative sought to harness big data and cutting-edge anti-counterfeiting technology in the global battle against counterfeits. It is hard to evaluate the results of this now five-year effort, particularly in light of the continued presence of Alibaba's Taobao in the USTR Notorious Market List.

2. ECONOMIC LOSSES FROM COUNTERFEIT SALES ARE EXAGGERATED.

Nan Lan, (JD Candidate, SMU School of Law), AMERICAN UNIVERSITY INTELLECTUAL PROPERTY BRIEF, Apr. 2020, p. 35.

Some economists even argue that there may not be any losses associated with counterfeiting: if the consumers who buy fakes are a market segment that purchase counterfeit because of their inability to afford the genuine product, consequentially buyers in that segment do not really represent lost sales.

3. COUNTERFEIT SALES ARE ALREADY ILLEGAL.

Todd Kowalski et al., (Attorney), AMERICAN CRIMINAL LAW JOURNAL, Summer 2023, 1025.

Trademark counterfeiting is also illegal under the RICO and money laundering acts. In 1994, Congress added trademark counterfeiting to the list of unlawful activities under the money laundering statute. Similarly, the Anticounterfeiting Consumer Protection Act of 1996 made trademark and copyright counterfeiting a predicate offense under RICO. Congress determined that the TCA "has proven to be an inadequate remedy for the explosive growth of criminal commercial counterfeiting." In response, Congress amended the RICO statute to allow the government to prosecute "the entire criminal organization rather than merely react to each crime the organization commits."

Todd Kowalski et al., (Attorney), AMERICAN CRIMINAL LAW JOURNAL, Summer 2023, 1026.

In addition to the TCA and RICO, trademark counterfeiting can also be prosecuted under federal statutes that criminalize: (1) conspiracy and aiding and abetting; (2) mail and wire fraud; (3) copyright infringement; (4) trafficking in counterfeit labels, illicit labels, or counterfeit documentation or packaging; (5) trafficking in misbranded food, drugs, and cosmetics; (6) tampering with consumer products; and (7) trafficking in mislabeled wool, fur, and textile fiber products.

ALLOWING FEDERAL TRADEMARKS FOR CANNABIS PRODUCTS IS UNJUSTIFED

1. CANNABIS COMPANIES ARE NOTORIOUS TRADEMARK ABUSERS.

John Gilbertson, (JD, Darke U. Law School), IDEA: THE INTELLECTUAL PROPERTY LAW REVIEW, 2020, p. 507.

Admittedly, the cannabis industry has not helped itself here. For one, there has been a longstanding practice of naming popular cannabis strains after well-known brands. Examples include GSC (Girl Scout Cookies), Fruity Pebbles, Zkittlez, Gorilla Glue, and Skywalker OG. Equally problematic is the time-honored custom of naming pot-laced edibles after famous snacks. Such gems include Stoney Patch Kids, Keef Kat, Mr. Dankbar, and Reefer's Peanut Butter Cups. While no doubt these naming conventions permitted early pot purveyors to have a chuckle while sticking it to the man, they represent a significant risk to modern cannabis brands now that such products and services are going mainstream.

2. ALLOWING CANNABIS TRADEMARKS WILL INCREASE SALES.

Weebly.com, THE ROLE OF TRADEMARKS IN BOOSTING SALES AND BRAND SUCCESS, Sept. 3, 2023. Retrieved May 10, 2024 from https://onlinetrademarkregistration.weebly.com/blog/the-role-of-trademarks-in-boosting-sales-and-brand-success

Trademarks are not just symbols; they are strategic tools that significantly impact a brand's success and sales potential. From enhancing brand recognition and trust to providing legal protection and fostering emotional connections, trademarks play a multi-faceted role in driving sales.

3. CANNABIS USE LEADS TO ADDICTION.

Sandee LaMotte, (Staff, CNN), MARIJUANA USE RAISES RISK OF HEART ATTACK, HEART FAILURE AND STROKE, STUDIES SAY, Nov. 7, 2023. Retrieved May 10, 2024 from https://www.cnn.com/2023/11/06/health/marijuana-heart-stroke-risk-wellness/index.html

Nearly three of every 10 marijuana users develop a dependence on weed called cannabis use disorder. A person is considered dependent on weed when they feel food cravings or a lack of appetite, irritability, restlessness, and mood and sleep difficulties after quitting, according to the National Institute on Drug Abuse. Marijuana use becomes an addiction when a person is unable to quit using weed even though it interferes with many aspects of life.

Substance Abuse and Mental Health Services Administration, LEARN ABOUT MARIJUANA RISKS, May 7, 2024. Retrieved May 10, 2024 from https://www.samhsa.gov/marijuana

Approximately 1 in 10 people who use marijuana will become addicted. When they start before age 18, the rate of addiction rises to 1 in 6.

Substance Abuse and Mental Health Services Administration, LEARN ABOUT MARIJUANA RISKS, May 7, 2024. Retrieved May 10, 2024 from https://www.samhsa.gov/marijuana

Contrary to popular belief, marijuana is addictive. Research shows that: 1-in-6 people who start using the drug before the age of 18 can become addicted. 1-in-10 adults who use the drug can become addicted.

4. CANNABIS USE HARMS THE BRAIN.

Sandee LaMotte, (Staff, CNN), HOW MARIJUANA IMPACTS PAIN, SLEEP, ANXIETY AND MORE, ACCORDING TO THE LATEST SCIENCE, Sept. 6, 2023. Retrieved May 10, 2024 from https://www.cnn.com/2023/08/30/health/marijuana-pros-and-cons-wellness/index.html

Much of the most convincing evidence in the study, in fact, pointed to the potential harms of using marijuana, especially for pregnant women, anyone with a mental health disorder and the adolescents and young adults who currently make up the majority of cannabis users. “The most concerning findings are the multidimensional detrimental effects of cannabis on brain function, as reflected by associations with poor cognition (and) mental disorders,” [Dr. Marco Solmi, associate professor of psychiatry at the University of Ottawa] said.

Sandee LaMotte, (Staff, CNN), HOW MARIJUANA IMPACTS PAIN, SLEEP, ANXIETY AND MORE, ACCORDING TO THE LATEST SCIENCE, Sept. 6, 2023. Retrieved May 10, 2024 from https://www.cnn.com/2023/08/30/health/marijuana-pros-and-cons-wellness/index.html

“Adolescents and young adults in particular should be aware that cannabis can have detrimental effects on their mental health, should receive adequate information on effects of cannabis, should not use cannabis, or should monitor their mental health if they decide to use it,” [Dr. Marco Solmi, associate professor of psychiatry at the University of Ottawa] added. Beyond psychiatric symptoms, clinical trials have found convincing evidence between cannabis and negative effects on memory, verbal cognition and visual recall, the study said. “Cannabis worsens multiple domains of cognition,” Solmi said.

Substance Abuse and Mental Health Services Administration, LEARN ABOUT MARIJUANA RISKS, May 7, 2024. Retrieved May 10, 2024 from https://www.samhsa.gov/marijuana

Marijuana can cause permanent IQ loss of as much as 8 points when people start using it at a young age. These IQ points do not come back, even after quitting marijuana.

**CAN705 Centers for Disease Control and Prevention, MARIJUANA AND PUBLIC HEALTH, Apr. 12, 2024. Retrieved May 10, 2024 from https://www.cdc.gov/marijuana/health-effects/heart-health.html Marijuana can make the heart beat faster and can make blood pressure higher immediately after use. It could also lead to increased risk of stroke, heart disease, and other vascular diseases. Most of the scientific studies linking marijuana to heart attacks and strokes are based on reports from people who smoked marijuana (as opposed to other methods of using it). Smoked marijuana delivers tetrahydrocannabinol (THC) and other cannabinoids to the body. Marijuana smoke also delivers many of the same substances researchers have found in tobacco smoke—these substances are harmful to the lungs and cardiovascular system.

5. CANNABIS USE HARMS THE IMMUNE SYSTEM.

American Lung Association, MARIJUANA AND LUNG HEALTH, Apr. 4, 2020. Retrieved May 10, 2024 from https://www.lung.org/quit-smoking/smoking-facts/health-effects/marijuana-and-lung-health

Smoking marijuana can harm more than just the lungs and respiratory system—it can also affect the immune system and the body's ability to fight disease, especially for those whose immune systems are already weakened from immunosuppressive drugs or diseases, such as HIV infection. Smoking marijuana hurts the lungs' first line of defense against infection by killing cells that help remove dust and germs as well as causing more mucus to be formed. In addition, it also suppresses the immune system. These effects could lead to an increased risk of lower respiratory tract infections among marijuana smokers, although there is no clear evidence of such actual infections being more common among marijuana smokers. However, retrospective analyses of CT chest scans showed that marijuana-only smokers had greater airway thickening and inflammation as well as emphysema compared to both nonsmokers and tobacco-only smokers.

CANNABIS USE CAUSES HEART DISEASE.

Erin Prater, (Staff, Fortune), DAILY MARIJUANA USERS ARE MORE LIKELY TO TAKE THIS HEALTH HIT, A NEW STUDY FINDS, Feb. 24, 2023. Retrieved May 10, 2024 from https://fortune.com/well/2023/02/24/daily-marijuana-use-raises-risk-coronary-artery-heart-disease/

Those who use marijuana daily are about a third more likely to develop coronary artery disease than those who've never used the recreational drug, according to a new study. "There are probably certain harms of cannabis use that weren't recognized before, and people should take that into account," Dr. Ishan Paranjpe, a physician at Stanford University and lead author, said in a news release about the study, which will be presented in early March at the American College of Cardiology conference.

Erin Prater, (Staff, Fortune), DAILY MARIJUANA USERS ARE MORE LIKELY TO TAKE THIS HEALTH HIT, A NEW STUDY FINDS, Feb. 24, 2023. Retrieved May 10, 2024 from https://fortune.com/well/2023/02/24/daily-marijuana-use-raises-risk-coronary-artery-heart-disease/

Its effects on the cardiovascular system have yet to be well studied because it's illegal at the federal level, resulting in restrictions on researchers, according to Harvard Health Publishing. "As a result, everything we're told about what marijuana does or doesn't do should be viewed with a certain amount of caution," the organization writes. "This holds equally true for the risks as well as the benefits." That said, cannabis consumption has been shown to cause arrhythmia and fast heartbeat, and potentially sudden death, as well as to an increased risk of heart attack, according to a 2017 article in the Journal of Thoracic Disease. Other studies suggest there are links between marijuana and atrial fibrillation, the most common heart rhythm disorder, and that smoking pot may raise the risk of stroke, according to Harvard Health.

Erin Prater, (Staff, Fortune), DAILY MARIJUANA USERS ARE MORE LIKELY TO TAKE THIS HEALTH HIT, A NEW STUDY FINDS, Feb. 24, 2023. Retrieved May 10, 2024 from https://fortune.com/well/2023/02/24/daily-marijuana-use-raises-risk-coronary-artery-heart-disease/

More than 2 million Americans with known cardiovascular disease are thought to have used marijuana, according to a 2020 article published in the Journal of the American College of Cardiology.

Sandee LaMotte, (Staff, CNN), MARIJUANA USE RAISES RISK OF HEART ATTACK, HEART FAILURE AND STROKE, STUDIES SAY, Nov. 7, 2023. Retrieved May 10, 2024 from https://www.cnn.com/2023/11/06/health/marijuana-heart-stroke-risk-wellness/index.html

A study published earlier this year also found using marijuana every day can raise a person's risk of coronary artery disease by one third compared with those who never partake. Coronary artery disease is caused by plaque buildup in the walls of the arteries that supply blood to the heart. Also called atherosclerosis, CAD is the most common type of heart disease, according to the US Centers for Disease Control and Prevention.

Sandee LaMotte, (Staff, CNN), MARIJUANA USE RAISES RISK OF HEART ATTACK, HEART FAILURE AND STROKE, STUDIES SAY, Nov. 7, 2023. Retrieved May 10, 2024 from https://www.cnn.com/2023/11/06/health/marijuana-heart-stroke-risk-wellness/index.html

Older adults who don't smoke tobacco but do use marijuana were at higher risk of both heart attack and stroke when hospitalized, while people who use marijuana daily were 34% more likely to develop heart failure, according to two new non-published studies presented Monday at the American Heart Association Scientific Sessions in Philadelphia. "Observational data are strongly pointing to the fact that … cannabis use at any point in time, be it recreational or medicinal, may lead to the development of cardiovascular disease," Robert Page II, chair of the volunteer writing group for the 2020 American Heart Association Scientific Statement: Medical Marijuana, Recreational Cannabis, and Cardiovascular Health, said in a statement.

5. CANNABIS USE IS GENERALLY HARMFUL.

Gary Chan, (University of Queensland), LONG-TERM STUDY REVEALS HARM IN REGULAR CANNABIS USE, Jan. 27, 2021. Retrieved May 10, 2024 from https://www.uq.edu.au/news/article/2021/01/long-term-study-reveals-harm-regular-cannabis-use

Regular cannabis use has harmful effects regardless of the age a person starts using, a University of Queensland-led study has found. The study examined people who began regular cannabis use in high school or in their early 20s, and compared both with non-users. Lead author Dr Gary Chan from UQ's National Centre for Youth Substance Use Research said the results linked regular cannabis use with negative life outcomes by age 35.

Gary Chan, (University of Queensland), LONG-TERM STUDY REVEALS HARM IN REGULAR CANNABIS USE, Jan. 27, 2021. Retrieved May 10, 2024 from https://www.uq.edu.au/news/article/2021/01/long-term-study-reveals-harm-regular-cannabis-use

Dr Chan said the findings should be used to inform the public about the risks of regular cannabis use. "Public health agencies and policy makers need to deliver a clear and strong message to the public that regular cannabis use is harmful, regardless of when an individual initiates its use," he said. "This is particularly important for jurisdictions that have already legalised recreational cannabis, such as Canada and some US states." The study was conducted in collaboration with Murdoch Children's Research Institute and the University of Melbourne.

Sandee LaMotte, (Staff, CNN), MARIJUANA USE RAISES RISK OF HEART ATTACK, HEART FAILURE AND STROKE, STUDIES SAY, Nov. 7, 2023. Retrieved May 10, 2024 from https://www.cnn.com/2023/11/06/health/marijuana-heart-stroke-risk-wellness/index.html

"The latest research about cannabis use indicates that smoking and inhaling cannabis increases concentrations of blood carboxyhemoglobin (carbon monoxide, a poisonous gas), tar (partly burned combustible matter) similar to the effects of inhaling a tobacco cigarette, both of which have been linked to heart muscle disease, chest pain, heart rhythm disturbances, heart attacks and other serious conditions," said Page, a professor in the department of clinical pharmacy and physical medicine/rehabilitation at the University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences in Aurora, Colorado.

Sandee LaMotte, (Staff, CNN), MARIJUANA USE RAISES RISK OF HEART ATTACK, HEART FAILURE AND STROKE, STUDIES SAY, Nov. 7, 2023. Retrieved May 10, 2024 from https://www.cnn.com/2023/11/06/health/marijuana-heart-stroke-risk-wellness/index.html

Researchers found the 8,535 adults who abused weed had a 20% higher risk of having a major heart or brain event while hospitalized, compared to over 10 million older hospitalized adults who did not use marijuana.

Sandee LaMotte, (Staff, CNN), MARIJUANA USE RAISES RISK OF HEART ATTACK, HEART FAILURE AND STROKE, STUDIES SAY, Nov. 7, 2023. Retrieved May 10, 2024 from https://www.cnn.com/2023/11/06/health/marijuana-heart-stroke-risk-wellness/index.html

"We know acute use can lead to a drop in blood pressure and therefore, particularly when this is vaped or when it is smoked and or combusted. And so therefore, that plays into the … understanding the potential risk for stroke," [Robert Page II, chair of the volunteer writing group for the 2020 American Heart Association Scientific Statement] said. "But what's interesting is if you look at individuals who've used cannabis daily over very long periods of time, it's actually been associated with an increase in blood pressure which is also a risk factor for numerous other cardiovascular conditions." (ellipsis in original)

DEEPFAKE INFLUENCES ON ELECTION OUTCOMES ARE EXAGGERATED.

1. AI IS BEING USED TO DETECT DEEPFAKES.

Rishi Iyengar, Reporter, Foreign Policy Magazine), WHAT AI WILL DO TO ELECTIONS, Jan. 3, 2024. Retrieved May 17, 2024 from https://foreignpolicy.com/2024/01/03/2024-elections-ai-tech-social-media-disinformation/

The first is AI's role in the potential solution. Social media firms have been leaning more on automated detection tools as an early warning system for disinformation and hate speech, filtering the amount of content that human reviewers must look at. According to YouTube's transparency report for April to June 2023, those tools detected 93 percent of the videos ultimately taken down for violating the platform's policies. For TikTok, that number was around 62 percent. Meta has stepped up the use of AI tools for content moderation since 2020 and also says its technology detects more than 90 percent of content violating Meta's terms before users report it. "AI is the sword as well as the shield," Chris Cox, Meta's chief product officer, said during the APEC panel.

2. PEOPLE NOW KNOW ABOUT DEEPFAKES ARE PROPERLY SKEPTICAL.

Rishi Iyengar, Reporter, Foreign Policy Magazine), WHAT AI WILL DO TO ELECTIONS, Jan. 3, 2024. Retrieved May 17, 2024 from https://foreignpolicy.com/2024/01/03/2024-elections-ai-tech-social-media-disinformation/

The second argument is that AI-generated misinformation may not land in the way that bad actors might intend it to. That's in part because the repeated warnings about doctored images and deepfake videos have made social media users extra skeptical and vigilant (what Altman referred to as "societal antibodies") and also because a lot of the content just isn't that convincing yet. AI-generated images frequently show up with extra fingers or limbs, and deepfake videos still have some significant tells. "We haven't yet seen the sort of doomsday scenario that everybody imagines, which is: A video circulates, nobody can figure out if it's true or false, then it swings an election. People are able to respond to and debunk this type of content," said Roth, the former Twitter trust and safety head.

3. PEOPLE HAVE BECOME ADEPT AT SPOTTING DEEPFAKES.

Peter Carlyon, (Analyst, RAND Corporation), DEEPFAKES AREN'T THE DISINFORMATION THAT THEY'RE MADE OUT TO BE, Dec. 19, 2023. Retrieved May 12, 2024 from https://www.rand.org/pubs/commentary/2023/12/deepfakes-arent-the-disinformation-threat-theyre-made.html

But even with these more advanced forms of generative AI, humans are remarkably skilled at spotting fakes. In a recent study at the Media Lab of the Massachusetts Institute of Technology, the leading deepfake detection model judged a convincing deepfake of Vladimir Putin to have an 8 percent chance of being artificial—versus 70 percent for participants. As the researchers explain, part of this is that participants are drawing on contextual information not available to the model. They make judgments on whether Putin would really act and speak as he does in the video, while a neural network does not.

Russell Brandom, (Staff, The Verge), DEEPFAKE PROPAGANDA IS NOT A REAL PROBLEM, Mar. 5, 2019. Retrieved May 12, 2024 from https://www.theverge.com/2019/3/5/18251736/deepfake-propaganda-misinformation-troll-video-hoax

It's a good question why deepfakes haven't taken off as a propaganda technique. Part of the issue is that they're too easy to track. The existing deepfake architectures leave predictable artifacts on doctored video, which are easy for a machine learning algorithm to detect. Some detection algorithms are publicly available, and Facebook has been using its own proprietary system to filter for doctored video since September.

4. TRIBALISM IS THE PROBLEM, NOT DEEPFAKES – PEOPLE ARE INCREASINGLY WILLING TO BELIEVE CONSPIRACIES EVEN WITHOUT VIDEO EVIDENCE.

Peter Carlyon, (Analyst, RAND Corporation), DEEPFAKES AREN'T THE DISINFORMATION THAT THEY'RE MADE OUT TO BE, Dec. 19, 2023. Retrieved May 12, 2024 from https://www.rand.org/pubs/commentary/2023/12/deepfakes-arent-the-disinformation-threat-theyre-made.html

But the effect of deepfakes was still minor. The politicians whose voices were dubbed stressed that the fake did not alter the course of the election—far more significant was the avalanche of conventional disinformation spread by Russian trolling operations and, far more prominent, by local politicians. One media watch organization flagged 345,000 election-related disinformation posts. Deepfakes are a problem. But they are a drop in the ocean.

Peter Carlyon, (Analyst, RAND Corporation), DEEPFAKES AREN'T THE DISINFORMATION THAT THEY'RE MADE OUT TO BE, Dec. 19, 2023. Retrieved May 12, 2024 from https://www.rand.org/pubs/commentary/2023/12/deepfakes-arent-the-disinformation-threat-theyre-made.html

The effect of deepfakes on disinformation may rise. But concerns over generative AI too often stray into alarmism, of hypothetical dystopias where fact is indistinguishable from fiction. That has distorted the picture.

Rishi Iyengar, Reporter, Foreign Policy Magazine), WHAT AI WILL DO TO ELECTIONS, Jan. 3, 2024. Retrieved May 17, 2024 from https://foreignpolicy.com/2024/01/03/2024-elections-ai-tech-social-media-disinformation/

That leads to the third argument: that bad actors in many countries don't need AI to be effective. Take India, for example, where the encrypted messaging platform WhatsApp is by far the most dominant, with more than half a billion users. The misinformation shared both privately and publicly—much of it by political parties and their supporters—still tends to be hurriedly edited images taken out of context, according to Indian researchers and fact-checkers. "You can produce a million tweets, but if only two people see it, who cares?" said Kiran Garimella, a professor at Rutgers University who researches online misinformation in the global south. "My belief is that the difference that artificial intelligence makes is not going to be significant because it is conditioned on the delivery mechanisms." In other words, if your WhatsApp forwarding game isn't strong enough, it won't matter whether you used AI or Photoshop.

Russell Brandom, (Staff, The Verge), DEEPFAKE PROPAGANDA IS NOT A REAL PROBLEM, Mar. 5, 2019. Retrieved May 12, 2024 from https://www.theverge.com/2019/3/5/18251736/deepfake-propaganda-misinformation-troll-video-hoax

We sometimes think of these troll campaigns as the informational equivalent of food poisoning: bad inputs into a credulous but basically rational system. But politics is more tribal than that, and news does much more than just convey information. Most troll campaigns focused on affiliations rather than information, driving audiences into ever more factional camps. Video doesn't help with that; if anything, it hurts by grounding the conversation in disprovable facts.

Peter Carlyon, (Analyst, RAND Corporation), DEEPFAKES AREN'T THE DISINFORMATION THAT THEY'RE MADE OUT TO BE, Dec. 19, 2023. Retrieved May 12, 2024 from https://www.rand.org/pubs/commentary/2023/12/deepfakes-arent-the-disinformation-threat-theyre-made.html

The U.S. presidential election was fractious, polarizing, and flooded with fakery—but ultimately uninfluenced by deepfakes.

TRADEMARK TROLLS ARE A MINOR PROBLEM IN THE U.S.

1. THE “USE” REQUIREMENT IN U.S. TRADEMARK LAW SOLVES FOR TROLLS.

Feng Shujie, (Prof., Law, Tsinghua U.), TSINGHUA CHINA LAW REVIEW, Spr. 2019, p. 275.

Scholars estimate that there are various reasons why there is no trademark troll problem in the United States. The main reason is that the United States bases its trademark law on the trademark use system, which requires owners of registered trademarks to provide evidence of use at the time of registration and then regularly after the trademark is registered.

2. THE TRADEMARK LAW REVISION ACT OF 1988 SOLVED FOR TROLLS.

Lindsay Swinson, (JD Candidate, George Washington U. Law School), FEDERAL CIRCLE BAR JOURNAL, 2022, p. 76.

Following the passage of the Lanham Act, Congress sought to update federal trademark law through an amendment titled the Trademark Law Revision Act of 1988 ("Amendment"). The Amendment aimed to remedy certain abuses that were occurring since the Lanham Act's enactment, specifically applicants' "token use" practices. The Federal Circuit has defined token use as "the most minimal use of a trademark, designed purely to secure rights in that mark before an applicant is truly prepared to commercialize a good or service in connection with a given mark." Token use was seen as necessary for many applicants who wanted to reserve a trademark but had yet to sufficiently satisfy the use-in-commerce requirement. Token use was detrimental for the trademark system because it allowed applicants to obtain a trademark based on minimal use--and, because applicants often never made commercial use, this resulted in a trademark register "clogged with unused marks"--and was not available in certain industries.

Lindsay Swinson, (JD Candidate, George Washington U. Law School), FEDERAL CIRCLE BAR JOURNAL, 2022, p. 76.

The Trademark Law Revision Act of 1988 added the option for applicants to file ITU applications, in addition to the use applications codified in 1946. The Amendment focused on eliminating the practice of "token use" and putting the United States in a competitive position to secure trademarks. Congress implemented three significant changes to further the purposes of the Lanham Act and remedy the issues following its enactment: the Amendment (1) created a stricter requirement for "use in commerce"; (2) added the constructive use doctrine; and (3) established the ITU doctrine. Thus, the U.S. trademark system allowed applicants to secure rights before actual use of a mark to eliminate the practice of token use, but tightened the requirements for securing actual registration to prevent abuse.

BUSINESS CONFIDENCE DISADVANTAGE

The thesis of this disadvantage is that the plan will hurt small businesses, which results in a substantial decrease in business confidence. In the present system, business confidence is strong and bolstering the economy. However, the plan's protection of intellectual property will only be used by large businesses to sue small businesses over the new intellectual property law. This will shatter business confidence and with it the United States economy.

I. THE AFFIRMATIVE PLAN WILL UNDERMINE BUSINESS CONFIDENCE—DESTROYING THE UNITED STATES ECONOMY.

A. BUSINESS CONFIDENCE IS INCREASING NOW.

Vistage Worldwide, Inc. (A wide array of domestic and global news stories), SMALL AND MIDSIZE BUSINESS CONFIDENCE CLIMBS FOR FOURTH CONSECUTIVE QUARTER, FUELING ANTICIPATION FOR 2025 GROWTH CYCLE, Apr. 16, 2024, Retrieved May 13, 2024 from https://www.prnewswire.com/news-releases/small-and-midsize-business-confidence-climbs-for-fourth-consecutive-quarter-fueling-anticipation-for-2025-growth-cycle-302117295.html

Small and midsize business (SMB) CEOs' confidence in the economy continued its upward trajectory in Q1 2024, per the latest CEO Confidence Index from Vistage, a CEO coaching and peer advisory organization. This quarter marks four consecutive quarters of increased confidence, signaling sustained growth in economic optimism. In Q1 2024, the Vistage CEO Confidence Index surged nearly four points to 85.9, maintaining its steady climb from 82 in Q4 2023, 76 in Q3 2023, 74.2 in Q2 2023, and 72.6 in Q1 2023. "Much like athletes undergoing rigorous rehabilitation after sustaining serious injuries, our economy is steadily recovering from the unprecedented challenges imposed by the pandemic," said Joe Galvin, Vistage's chief research officer. "We've observed a notable improvement in economic sentiment, which has been a key driver behind the surging Vistage CEO Confidence Index. While expectations for revenue and profits have remained stable compared to the previous quarter, we've noticed a slight increase in investment for expansion initiatives, tempered by a decline in intentions to hire. We are cautiously optimistic we are slowly inching towards a 2025 growth cycle."

B. THE AFFIRMATIVE PLAN WILL UNDERMINE SMALL BUSINESS CONFIDENCE. (NOTE: ONLY READ THE LINK EVIDENCE THAT IS APPLICABLE TO THE CASE YOU ARE DEBATING.)

1. Congress will cater patent reform to big businesses at the expense of small businesses.

Robert Schmidt et al, (Chairman and CEO of Cleveland Medical Devices), Apr. 25, 2014, Retrieved May 14, 2024 from https://ipwatchdog.com/2014/04/25/why-patent-reform-harms-innovative-small-businesses/id=49260/

The recent "Patent Reform" bills have an insidious effect on small businesses. The proposed legislation ensures small inventors will never be able to get the best inventions to market by imposing: Fee Shifting "Joinder", Loser Pays, Pay to Play, Covered Business Methods (CBM), Elimination of Post Grant Review Estoppel, Disclosure of All Plaintiff Interested Parties, Enhanced Pleadings and Limiting Discovery, and Customer Stay provisions that are so onerous, only large corporations will be able to commercialize inventions. The provisions will make small inventing companies "Toxic Assets" to investors. Small inventors will likely need at least $5 million in the bank, not for their own use, but to cover the infringers' costs. This is part of the shift in Congress to cater to big money interests, leaving the middle class behind. The details of these legislative "potholes" will be explained in this five part series.

2. Copyright laws will be leveraged to make profit—undermining the U.S. economy.

Megan Marrs, (veteran content marketer), THE SMALL BUSINESS GUIDE TO THE DMCA AND COPYRIGHT LAW, Dec. 26, 2013, Retrieved May 14, 2024 from https://www.wordstream.com/blog/ws/2013/12/26/dmca

It lets the rich get richer while hurting the little guy. The DMCA enables those with big pockets to profit while perpetuating the embarrassing concept that the U.S. is a lawsuit-hungry monster of a country. The practice of leveraging copyrights and patent suites to make profit is damaging the economy by preventing innovation and creativity from thriving. (This American Life has a fascinating story about the upsetting patent troll schemes happening across the country – check it out when you have the time.)

3. Trademark protections will be weaponized against small businesses.

Nicole Smith, (Educational Consulting, Leadership Development), TRADEMARK BULLYING - MY CHALLENGE AS A SMALL BUSINESS OWNER, Mar. 13, 2023, Retrieved May 14, 2024 from https://www.linkedin.com/pulse/trademark-bullying-my-challenge-small-business-smith-m-ed--1c

At this time, I started researching the term Trademark Bullying. Litigation can be expensive, and trademark bullies can force considerable expenses and effort before we, the small business, have any chance at getting the case dismissed, due to a lack of deep pockets. There is a significant resource difference between the trademark bully and the small business owners. The small business owner may need more resources to mount an effective defense; even worse, their use of the subject trademark is frequently not worth the expense of defending that mark. Mine was. There can be a fine line between legitimate efforts to protect a trademark and overzealous efforts to cash in on bogus claims for trademark protection. A trademark owner is certainly entitled to defend its trademark, and in some circumstances may even be legally compelled to take proper action or risk losing its rights. This legal obligation, however, does not empower a trademark owner to assault every usage of its chosen word or phrase.

C. BUSINESS CONFIDENCE IS CRUCIAL TO THE ECONOMY.

Yumei Guo, (School of Finance, Central University of Finance and Economics, China) & Shan He, (School of Finance, Central University of Finance and Economics, China), DOES CONFIDENCE MATTER FOR ECONOMIC GROWTH? AN ANALYSIS FROM THE PERSPECTIVE OF POLICY EFFECTIVENESS, Apr. 14, 2020, Retrieved May 13, 2024 from https://www.sciencedirect.com/science/article/abs/pii/S1059056020300812

Third, the present study broadens the research on confidence by examining the role of business confidence. Extant studies largely examined the role of confidence from the perspective of consumer confidence, but business confidence, which motivates the behavior of producers, can also be an important driver of economic fluctuations. The present study examines the role of business confidence and finds that it is just as crucial for the economy as consumer confidence.

D. PERCEPTIONS ARE ENOUGH TO DECREASE BUSINESS CONFIDENCE.

Kristen Stephenson, (Greater Phoenix Economic Council), EXPLORING THE EFFECTS OF THE BUSINESS CONFIDENCE INDEX, Dec. 21, 2023, Retrieved May 13, 2024 from https://www.gpec.org/blog/exploring-the-effects-of-the-business-confidence-index/

What does the business confidence index measure? The business confidence index measures businesses' perceptions of the economy. Much like consumer confidence, business confidence can be tracked in a number of ways such as the Institute for Supply Management's Purchasing Managers Index or Moody's Survey of Business Confidence. The economic monitor tracks the Organisation for Economic Cooperation and Development (OECD) Business Confidence Index (BCI). The higher the index value, the more confident businesses are about economic conditions. In the case of the OECD Business Confidence Index, an index reading above 100 indicates increased confidence in future business performance, while numbers below 100 indicate pessimism towards the future. The index is created based on opinion surveys regarding production, orders and finished goods.

E. AN ECONOMIC CRISIS RISKS A GLOBAL MILITARY CONFLICT.

Qian Liu, (Managing Director, Greater China, The Economist Group), THE NEXT ECONOMIC CRISIS COULD CAUSE A GLOBAL CONFLICT. HERE'S WHY, Nov. 13, 2018, Retrieved May 13, 2024 from https://www.weforum.org/agenda/2018/11/the-next-economic-crisis-could-cause-a-global-conflict-heres-why/

The response to the 2008 economic crisis has relied far too much on monetary stimulus, in the form of quantitative easing and near-zero (or even negative) interest rates, and included far too little structural reform. This means that the next crisis could come soon – and pave the way for a large-scale military conflict. The next economic crisis is closer than you think. But what you should really worry about is what comes after: in the current social, political, and technological landscape, a prolonged economic crisis, combined with rising income inequality, could well escalate into a major global military conflict.

INNOVATION DISADVANTAGE

Thesis: The thesis of this disadvantage is that the plan would undermine innovation in the United States economy, preventing the United States from beefing up its military. In the present system, the U.S. military is strong in large part due to civilian sector innovations. However, the plan undermines innovation in the economy because large businesses are slower and less dynamic than small businesses. This failure to enhance innovation undermines the U.S. military at a key moment in time where we need to be strong to deter threats from Russia and China.

A. THE U.S. IS THE WORLD'S TECH LEADER NOW—THIS ENSURES GEOPOLITICAL LEADERSHIP.

J.H. Cullum Clark, (J.H. Cullum Clark Director, Bush Institute-SMU Economic Growth Initiative), Spring 2024, Retrieved June 2, 2024 from https://www.bushcenter.org/catalyst/why-us-leadership-still-matters/how-to-remain-the-innovation-nation

The United States' preeminence in science and technology has long played an underappreciated but vital role in ensuring U.S. economic and geopolitical leadership. But the United States risks squandering this precious asset today through neglect and misguided ideology. After World War II, the country came to dominate global research and development (R&D) by building the best model for nation-scale innovation the world has ever seen. Before the war, the United States was, at best, a second-tier science power. The Manhattan Project, for example, relied heavily on expatriate European scientists. But between 1947 and 1950, the Truman Administration and Congress, in a series of decisions, adopted one of the most consequential policy objectives in history: to make the United States into the world's unrivaled science superpower.

B. STUDIES PROVE: STRENGTHENING INTELLECTUAL PROPERTY RIGHTS UNDERMINES INNOVATION.

Julia Brüggemann, (Phd) Georgetown University, 2015, INTELLECTUAL PROPERTY RIGHTS HINDER SEQUENTIAL INNOVATION: EXPERIMENTAL EVIDENCE https://www.econstor.eu/bitstream/10419/106128/1/814347134.pdf

Abstract: In this paper we contribute to the discussion on whether intellectual property rights foster or hinder innovation by means of a laboratory experiment. We introduce a novel Scrabble-like creativity task that captures most essentialities of a sequential innovation process. We use this task to investigate the effects of intellectual property allowing subjects to assign license fees to their innovations. We find intellectual property to have an adversely effect on welfare as innovations become less frequent and less sophisticated. Communication among innovators is not able to prevent this detrimental effect. Introducing intellectual property results in more basic innovations and subjects fail to exploit the most valuable sequential innovation paths. Subjects act more self-reliant and non-optimally in order to avoid paying license fees. Our results suggest that granting intellectual property rights hinders innovations, especially for sectors characterized by a strong sequentiality in innovation processes.

C. THE MILITARY USES CIVILIAN SECTOR INNOVATIONS

Christine Mitchell, (staff writer), IT'S TIME TO ELEVATE ATTENTION ON THE CIVILIAN WORKFORCE, ARMY LEADERS SAY, October 24, 2023, Retrieved June 2, 2024 from https://www.jbsa.mil/News/News/Article/3567363/its-time-to-elevate-attention-on-the-civilian-workforce-army-leaders-say/

The mission is clear: We are preparing our force to become the Army of 2030 through innovation. Innovation is always a priority for the service, but at this year's Association of the United States Army Annual Meeting and Exposition in Washington, Army leaders spoke about how they want to foster innovation specifically within the civilian workforce. The task, they say, is the Army must cultivate a culture where innovation is not only encouraged, but expected. "Innovation is hard, but we really need to attack this on both the military and civilian side," said Dr. Agnes Schaefer, Assistant Secretary for Manpower and Reserve Affairs, who opened the panel discussion. "It's about embracing change and adapting to stay relevant."

D. INNOVATION IS KEY TO MILITARY READINESS.

Jim Garamone, (reporter with American Forces Press Service), HICKS MAKES CASE THAT EFFECTIVE DEFENSE INNOVATION IS MOVING FORWARD, Jan. 30, 2024, Retrieved June 2, 2024 from https://www.defense.gov/News/News-Stories/Article/Article/3661297/hicks-makes-case-that-effective-defense-innovation-is-moving-forward/

Innovation is key to continuing U.S. military might, and the Defense Department is working to make the institution more agile and a good partner for private capital, said Deputy Defense Secretary Kathleen Hicks at the American Dynamism Summit in Washington today. The United States has a history of innovation that must be nurtured and stoked as the nation faces competition from competitors who want to fundamentally change the rules-based international order that has maintained great power peace since the end of World War II. China is the competitor with the means and will to "overmatch" the United States, she said. The Chinese government uses "predatory investment strategies, crackdowns on due-diligence companies and business intelligence providers that [venture capitalists] need to make smart bets, overtly forcing tech to comply with political ideologies [and the] use of forced labor, repression and exploitation of religious minorities," Hicks said.

E. INNOVATION IS KEY TO U.S. MILITARY DETERRENCE

Jim Garamone, (reporter with American Forces Press Service), HICKS MAKES CASE THAT EFFECTIVE DEFENSE INNOVATION IS MOVING FORWARD, Jan. 30, 2024, Retrieved June 2, 2024 from https://www.defense.gov/News/News-Stories/Article/Article/3661297/hicks-makes-case-that-effective-defense-innovation-is-moving-forward/

"Because we owe them and every U.S. service member our very best, for three years now we have taken a comprehensive, iterative, warfighter-centric approach to innovation — recognizing we face an accumulation of challenges and barriers, and there is no silver bullet that will lower them all," she continued. "Along the way, we've never wavered from our ultimate objective: delivering safe and reliable, combat-credible capabilities at speed and scale to America's warfighters — so they can deter aggression and win if called to fight."

F. U.S. MILITARY DOMINANCE DETERS GREAT POWER WAR.

General Mark A. Milley, (Former Chief of Staff of the U.S. Army), STRATEGIC INFLECTION POINT: THE MOST HISTORICALLY SIGNIFICANT AND FUNDAMENTAL CHANGE IN THE CHARACTER OF WAR IS HAPPENING NOW—WHILE THE FUTURE IS CLOUDED IN MIST AND UNCERTAINTY, July 2023, Retrieved June 2, 2024 from https://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-110/Article/article/3447159/strategic-inflection-point-the-most-historically-significant-and-fundamental-ch/

Since 1945, there have been several limited and regional wars, but there has not been another Great Power war. There are many reasons for this outcome. Two of the most important reasons are the rules-based international order enforced by a network of allies and partners and the dominant capability of the U.S. military. This order has held for almost eight consecutive decades. Unfortunately, we now see tears in the fabric of the rules-based international order as adversarial global powers continuously challenge the system. The time to act is now. The U.S. military's purpose is simple and contained in our oath to support and defend the Constitution against all enemies, both foreign and domestic, and to protect the American people and our interests. Since World War II, the strength of our nation and military, alongside that of our allies and partners, has deterred Great Power war. Freedom is not guaranteed. As Ronald Reagan warned, "Freedom is a fragile thing and it's never more than one generation away from extinction. It is not ours by way of inheritance; it must be fought for and defended constantly by each generation."

II. THE AFFIRMATIVE ANSWERS TO THE DISADVANTAGE ARE INADEQUATE.

A. UNIQUENESS: TECH LEADERSHIP HIGH NOW

1. Biden's legislation has restored U.S. tech leadership in the present system.

Gerhard Peters, (The American Presidency Project), & John T. Woolley, (The American Presidency Project), ICYMI: "THE GREAT AMERICAN INNOVATION ENGINE IS FIRING AGAIN," May 11, 2024, Retrieved June 2, 2024 from https://www.presidency.ucsb.edu/documents/icymi-the-great-american-innovation-engine-firing-again

This weekend, Americans are reading about how President Biden's CHIPS and Science Act has catapulted the U.S. tech manufacturing ecosystem forward and restored America's leadership in critical industries of the future. Less than two years after President Biden signed the bill into law, companies like TSMC, Intel, and Microsoft are building semiconductor fabs and data centers on American soil that will employ thousands of hard-working, middle-class Americans. According to Financial Times, "The U.S. has both the intent and the capability to reassert global technological leadership." Shoring up American supply chains, driving American competitiveness, and creating job opportunities in communities across the country — the President's economic agenda is delivering for American workers and businesses.

2. U.S. R&D leadership has led to dominance in tech innovations across multiple sectors of the economy.

J.H. Cullum Clark, (J.H. Cullum Clark Director, Bush Institute-SMU Economic Growth Initiative), Spring 2024, Retrieved June 2, 2024 from https://www.bushcenter.org/catalyst/why-us-leadership-still-matters/how-to-remain-the-innovation-nation

America's postwar R&D model has been a resounding success. According to one global ranking, U.S. universities constitute 46 of the top 100 research institutions in the world and eight of the top 10 for the quality of their patenting activity. U.S.-based scientists account for 30% of citations in top-tier scientific journals, according to 2022 data from the NSF. That compares with 20% for Chinese researchers and 21% for all of Europe. The United States' commitment to world-leading federal R&D investment is based on the understanding that science is a key public good. The U.S. model has succeeded because, more than anywhere else, it harnesses the power of both public sector resources and private sector enterprise. The United States' commitment to world-leading federal R&D investment is based on the understanding that science is a key public good. Without critical public sector resources, private firms would likely underinvest in R&D, since they're unlikely to reap all the benefits generated by scientific advances. The United States' competitive, lightly regulated research and commercialization model and its wide-open market for new ideas create much stronger incentives to innovate. These advantages help explain why America's IT and biotech sectors far outperform their peers in Europe, where a larger share of researchers work for government agencies (and thus lack a profit motive). The U.S. R&D model has allowed the country to develop dominant market positions in countless industries: semiconductors, software, defense, space, natural gas and wind-based energy, biotechnology, and more. Most recently, the U.S. model of publicly funded university research feeding into private sector initiatives created the mRNA-based COVID-19 vaccines, one of humanity's towering technical achievements.

3. Innovation centers in the U.S. are bolstering economic development.

J.H. Cullum Clark, (J.H. Cullum Clark Director, Bush Institute-SMU Economic Growth Initiative), Spring 2024, Retrieved June 2, 2024 from https://www.bushcenter.org/catalyst/why-us-leadership-still-matters/how-to-remain-the-innovation-nation

Local governments should use their land-use and taxing powers to promote urban innovation districts – places that bring together researchers and entrepreneurs to accelerate new technologies. America's fast-growing innovation districts are succeeding as engines of economic development, as first-of-its-kind data in the Bush Institute-SMU report show. Policymakers should support their expansion.

B. UNIQUENESS—MORE INNOVATION NOW

1. The U.S. has created innovation ecosystems that keeps American leadership strong now.

J.H. Cullum Clark, (J.H. Cullum Clark Director, Bush Institute-SMU Economic Growth Initiative), Spring 2024, Retrieved June 2, 2024 from https://www.bushcenter.org/catalyst/why-us-leadership-still-matters/how-to-remain-the-innovation-nation

The close connection between R&D and prosperity is particularly evident in U.S. cities. A new George W. Bush Institute-SMU Economic Growth Initiative report shows that metropolitan areas with high concentrations of university R&D far outperform most other U.S. metros in business R&D spending, education levels, and incomes – including for people who don't have a college degree. This means investing in research universities across the country and their nearby surrounding innovation ecosystems is a vital component of renewing America's leadership in science and technology as well as reinvigorating distressed regions of the nation.

2. The U.S. will have another wave of private sector innovation.

Gerhard Peters, (The American Presidency Project), & John T. Woolley, (The American Presidency Project), ICYMI: "THE GREAT AMERICAN INNOVATION ENGINE IS FIRING AGAIN," May 11, 2024, Retrieved June 2, 2024 from https://www.presidency.ucsb. edu/documents/icymi-the-great-american-innovation-engine-firing-again

Once again, the U.S. federal government is back in the game of funding technology in a big way, promising to unleash a further wave of private sector investment and innovation.

C. LINKS: BROAD PATENTS LINKS

1. Broad patents create excessive litigation and prop up barriers that limit competition.

Wayne Brough, (Policy Director, Technology and Innovation at R Street), CONGRESS WANTS TO REVIVE PATENTS BUT MAY STRANGLE INNOVATION AND DAMAGE HEALTH CARE ACCESS INSTEAD, Apr 3, 2024. Retrieved June 2, 2024 from https://www.rstreet.org/commentary/congress-wants-to-revive-patents-but-may-strangle-innovation-and-damage-health-care-access-instead/

In many ways, recently proposed changes would return the patent system to policies of the late 1990s and early 2000s, when the courts were beset with patent litigation originating from excessive claims of patentability. Allowing companies to patent abstract business methods or practices prompted a surge in lawsuits targeting other companies using similar business processes—even obvious or commonsense practices. While broader patent eligibility strengthens the hand of patent owners, the impact on innovation is less clear. Research has found that such overly broad patents generate excessive litigation while creating significant barriers to entry that limit competition. This ultimately sparked the Supreme Court rulings that established new limits on the possibility of patenting abstract concepts or inventions.

2. Broad, long, or fragmented IP Rights hinder innovation.

Julia Brüggemann, (Phd) Georgetown University, 2015, INTELLECTUAL PROPERTY RIGHTS HINDER SEQUENTIAL INNOVATION: EXPERIMENTAL EVIDENCE https://www.econstor.eu/bitstream/10419/106128/1/814347134.pdf

Moreover, too broad, too long, or too fragmented IP rights can give rise to gridlock and anticommons issues in downstream innovations (Heller and Eisenberg 1998). In this paper we contribute to the debate by means of a controlled real-effort laboratory experiment involving creativity. We introduce a novel design that allows us to create counterfactual situations and test directly the effects of IP rights on the innovation rate and welfare of a laboratory economy.

D. COPYRIGHT LAWS LINKS

1. Even one copyright dispute triggers lawsuits which create an existential threat to the survival of the company.

Amanda Reid, (Assistant Professor at the University of North Carolina at Chapel Hill), COPYRIGHT POLICY AS CATALYST AND BARRIER TO INNOVATION AND FREE EXPRESSION, 2019, Retrieved June 2, 2019, Retrieved June 2, 2024 from https://scholarship.law.edu/cgi/viewcontent.cgi?article=3485&context=lawreview

But even when a new technology does not infringe, the risk of litigation is a powerful disincentive for innovators. A copyright lawsuit is often an existential threat to the survival of the firm. Not only are company trade secrets put at risk of disclosure during the litigation process, but the costs—in time and money—are enormous. Rarely can a defendant escape litigation before the discovery phase and before accumulating sizable litigation costs.160 Indeed, litigation can last for years and the legal fees can reach into the millions. For example, YouTube's successful defense against Viacom's copyright lawsuit is estimated to have generated over $100 million in legal costs. Only the best capitalized firms are able to absorb such costs. Start-ups have comparatively fewer resources than established industry groups and are less able to bear the cost of litigating—even a meritorious case.

2. Copyright claims chill innovation in technology centers.

Amanda Reid, (Assistant Professor at the University of North Carolina at Chapel Hill), COPYRIGHT POLICY AS CATALYST AND BARRIER TO INNOVATION AND FREE EXPRESSION, 2019, Retrieved June 2, 2019, Retrieved June 2, 2024 from https://scholarship.law.edu/cgi/viewcontent.cgi?article=3485&context=lawreview

The attractiveness of modern copyright as a weapon to chill speech is due to four interrelated factors: (1) the ease and "ubiquity" of infringement; (2) the simplicity of asserting a prima facie infringement case; (3) the uncertainty of available defenses, like fair use; and (4) the threat of hefty statutory penalties. Censorship by copyright undermines core First Amendment principles. Copyright out of balance threatens our liberty to learn. Copyright threatens access to the building blocks of learning and culture. For example, a survey of visual artists and visual arts professionals found that one-third have avoided or abandoned work in their field because of copyright concerns. And more than one-half of their editors and publishers have also abandoned projects, such as illustrated books and articles. Copyright concerns have thwarted digital dissemination of cultural and scientific works by museums and libraries, retarded dissemination of works of historically marginalized communities, and undermined preservation of degrading older works. The dissemination of new ideas has been undermined by copyright concerns.

3. Copyright law leads to rights violations and power asymmetries

Jessica Silbey, (prof of law at Boston University), HOW COPYRIGHTS, PATENTS, AND TRADEMARKS MAY STIFLE CREATIVITY AND PROGRESS), Aug. 16, 2022, Retrieved June 2, 2024, https://www.bu.edu/articles/2022/how-copyrights-patents-trademarks-may-stifle-creativity-and-progress/

"Does copyright have anything to do with it?" Silbey asks. "Who owns the copyright is one relevant fact, but it hasn't fixed anything. Copyright doesn't give me enough leverage to negotiate against Condé Nast. It doesn't solve the problem of power dynamics or professional integrity. It actually prevents us from talking about the things we need to talk about: fair wages, labor equity, and abusive contracting provisions that take advantage of weaker parties."

4. Copyright policy deters innovation especially with breakthrough technologies.

Amanda Reid, (Assistant Professor at the University of North Carolina at Chapel Hill), COPYRIGHT POLICY AS CATALYST AND BARRIER TO INNOVATION AND FREE EXPRESSION, 2019, Retrieved June 2, 2019, Retrieved June 2, 2024 from https://scholarship.law.edu/cgi/viewcontent.cgi?article=3485&context=lawreview

But disruptive technology can face serious limitations when confronted with copyright law. Copyright policy is inextricably intertwined with new communications technologies. Copyright can deter innovation because the application of the law to breakthrough technologies is often uncertain. Copyright policy, therefore, creates winners and losers in the marketplace. Copyright allows incumbents to lock out competition. As an exclusive right (i.e., the right to exclude), the copyright holder can deny a competitor access to "an essential input," namely the copyrighted work. As a financial instrument, copyright enables supra-competitive market rates. Exclusive rights artificially create scarcity of a public good. And the economic distortions caused by the rightsholder's supra-competitive prices can, in turn, create deadweight losses—to the extent there is unmet need at supra-competitive prices.

5. The more favoritism we give to artists, the more it discourages technological innovation.

Amanda Reid, (Assistant Professor at the University of North Carolina at Chapel Hill), COPYRIGHT POLICY AS CATALYST AND BARRIER TO INNOVATION AND FREE EXPRESSION, 2019, Retrieved June 2, 2019, Retrieved June 2, 2024 from https://scholarship.law.edu/cgi/viewcontent.cgi?article=3485&context=lawreview

To balance competing interests, copyright is a policy-minded compromise. Copyright's exclusive rights—granted to stimulate production and public dissemination of creative works—have costs. The Supreme Court has acknowledged that "[t]he more artistic protection is favored, the more technological innovation may be discouraged; the administration of copyright law is an exercise in managing the tradeoff."40 Thus every right to exclude impairs the liberty and freedom of others.

E. IPR GENERIC LINKS: BIG COMPANIES WILL WORK AGAINST SMALL COMPANIES

1. Strengthening IP laws helps large companies fence off competition for smaller firms.

Jens Martin Skibsted, (Global Partner at Manyone and a multiple award-winning designer and entrepreneur), IP LAWS ARE HOLDING BACK INNOVATION, Mar 6, 2023, Retrieved June 2, 2024 from https://www.forbes.com/sites/forbestechcouncil/2023/03/06/ip-laws-are-holding-back-innovation/?sh=c05acc03715a

However, there needs to be a paradigm shift in how intellectual property ownership is viewed and shared to achieve this. At the moment, what IP laws do best is help large companies fence off competition. This is good for the bottom line but not so great for leveling the playing field. Or, as seen in the latest debacle between Wizards of the Coast and the global Dungeons & Dragons community, it's potentially harmful to the bottom line. Failure to realize the potential can lead to people circumventing IP laws by creating workarounds to drive cutting-edge innovation. Crowdsourcing platforms continue to grow as people look to create together across disciplines and cultures without worrying about patents.

2. IPRs undermine innovation—they act as a brake on the creation of complex inventions.

Julia Brüggemann, (Phd) Georgetown University, 2015, INTELLECTUAL PROPERTY RIGHTS HINDER SEQUENTIAL INNOVATION: EXPERIMENTAL EVIDENCE https://www.econstor.eu/bitstream/10419/106128/1/814347134.pdf

What is the effect of IP rights on innovation? Our IP treatments are designed to provide an experimental answer to this issue. In our task, overall welfare depends on the relative number of extensions built per each root. Since the expected net value of buying one letter is negative (the expected value of randomly drawing a letter is 1.87 for a cost of 2), a group only producing roots will face a decline in welfare, as compared with the initial endowment. Extensions allow groups to use their resources (letters) several times, producing net welfare gains as investment costs are sunk. In IP treatments the presence of license fees affects the allocation of the surplus generated by extensions between the upstream and the downstream inventors. IP rights give incentives to innovate, but at the same time impose costs on downstream innovators, and hence act as a brake on the creation of more complex, derivative inventions. As in Scotchmer (1991), the effect of IP rights on overall welfare are hence ex-ante ambiguous, and we do not posit a specific hypothesis on the matter.

3. Studies prove that Intellectual Property Rights led to less and smaller innovation levels--

Julia Brüggemann, (Phd) Georgetown University, 2015, INTELLECTUAL PROPERTY RIGHTS HINDER SEQUENTIAL INNOVATION: EXPERIMENTAL EVIDENCE https://www.econstor.eu/bitstream/10419/106128/1/814347134.pdf

Results clearly show that the introduction of intellectual property hinders innovation. In presence of IP the economy produces less and less valuable innovations, and welfare decreases. Introducing IP causes a shift towards more basic innovations and a higher degree of autarky – i.e., relying on the self-produced prior innovations rather than building on the best available opportunity within the economy at large. Conversely, the absence of IP results in more sophisticated and more valuable innovations and provides incentives to stand on the shoulders of giants, opening up more and more profitable innovation paths. Moreover, the negative effects of IP are not a short term phenomenon, but rather worsen over time as license fees tend to increase, leading to the breakdown of cooperative efforts and the use of autarkic strategies.

4. Stronger protections for trademarks lead to exploitative behavior.

Heath Davidson, (Assistant Professor of Finance at the University of Utah) & Christopher Mace,(Assistant Professor of Finance at the University of Utah), https://www.cato.org/sites/cato.org/files/2019-11/research-brief-189.pdf

We next examine the FTDA's effects on product quality and innovation and product-market strategy. In theory, trademark protection incentivizes firms to produce high-quality products and prevents a race to the bottom. Alternatively, trademark protection insulates incumbents from competition, in which case stronger protection may lead to more exploitative behavior. We find that stronger trademark protection decreased product quality, as firms that were granted additional trademark protection had increased frequency and dollar value of recalls of unsafe products and were less likely to launch a recall voluntarily.

F. NEW AREAS LINKS: INCREASING PATENT PROTECTIONS TO NEW AREAS DECREASES INNOVATION

Julia Brüggemann, (Phd) Georgetown University, 2015, INTELLECTUAL PROPERTY RIGHTS HINDER SEQUENTIAL INNOVATION: EXPERIMENTAL EVIDENCE https://www.econstor.eu/bitstream/10419/106128/1/814347134.pdf

These results are robust to the introduction of communication. The possibility to cooperate directly via chat, that is the possibility to negotiate a mutually beneficial level of license fees, is only seldom exploited, and if so, it does not lead to increased levels of innovation and welfare. Our experimental approach gives us distinct control over confounding factors, and produces clean causal evidence. At the same time, the validity of results from the lab for actual field conditions might be questioned. Therefore, we chose a task that included several features of real innovations – the sequential nature, the intrinsic plus the potential value of innovations, the role of creativity, knowledge, cooperation, competition, and skill, the presence of risky investments –, that were at the same time intuitive for subjects and completely controllable by the experimenters. To the extent that the characteristics of our task match the ones of actual innovation industries, our results can be applied also outside the laboratory. Our results suggest that in industries where innovations are strongly sequential – as in pharmaceutical, bioengeneering, and software industries – granting intellectual property rights might slow down the rate of innovation and reduce welfare. Thus, our findings lend support to the arguments against the extension of intellectual property to new fields, especially if they are characterized by fast, frequent, small and cumulative innovations – as is the case of software patents. Our findings are in line with insights from the model of Bessen and Maskin (2009) and the case against IP made by Boldrin and Levine (2013). In our experiment both innovation and welfare thrive without IP, as it happened to several industries in the past, and are hampered by the presence of intellectual property rights, whose stated reason to exist is, paradoxically, to foster innovation.

G. PATENT LINKS

1. Expanding patent eligibility undermines innovation in critical technologies.

Wayne Brough, (Policy Director, Technology and Innovation at R Street), CONGRESS WANTS TO REVIVE PATENTS BUT MAY STRANGLE INNOVATION AND DAMAGE HEALTH CARE ACCESS INSTEAD, Apr 3, 2024. Retrieved June 2, 2024 from https://www.rstreet.org/commentary/congress-wants-to-revive-patents-but-may-strangle-innovation-and-damage-health-care-access-instead/

Expanding Patent Eligibility Limits Innovation and Competition Supporters claim that patent eligibility practices in the wake of the aforementioned Supreme Court decisions hinder innovation and investment in critical technologies like AI, personalized medicine, and diagnostic testing. On the other hand, critics assert that the PERA would restore an earlier patent regime that granted patent protections too broadly, making it difficult for true innovators to navigate complex and far-reaching patents that limit entry into the market.

2. On balance, the patent system discourages innovation

Michael J. Meurer, (Professor of Law, Boston University), PATENT SYSTEM OFTEN STIFLES THE INNOVATION IT WAS DESIGNED TO ENCOURAGE, Mar. 16, 2021, Retrieved May 2, 2024 from https://theconversation.com/patent-system-often-stifles-the-innovation-it-was-designed-to-encourage-148075

Economic research suggests that these litigation costs and license fees burden innovative firms to such a degree that on balance the patent system discourages innovation. In other words, innovative firms gain a benefit from their patents on their new technology, but that benefit is more than offset by the many patents owned by others that might be asserted against the new technology.

3. Intellectual property rights result in patent trolls, significantly damaging innovation.

Pujith Gayon, (author, lawyer and a columnist), INTELLECTUAL PROPERTY RIGHTS: BALANCING INNOVATION, ACCESSIBILITY, AND ETHICAL CONCERNS, Apr 30, 2023, Retrieved June 2, 2024 from https://www.PujithGayon.linkedin.com/pulse/intellectual-property-rights-balancing-innovation-ethical-gayon

One of the most significant negative impacts of IPR is its potential to hinder innovation. Patent trolls, or companies that hold patents primarily to sue other companies for infringement, can significantly damage innovation. These companies don't produce or innovate anything themselves, but they can stifle the development of new technology and products by filing frivolous lawsuits. Additionally, large companies can use their vast patent portfolios to create monopolies and prevent competition. This not only limits innovation but also creates a more substantial financial burden on consumers.

4. Broad patents make innovation more difficult.

Wayne Brough, (Policy Director, Technology and Innovation at R Street), CONGRESS WANTS TO REVIVE PATENTS BUT MAY STRANGLE INNOVATION AND DAMAGE HEALTH CARE ACCESS INSTEAD, Apr 3, 2024. Retrieved June 2, 2024 from https://www.rstreet.org/commentary/congress-wants-to-revive-patents-but-may-strangle-innovation-and-damage-health-care-access-instead/

While the goal of the patent system is to "promote the Progress of Science and useful Arts," a return to overly broad patents increases the threat of litigation while making innovation more difficult. Indeed, many non-practicing entities focus exclusively on litigation rather than practicing patents. These entities do not innovate or produce new products; rather, they acquire large portfolios of patents solely to assert them in infringement cases against true inventors attempting to bring new products to market.

5. The plan will trigger patent trolls—slowing innovation.

Michael J. Meurer, (Professor of Law, Boston University), PATENT SYSTEM OFTEN STIFLES THE INNOVATION IT WAS DESIGNED TO ENCOURAGE, Mar. 16, 2021, Retrieved May 2, 2024 from https://theconversation.com/patent-system-often-stifles-the-innovation-it-was-designed-to-encourage-148075

Opportunistic patent owners, often called patent trolls, surprise inventors with patent claims about inventions that are minor or distantly related to the technology that is the target of the suit. Economics research shows such trolling activity slows innovation.

6. Expanding patent eligibility stifles innovation and competition.

Wayne Brough, (Policy Director, Technology and Innovation at R Street), CONGRESS WANTS TO REVIVE PATENTS BUT MAY STRANGLE INNOVATION AND DAMAGE HEALTH CARE ACCESS INSTEAD, Apr 3, 2024. Retrieved June 2, 2024 from https://www.rstreet.org/commentary/congress-wants-to-revive-patents-but-may-strangle-innovation-and-damage-health-care-access-instead/

Expanding patent eligibility to allow companies to obtain patents on abstract ideas, natural phenomena, or even basic computing functions would significantly extend the monopolies of patent owners, stifling innovation and competition by giving patent holders greater authority to challenge new entrants for infringement as they try to access the market. It would abuse the tools of government to slow down competition and stifle innovation.

7. Patent rights benefit large firms which stifles innovation.

Jason Wiens, (Kauffman Foundation) & Chris Jackson, (Kauffman Foundation), HOW INTELLECTUAL PROPERTY CAN HELP OR HINDER INNOVATION, Apr. 6, 2015. Retrieved June 2, 2024 from https://www.kauffman.org/resources/entrepreneurship-policy-digest/how-intellectual-property-can-help-or-hinder-innovation/

Expansive patent rights make successive innovative activity more costly. Having to seek permission from all related patent holders bids up the cost of innovation. Overly strong patent rights disproportionately benefit large firms. Larger firms are more likely to use patents to entrench their position in the market, as opposed to small- and medium-sized firms that are more likely to use patents to accumulate revenue and enhance their reputation. When patent rights are stronger, firms with intellectual assets are emboldened to threaten other inventors with litigation. For example, NPEs often discourage innovation by more productive innovators.

8. Expanded patent eligibility will stifle innovations

Wayne Brough, (Policy Director, Technology and Innovation at R Street), CONGRESS WANTS TO REVIVE PATENTS BUT MAY STRANGLE INNOVATION AND DAMAGE HEALTH CARE ACCESS INSTEAD, Apr 3, 2024. Retrieved June 2, 2024 from https://www.rstreet.org/commentary/congress-wants-to-revive-patents-but-may-strangle-innovation-and-damage-health-care-access-instead/

Any proposed expansion of patent eligibility for inventions involving natural products or biological molecules and processes could have significant implications for drug prices and affordability. By allowing broader patenting of naturally occurring compounds, genes, proteins, and biological processes, pharmaceutical companies would gain stronger exclusive rights over these fundamental building blocks of drug development. This may be particularly problematic in rapidly evolving fields like AI, precision medicine, and genetic testing, where the closer a patent is to an abstract idea or natural phenomenon, the more stifling its impact will be on the development of new inventions and applications.

9. Patent litigation is very costly.

Maureen K. Ohlhausen, (Former commissioner of the Federal Trade Commission), Oct. 13, 2017, Retrieved June 1, 2024 from https://www.ftc.gov/system/files/documents/public_statements/1264483/ohlhausen_-_hillsdale_speech_10-13-17.pdf

III. Patent Rights in an Age of IP Skepticism Recent criticism of the patent system requires some explanation. What drives calls to diminish or eliminate the U.S. patent system? Several factors are responsible. For example, patenting technologies and commercializing them are increasingly separate acts, undertaken by different entities, and connected by patent licenses, if at all, after the fact. One effect of this evolution has been the rise of patent-assertion entities, known as PAEs. PAEs are businesses that acquire patents from third parties and then try to make money by negotiating with, or suing, accused infringers. Patent litigation has become more frequent and complex, making enforcing and defending against patent claims expensive. Finally, there has been a trend toward granting broad patents, which the Supreme Court has started to reverse. The implications of those factors are complicated. But even if today's patent system and associated litigation costs sometimes produce imperfect outcomes, they do not undermine the patent system's core function. Today's patent regime drives a varied, complex, and evolving array of technologies. The markets in which novel products and methods arise are themselves changing. Of course, there are imperfections in how patents execute their mission. But such complications are no reason to abandon the patent system wholesale.

10. Patents are at the heart of U.S. innovation.

Maureen K. Ohlhausen, (Former commissioner of the Federal Trade Commission), Oct. 13, 2017, Retrieved June 1, 2024 from https://www.ftc.gov/system/files/documents/public_statements/1264483/ohlhausen_-_hillsdale_speech_10-13-17.pdf

Patents have been at the heart of U.S. innovation since the founding of our country, and respect for patent rights is fundamental to advance innovation. The United States is more technologically innovative than any other country in the world. This reality reflects, in part, the property rights that the United States government grants to inventors. Still, foreign counterparts take or allow the taking of American proprietary technologies without due payment. For example, emerging competition regimes view "unfairly high royalties" as illegal under antitrust law. The FTC's recent policy work offers an important counterweight to this approach, illustrating the important role that patents play in promoting innovation and benefiting consumers. In closing, while we may live in an age of patent skepticism, there is hope. Criticism of IP rights frequently does not hold up upon closer examination. Rather, empirical research favors the close tie between strong IP rights and R&D. This is not to say that changes to the patent system are always unwarranted. Rather, the key to addressing the U.S. patent system lies in incremental adjustment where necessary based on a firm empirical foundation. The U.S. economy stands as a shining reminder of everything that American innovation policy has achieved – and intellectual property rights, and patents, are the important cornerstones of those achievements.

H. PATENTS CAUSE INFLATION: NEW PATENTS WILL LEAD TO PRICE HIKES.

Wayne Brough, (Policy Director, Technology and Innovation at R Street), CONGRESS WANTS TO REVIVE PATENTS BUT MAY STRANGLE INNOVATION AND DAMAGE HEALTH CARE ACCESS INSTEAD, Apr 3, 2024. Retrieved June 2, 2024 from https://www.rstreet.org/commentary/congress-wants-to-revive-patents-but-may-strangle-innovation-and-damage-health-care-access-instead/

A proliferation of patents in the life sciences and biotechnology fields could lead to more patent infringement lawsuits and costly legal battles over the boundaries of intellectual property rights. This situation was directly addressed by the Supreme Court in the wake of the litigation explosion in the late 1990s and early 2000s. Should the PERA's new patent eligibility standards restore those circumstances, increased litigation costs may be passed on to consumers in the form of higher drug prices and reduced choices, further exacerbating affordability issues.

I. TRADEMARK LINKS: THE MONOPOLY CREATED BY TRADEMARK PROTECTIONS CHILLS INNOVATION AND LEADS TO EXPLOITATION.

Heath Davidson, (Assistant Professor of Finance at the University of Utah) & Christopher Mace,(Assistant Professor of Finance at the University of Utah), https://www.cato.org/sites/cato.org/files/2019-11/research-brief-189.pdf

This theory also predicts that trademark protection affects innovation. First, some inventions cannot be patented or are better protected via secrecy instead of disclosure. Second, patents expire whereas trademarks do not: pharmaceutical firms often continue to sell the branded drug at a premium after their patent expires. Third, trademark protection is a determinant of market power, which is a primary incentive for innovation. We find that treated firms reduced research and development (R&D) spending, patenting activity, and new product introductions—suggesting that stronger trademark protection led to lower competition and less innovation. We also find that treated firms altered their product-market strategy by introducing brand-extending products in new product categories. At the same time, these firms created fewer new products in their legacy-product categories. Taken together, our results suggest that firms responded to stronger trademark protection by pursuing a more exploitative and less innovative product-market strategy, at the same time extending their brands into all-new product markets.

J. INTERNAL LINKS: PATENT THICKETS: STRENGTHENED INTELLECTUAL PROPERTY LAWS UNDERMINE INNOVATION BY CREATING PATENT THICKETS.

Jason Wiens, (staff writer), & Chris Jackson, (staff writer), HOW INTELLECTUAL PROPERTY CAN HELP OR HINDER INNOVATION, Apr. 6, 2015. Retrieved June 2, 2024 from https://www.kauffman.org/resources/entrepreneurship-policy-digest/how-intellectual-property-can-help-or-hinder-innovation/

But firms can also use patents and other forms of intellectual property in inefficient and anti-competitive ways. Firms may use patents as a strategic deterrent by building up “patent thickets,” which make incremental or follow-on innovation by other firms a more challenging and costly process. Non-Practicing Entities (NPEs) also have been identified by many policymakers as a costly impediment to innovation and economic growth.

K. INTERNAL LINKS: AMBIGUOUS OR BROAD PATENTS LEAD TO LITIGATION—MASSIVELY INCREASING COSTS FOR SMALL COMPANIES.

Jason Wiens, (Kauffman Foundation) & Chris Jackson, (Kauffman Foundation), HOW INTELLECTUAL PROPERTY CAN HELP OR HINDER INNOVATION, Apr. 6, 2015. Retrieved June 2, 2024 from https://www.kauffman.org/resources/entrepreneurship-policy-digest/how-intellectual-property-can-help-or-hinder-innovation/

It is important to encourage follow-on innovation that can dramatically add value to pioneering inventions. The current system, however, advantages those who don’t research existing patents in the field for fear of litigation. Patent policy should protect inventors who genuinely attempt to avoid existing patents and punish inventors who willfully ignore previous patents. Ambiguous or broad patents are hindrances to growth, especially for software patents. The broadness of a patent increases the likelihood that companies will accidentally infringe, and thus increases the likelihood of patent litigation (which can easily cost more than $500,000).

L. PERCEPTION LINKS

1. Even the threat of a lawsuit leads to potential bankruptcies for small businesses.

Amanda Reid, (Assistant Professor at the University of North Carolina at Chapel Hill), COPYRIGHT POLICY AS CATALYST AND BARRIER TO INNOVATION AND FREE EXPRESSION, 2019, Retrieved June 2, 2019, Retrieved June 2, 2024 from https://scholarship.law.edu/cgi/viewcontent.cgi?article=3485&context=lawreview

The threat of litigation and the uncertainty of litigation costs are substantial barriers to innovation. Even when a defendant prevails, the costs can be ruinous for a start-up company. The cost and time to defend can be "backbreaking" even with "the most ironclad fair-use defenses." The opportunity costs and litigation costs can bankrupt a company. Thus, copyright uncertainty risks "strike suits by content owners who have the financial resources to withstand lengthy and expensive litigation." The lesson is that the mere threat of litigation is often sufficient for market incumbents to wield power over new entrants.

2. Copyright's digital rights management policies hinder innovation.

Amanda Reid, (Assistant Professor at the University of North Carolina at Chapel Hill), COPYRIGHT POLICY AS CATALYST AND BARRIER TO INNOVATION AND FREE EXPRESSION, 2019, Retrieved June 2, 2019, Retrieved June 2, 2024 from https://scholarship.law.edu/cgi/viewcontent.cgi?article=3485&context=lawreview

By giving so much power to incumbent forces, copyright is not optimized to foster and spur innovation. Copyright's digital rights management (DRM) policies, for example, have hindered innovation. DRM restrictions have dampened the opportunities to innovate and create complementary markets around copyrighted works. Such policies have slowed innovation and development around DVDs and e-books. These policies undermine the generative qualities of digital media. Users are disabled from tinkering and innovating. Rather than just a passive recipient, users are an underappreciated source of product innovations. Allowing users to adapt and contribute to innovations helps produce better products. This exchange of information and ideas fosters a democratic environment and an empowered user.

M. TECHNOLOGY WILL SPILLOVER TO THE MILITARY SECTOR

1. The military is working toward increased permeability between the civilian and military sectors

Christine Mitchell, (staff writer), IT'S TIME TO ELEVATE ATTENTION ON THE CIVILIAN WORKFORCE, ARMY LEADERS SAY, October 24, 2023, Retrieved June 2, 2024 from https://www.jbsa.mil/News/News/Article/3567363/its-time-to-elevate-attention-on-the-civilian-workforce-army-leaders-say/

Moving forward these leaders not only encourage but expect to see increased permeability across the total force through enhanced flexibility in talent management and career opportunities, and the improved alignment of civilian and military career fields — all with the purpose of elevating the overall quality of personnel. Civilians are known for serving those who serve. They are an integral part of the workforce, supporting Soldiers and ensuring they're equipped and prepared to face any challenge, according to Schaefer. "The Army would not be the Army without you," she said. "A healthy force is a ready force, and if we take care of our people, our people will take care of the nation."

2. Military-civilian integration will cause a spillover from the civilian sector to the military sector.

Christine Mitchell, (staff writer), IT'S TIME TO ELEVATE ATTENTION ON THE CIVILIAN WORKFORCE, ARMY LEADERS SAY, October 24, 2023, Retrieved June 2, 2024 from https://www.jbsa.mil/News/News/Article/3567363/its-time-to-elevate-attention-on-the-civilian-workforce-army-leaders-say/

Speaking about how to acquire and retain a civilian workforce, Mohan said AMC represents the best of military-civilian integration. "In all commands, we have dedicated civilians sitting next to military commanders, which represents the power of the civilian workforce in these commands," he noted. "We need to approach the development of our civilian workforce in the same way we approach the development of our general officer corps." Mohan acknowledged that the Army's plan to modernize does not only apply to facilities, processes and machines, but to people. "Embedded in that strategy is an important part that talks about the people, because understanding every organization is not the same," he said. "We have different generations in our workforce to train, for example, and we have to train everyone to keep pace with our modernized technology." The leaders agreed it's vital that the Army continues equipping civilians with the capabilities and skills to adapt to emerging technologies. Part of that strategy is to increase data literacy across the force.

3. The military is integrating with civilian tech now.

Emily Pollock, (Fish Nelson & Holden Law Firm), THE MILITARY-TECHNOLOGICAL COMPLEX: HOW THE U.S. ARMY WORKS WITH THE CIVILIAN TECH INDUSTRY, Mar. 12, 2019, Retrieved June 2, 2024 from https://www.engineering.com/story/the-military-technological-complex-how-the-us-army-works-with-the-civilian-tech-industry

A multimillion-dollar deal between Microsoft and the U.S. military giving soldiers access to battlefield AR has been extremely controversial. But it's only one of the ways that the military is working with the civilian tech market. The deal is controversial, but it's far from unusual. To gain an advantage in a predicted technological "arms race" with China, the U.S. military has started using its "military-civil fusion" tactic, making direct connections with the civilian tech industry.

4. The U.S. military sector is already integrated with civilian sector tech companies.

Emily Pollock, (Fish Nelson & Holden Law Firm), THE MILITARY-TECHNOLOGICAL COMPLEX: HOW THE U.S. ARMY WORKS WITH THE CIVILIAN TECH INDUSTRY, Mar. 12, 2019, Retrieved June 2, 2024 from https://www.engineering.com/story/the-military-technological-complex-how-the-us-army-works-with-the-civilian-tech-industry

The U.S. military and intelligence departments are already serviced by, if not the best, then certainly the biggest tech companies in the game. Microsoft has been working with the U.S. Army for 30 years. In 2016, it won a major $927 million information technology and consulting contract from the DoD and followed it up with a deal to provide Azure Cloud services to the major U.S. intelligence agencies in 2018. This January, Microsoft was also awarded a $1.76 billion for IT consulting and support services to branches of the DoD. Google was briefly involved with the military's Project Maven, a project that used machine learning to analyze drone imagery taken in combat zones to identify threats and track enemy movements. Amazon Web Services (AWS) is one of the companies that are the most involved in both the military and intelligence agencies. It is the official cloud provider of the CIA, and it works as a computing subcontractor for the DoD. A 2013 cloud computing contract helped the CIA figure out which legacy tech was working, and a 2017 contract provided the intelligence organization with a cloud service to host data at the "secret" clearance level. For many of these companies, the big prize is the contract for the Army's Joint Enterprise Defense Infrastructure (JEDI), an encrypted cloud platform meant to house most of the organization's digital data and build AI algorithms into its processing. Rather than spreading the contract out between multiple contractors, the Pentagon has opted to award the entire contract as a single $10 billion deal. Oracle, Microsoft, IBM and Amazon are some of the largest companies competing for the jackpot (as was Google, before the company pulled out of the running).

5. The military works with civilian tech companies to bolster readiness.

Emily Pollock, (Fish Nelson & Holden Law Firm), THE MILITARY-TECHNOLOGICAL COMPLEX: HOW THE U.S. ARMY WORKS WITH THE CIVILIAN TECH INDUSTRY, Mar. 12, 2019, Retrieved June 2, 2024 from https://www.engineering.com/story/the-military-technological-complex-how-the-us-army-works-with-the-civilian-tech-industry

Dunford's statement hints why the military continues working with civilian tech companies despite conflict: many in the Army think the country's tech has fallen behind China's. President Xi Jinping recently wrote a clause into the constitution mandating that companies operating within China share tech know-how with the government, which is also investing heavily in tech R&D. Many in the military see that as a problem for the U.S.—a sign that the country isn't the only dominant power on the world stage. In a speech at John Hopkins University this January, U.S. Secretary of Defense James Mattis said,), "Our competitive edge has eroded in every domain of warfare, air, land, sea, space and cyberspace, and it is continuing to erode." To gain an advantage in this hypothetical arms race, the DoD is trying to take on what it calls China's "military-civil fusion": working with civilian partners and using civilian methods. And, when big tech companies prove too difficult to work with directly, the department has been creating its own "civilian" projects. Traditionally, the DoD has funneled much of its new technology research through the Defense Advanced Research Projects Agency (DARPA). Dating back to 1957, the organization says that it "works within an innovation ecosystem that includes academic, corporate and governmental partners, with a constant focus on the Nation's military Services." In practice, the department hires "program managers" from outside of the military to oversee its projects and gives them a very high budget for projects they can pitch convincingly. Right now, DARPA is planning to invest $2 billion in creating more advanced and flexible AI for military projects over the next five years.

N. IMPACTS: CHINA: STRONG TECHNOLOGY NECESSARY TO STOP NUCLEAR WAR WITH CHINA

General Mark A. Milley, (Former Chief of Staff of the U.S. Army), STRATEGIC INFLECTION POINT: THE MOST HISTORICALLY SIGNIFICANT AND FUNDAMENTAL CHANGE IN THE CHARACTER OF WAR IS HAPPENING NOW—WHILE THE FUTURE IS CLOUDED IN MIST AND UNCERTAINTY, July 2023, Retrieved June 2, 2024 from https://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-110/Article/article/3447159/strategic-inflection-point-the-most-historically-significant-and-fundamental-ch/

The global geopolitical situation has also changed fundamentally. During the Cold War, there were two competing superpowers. After the fall of the Berlin Wall, there was a brief so-called unipolar moment. Now, it is clear we are in a multipolar world with at least three Great Powers—the United States, China, and Russia—with other countries rapidly emerging as regional and potential global Great Powers. We can say with reasonable certainty the future will be increasingly complex. Additionally, the rules-based international order established 80 years ago is currently under tremendous strain. The United States now faces two nuclear armed powers. Therefore, we must do everything in our power to deter conflict. We may be in competition and confrontation, but we are not yet in conflict. The 2022 National Security Strategy (NSS) identifies the People's Republic of China (PRC) as "America's most consequential geopolitical challenge" and its "pacing challenge." More specifically, the National Defense Strategy (NDS) states that the PRC is a revisionist power that employs state-controlled forces, cyber and space operations, and economic coercion against the United States and its allies and partners. In 2018, it was reported that China's President Xi Jinping stated to the 13th National People's Congress in Beijing, "We are resolved to fight the bloody battle against our enemies . . . with a strong determination to take our place in the world." China seeks to fundamentally revise the system while still operating within it.

O. IMPACTS: CLIMATE CHANGE MODULE

1. Innovation is key to fighting climate change.

GHB Intellect, (providing IP technical and business consulting services since 2007), HOW IMPORTANT IS INTELLECTUAL PROPERTY TO THE WORLD ECONOMY? Jan 3, 2022. Retrieved June 1, 2024 from https://www.lexology.com/library/detail.aspx?g=c3784bb8-31ab-4911-b920-78dda20ea429

IP also benefits industries other than pharmaceuticals. For example, innovative agricultural companies are always developing new products to help farmers produce more food. Higher yields and better products can help the hungry around the world, while also reducing the environmental impact of farming methods. Discoveries driven by intellectual property in alternative energy and green technologies will help improve energy security in the future and assist in addressing climate change.

2. Innovation is necessary to create renewable energy technologies.

GHB Intellect, (providing IP technical and business consulting services since 2007), HOW IMPORTANT IS INTELLECTUAL PROPERTY TO THE WORLD ECONOMY? Jan 3, 2022. Retrieved June 1, 2024 from https://www.lexology.com/library/detail.aspx?g=c3784bb8-31ab-4911-b920-78dda20ea429

In fact, the International Renewable Energy Energy Association (IRENA) says, "accelerating the development and deployment of renewable energy technologies (RETs) requires innovation throughout the whole technology life cycle, from basic research to commercialization. The International Renewable Energy Agency (IRENA) has been assessing different instruments that promote RET innovation, focusing in particular on patents, standards, technology transfer, and cooperation in research, development and demonstration. Efficient use of such instruments will benefit RET innovation."

3. The Inflation Reduction act has galvanized climate technology now.

Gerhard Peters, (The American Presidency Project), & John T. Woolley, (The American Presidency Project), ICYMI: "THE GREAT AMERICAN INNOVATION ENGINE IS FIRING AGAIN," May 11, 2024, Retrieved June 2, 2024 from https://www.presidency.ucsb.edu/documents/icymi-the-great-american-innovation-engine-firing-again

However, the federal government's ambitions extend beyond semiconductors. The Inflation Reduction Act, also passed in 2022, is stimulating a significant wave of investment in climate tech. And the Biden administration aims to bolster U.S. strengths in the biotech and quantum sectors, too. It recognises that the U.S. has previously failed to capitalise on its early technological lead in some critical areas — telecommunications infrastructure equipment and batteries, for example — and does not want to repeat that mistake.

P. IMPACTS: DETERRENCE—TECH IS THE KEY TO DETERRENCE

General Mark A. Milley, (Former Chief of Staff of the U.S. Army), STRATEGIC INFLECTION POINT: THE MOST HISTORICALLY SIGNIFICANT AND FUNDAMENTAL CHANGE IN THE CHARACTER OF WAR IS HAPPENING NOW—WHILE THE FUTURE IS CLOUDED IN MIST AND UNCERTAINTY, July 2023, Retrieved June 2, 2024 from https://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-110/Article/article/3447159/strategic-inflection-point-the-most-historically-significant-and-fundamental-ch/

Today, we are witnessing another seismic change in the character of war, largely driven again by technology. The next conflict will be characterized by ubiquitous sensors with mass data collection and processing ability that minimize the opportunity for military forces to hide. Low-cost autonomous platforms, coupled with commercial imagery and behavior tracking data augmented by artificial intelligence (AI) and analysis tools, will accelerate the ability to sense and make sense of the environment. Inexpensive drones, loitering munitions, and precision-guided munitions with increasing speed, range, and accuracy will further reduce the time it takes to close the kill web. Robotics and additive manufacturing will change the way militaries supply and sustain their forces. Pervasive sensors, AI-driven weapon systems, and long-range precision fires will make the fastest platforms seem slow and leave the most hidden formations exposed.

Q. IMPACTS: DEVELOPING COUNTRIES: COPYRIGHTS HINDER DEVELOPMENT IN DEVELOPING COUNTRIES.

Pujith Gayon, (author, lawyer and a columnist), INTELLECTUAL PROPERTY RIGHTS: BALANCING INNOVATION, ACCESSIBILITY, AND ETHICAL CONCERNS, Apr 30, 2023, Retrieved June 2, 2024 from https://www.PujithGayon.linkedin.com/pulse/intellectual-property-rights-balancing-innovation-ethical-gayon

Moreover, IPR can limit accessibility to essential goods and services, especially in developing countries. Patents can create a barrier to entry, making drugs and medical treatments prohibitively expensive for many people. This can be particularly devastating in developing countries, where access to healthcare and medication is already limited. The same can be said for copyrighted materials, such as textbooks, scientific papers, and educational resources. High licensing fees and strict copyright laws can make it difficult for educators and students to access necessary materials, limiting educational opportunities and hindering progress.

R. IMPACTS: ECONOMIC GROWTH

1. Innovation is key to economic growth.

Jens Martin Skibsted, (Global Partner at Manyone and a multiple award-winning designer and entrepreneur), IP LAWS ARE HOLDING BACK INNOVATION, Mar 6, 2023, Retrieved June 2, 2024 from https://www.forbes.com/sites/forbestechcouncil/2023/03/06/ip-laws-are-holding-back-innovation/?sh=c05acc03715a

The dynamics of our rapidly evolving global community demand that we reframe IP laws to spur innovation considering the fact that innovation is critical to human progress, not just because it is key to long-term economic growth and prosperity but also because it's our only way to respond to a constantly evolving world.

2. Innovation drives economic progress.

Amanda Reid, (Assistant Professor at the University of North Carolina at Chapel Hill), COPYRIGHT POLICY AS CATALYST AND BARRIER TO INNOVATION AND FREE EXPRESSION, 2019, Retrieved June 2, 2019, Retrieved June 2, 2024 from https://scholarship.law.edu/cgi/viewcontent.cgi?article=3485&context=lawreview

Copyright barriers can prevent creative destruction and hamper the cycle of progress. Incumbents have a strong, selfish instinct to bury disruptive innovations. But to further economic growth, the creative destruction cycle must continue. Economic growth's pains and gains are inextricable. Innovation is the process that drives competition and economic growth. Some innovations involve dramatic improvements whereas others are merely incremental. Innovation often occurs in fits and starts. Innovation, like evolution, can be messy and nonlinear. The current digital media successes, for example, have resulted from several rounds of iterative innovations, not just a single innovative advance.

3. Innovation is key to the economy.

Amanda Reid, (Assistant Professor at the University of North Carolina at Chapel Hill), COPYRIGHT POLICY AS CATALYST AND BARRIER TO INNOVATION AND FREE EXPRESSION, 2019, Retrieved June 2, 2019, Retrieved June 2, 2024 from https://scholarship.law.edu/cgi/viewcontent.cgi?article=3485&context=lawreview

Newcomers are often responsible for cutting-edge, economic advances. Entrepreneurs and start-ups are key players in the creative destruction process that fosters innovation. In fact, scholars note that "[f]rom 1980 [to] 2005, firms less than five years old accounted for nearly all net job growth in the country, and in 2007 alone, these same young firms accounted for nearly twothirds of job creation." And these newcomers are more likely to produce disruptive technologies. Such technological progress has been the centerpiece of domestic economic growth. According to the Obama White House, "from 1948 [to] 2012 over half of the total increase in U.S. productivity growth, a key driver of economic growth, came from innovation and technological change."

S. IMPACTS: LEADERSHIP

1. Military readiness is key to U.S. leadership.

Dakota Wood, (Senior Research Fellow, Defense Programs), IN 2024, THE U.S. MILITARY IS WEAK…AND THAT SHOULD SCARE YOU, Feb. 15, 2024, Retrieved June 2, 2024 from https://www.heritage.org/defense/commentary/2024-the-us-military-weakand-should-scare-you

What they have in common is the objective of displacing the United States as a global power and reducing America's ability to shape the future in ways that benefit Americans. To compete on a global stage against a multitude of adversaries who collaborate against the U.S., at least opportunistically, the United States must possess military power commensurate with the realities of the current world, not one that is imagined years from now nor held in fond memory.

2. Allies follow American leadership.

C. Todd Lopez, (defense writer), AUSTIN: IN TROUBLING TIMES, WORLD NEEDS U.S. LEADERSHIP, Dec. 2, 2023, Retrieved June 2, 2024 from https://www.defense.gov/News/News-Stories/Article/Article/3604791/austin-in-troubling-times-world-needs-us-leadership/

Since the end of World War II, Austin said, the world has adhered to a rules-based international order, developed with U.S. leadership, that has provided not just the United States, but the entire world an unprecedented period of peace and prosperity. Neither that rules-based order nor U.S. leadership must be allowed to falter, he said. "The world built by American leadership can only be maintained by American leadership," Austin said. "American leadership rallies our allies and partners to uphold our shared security. And it inspires ordinary people around the world to work together toward a brighter future."

3. Failure of U.S. leadership will cause enemies to be emboldened.

C. Todd Lopez, (defense writer), AUSTIN: IN TROUBLING TIMES, WORLD NEEDS U.S. LEADERSHIP, Dec. 2, 2023, Retrieved June 2, 2024 from https://www.defense.gov/News/News-Stories/Article/Article/3604791/austin-in-troubling-times-world-needs-us-leadership/

Were the U.S. to shirk its leadership role, he said, America's enemies and the enemies of its allies would only be emboldened. And that failure to lead would put the security and wellbeing of the United States and its allies at risk. "The cost of abdication has always far outweighed the cost of leadership," Austin said. "The world will only become more dangerous if tyrants and terrorists believe that they can get away with wholesale aggression and mass slaughter. America will only become less secure if dictators believe they can wipe a democracy off the map. And the United States will only pay a higher price if autocrats and zealots believe that they can force free people to live in fear." The U.S. has not shied away from its leadership role, Austin said, and will not. Instead, he said the U.S. has responded where crises have occurred—such as Ukraine and Israel—and has also continued to strengthen partnerships globally as a way to help future crises from developing.

T. IMPACTS: MILITARY POWER SOLVES CONFLICT

1. American military dominance deters conflict.

General Mark A. Milley, (Former Chief of Staff of the U.S. Army), STRATEGIC INFLECTION POINT: THE MOST HISTORICALLY SIGNIFICANT AND FUNDAMENTAL CHANGE IN THE CHARACTER OF WAR IS HAPPENING NOW—WHILE THE FUTURE IS CLOUDED IN MIST AND UNCERTAINTY, July 2023, Retrieved June 2, 2024 from https://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-110/Article/article/3447159/strategic-inflection-point-the-most-historically-significant-and-fundamental-ch/

Geostrategic competition and rapidly advancing technology are driving fundamental changes to the character of war. Our opportunity to ensure that we maintain an enduring competitive advantage is fleeting. We must modernize the Joint Force to deter our adversaries, defend the United States, ensure future military advantage, and, if necessary, prevail in conflict. The Joint Force has taken the first step by developing and publishing the Joint Warfighting Concept (JWC) and updating Joint Publication 1, Doctrine for the Armed Forces of the United States. The JWC is a joint, combined vision for how the U.S. military will operate across all domains. The next step is to create a leadership structure that turns concepts into capabilities. The Joint Force must make fundamental changes now to win the next war and, by doing so, we will deter the war from happening in the first place.

2. Readiness stops great power war.

General Mark A. Milley, (Former Chief of Staff of the U.S. Army), STRATEGIC INFLECTION POINT: THE MOST HISTORICALLY SIGNIFICANT AND FUNDAMENTAL CHANGE IN THE CHARACTER OF WAR IS HAPPENING NOW—WHILE THE FUTURE IS CLOUDED IN MIST AND UNCERTAINTY, July 2023, Retrieved June 2, 2024 from https://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-110/Article/article/3447159/strategic-inflection-point-the-most-historically-significant-and-fundamental-ch/

The most important thing we can do is to deter Great Power war from happening in the first place. We achieve deterrence by maintaining a highly ready, combat capable force in the present and modernizing the U.S. military to sustain dominant warfighting advantage in a future operating environment. When rational adversaries view the United States as dominant, they realize they cannot and should not engage in conflict with the United States. Implementing a joint warfighting concept is the best preparatory action to deter adversarial actors from military aggression and preserve peace.

3. Military needs both readiness and modernization.

General Mark A. Milley, (Former Chief of Staff of the U.S. Army), STRATEGIC INFLECTION POINT: THE MOST HISTORICALLY SIGNIFICANT AND FUNDAMENTAL CHANGE IN THE CHARACTER OF WAR IS HAPPENING NOW—WHILE THE FUTURE IS CLOUDED IN MIST AND UNCERTAINTY, July 2023, Retrieved June 2, 2024 from https://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-110/Article/article/3447159/strategic-inflection-point-the-most-historically-significant-and-fundamental-ch/

The JWC and JP 1 have established a path to modernization. But these alone will not achieve the fundamental changes required to ensure the Joint Force outpaces any adversary and continues to deter aggression. In addition to these reforms, we need a future-focused organization that can drive change. In the 2022 NMS, we highlighted the need to balance both modernizing the Joint Force for future warfare and campaigning today in an era of Great Power competition. The Joint Force can strike this balance by using strategic discipline—the ruthless prioritization of operations, activities, and investments to continuously calibrate Joint Force weight of effort between campaigning now and rapidly building warfighting advantage for the future. It could seem like a struggle to balance “fight tonight” against “prepare to win tomorrow,” but it is a false choice between current readiness and future modernization—we must do both with the assistance of a Joint Futures organization.

4. Innovative technology will be shared with the military.

General Mark A. Milley, (Former Chief of Staff of the U.S. Army), STRATEGIC INFLECTION POINT: THE MOST HISTORICALLY SIGNIFICANT AND FUNDAMENTAL CHANGE IN THE CHARACTER OF WAR IS HAPPENING NOW—WHILE THE FUTURE IS CLOUDED IN MIST AND UNCERTAINTY, July 2023, Retrieved June 2, 2024 from https://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-110/Article/article/3447159/strategic-inflection-point-the-most-historically-significant-and-fundamental-ch/

Army Futures Command (AFC) is proof that a future-focused organization can spark the changes required. The AFC model can be replicated at the joint level. It achieved undeniable momentum in delivering advanced capabilities to the warfighter faster. The Army established a four-star operational commander as an authoritative senior advocate for the future—combining the characterization of the future operating environment, concept development, experimentation, and requirements generation with clear priorities and direction. Unlike decades of failed programs like Comanche, Crusader, and Future Combat Systems, the Army is now putting the newest and most innovative technology in the hands of Soldiers. Like AFC, a Joint Futures organization would have the potential to align critical force design and development functions, integrate concepts with experimentation, and synchronize users to accelerate modernization and close capability gaps.

5. Must have the military capacity to deter conflict

Dakota Wood, (Senior Research Fellow, Defense Programs), IN 2024, THE U.S. MILITARY IS WEAK…AND THAT SHOULD SCARE YOU, Feb. 15, 2024, Retrieved June 2, 2024 from https://www.heritage.org/defense/commentary/2024-the-us-military-weakand-should-scare-you

Yes, many people will say the purpose of a strong military is to deter war, but deterrence derives from the belief of the enemy that they would be defeated in battle. So if our military is at great risk of not being able to win … well, it doesn't have much deterrent value. Our potential enemies can see this; the American public, not so much.

U. ANSWERS TO: INVENTORS ARE INCENTIVIZED BY IP RIGHTS: INVENTORS ARE NOT INCENTIVIZED BY IP RIGHTS.

Jessica Silbey, (prof of law at Boston University), HOW COPYRIGHTS, PATENTS, AND TRADEMARKS MAY STIFLE CREATIVITY AND PROGRESS), Aug. 16, 2022, Retrieved June 2, 2024, https://www.bu.edu/articles/2022/how-copyrights-patents-trademarks-may-stifle-creativity-and-progress/

For her 2015 book, The Eureka Myth: Creators, Innovators, and Everyday Intellectual Property (Stanford University Press), Silbey interviewed dozens of authors, artists, and inventors about the effect of IP law on their work. "What my first book showed—and many other later independent studies confirmed—is that most people aren't incentivized by IP rights," she says. "IP rights don't function like a carrot. They're just one small piece of a much larger puzzle of how creators earn to sustain their lives."

V. IMPACTS: U.S. TECH LEADERSHIP HIGH NOW

J.H. Cullum Clark, (J.H. Cullum Clark Director, Bush Institute-SMU Economic Growth Initiative), Spring 2024, Retrieved June 2, 2024 from https://www.bushcenter.org/catalyst/why-us-leadership-still-matters/how-to-remain-the-innovation-nation

U.S. technological dominance is also the foundation of U.S. geopolitical leadership, both because it has generated a consistent edge in defense technologies like unmanned military aircraft, quantum cryptography, and antimissile systems, and because it ensures the prosperity on which the United States' ability to project power depends.

W. ANSWERS TO: PLAN HELPS R&D: THE INTRODUCTION OF PATENTS ONLY HAS A MINOR IMPACT ON R&D BEHAVIOR.

Julia Brüggemann, (Phd) Georgetown University, 2015, INTELLECTUAL PROPERTY RIGHTS HINDER SEQUENTIAL INNOVATION: EXPERIMENTAL EVIDENCE https://www.econstor.eu/bitstream/10419/106128/1/814347134.pdf

Dimmig and Erlei (2013) use a similar task and show that the introduction of patenting has only a minor impact on R&D behavior. Ederer and Manso (2013) use a search task in a multidimensional space. They find that a combination of tolerance for early failure and rewards for long-term success are most effective in fostering innovation. Buchanan and Wilson (2014) implement a search task that consists of creating colors with the aim of finding the 'color of the day', randomly set by the experimenter, and introduce trade. In their IP treatment the creation of non-rivalrous knowledge goods is highest; however, prices increase as substantial monopoly profits are acquired by the innovators. In the absence of IP, Buchanan and Wilson still identify the incentive to create non-rivalrous knowledge goods, but IP theft as well. They also implement chat communication among subjects to enable bargaining and cooperation. By choosing to implement search tasks, the aforementioned experiments abstract away from the crucial features of creativity and individual skills. In some of the designs, finding the 'right' combination is just a matter of luck and enough trials. Innovations are usually not created through such a process. A smaller set of papers choose instead to implement creative tasks. Buccafusco and Sprigman (2010) ask their subjects to write poems and subsequently implement a market for the poems. They find that the preferences of IP creators, owners, and purchasers are unstable and dependent on the initial distribution of IP rights, and that there is a substantial valuation asymmetry between creators and purchasers of IP, similar to the well-known endowment effect. Such designs capture the creativity core of innovations better, but forfeit control – it is impossible to accurately assess which poem is 'better' or 'more creative' in the set.

SINO-U.S. RELATIONS DISADVANTAGE

Thesis: The thesis of this disadvantage is that the plan would be perceived by China as a way to advantage U.S. businesses over Chinese businesses. Granting property rights domestically would hurt China, because they would not be getting the advantages of the new protections that must be domestic only according to the topic. China would view the plan as a hidden trade barrier designed to help the United States against China. This would fracture the world's two largest economies and lead to a devastating U.S.-China war.

A. U.S.-CHINA RELATIONS ARE STABILIZING NOW.

Brad Glosserman, (deputy director of and visiting professor at the Tama University Center for Rule Making Strategies in Japan), U.S.-CHINA TENSIONS RISE AS THE TIDES BEGIN SHIFTING, Apr. 30, 2024, Retrieved May 30, 2024 from https://www.japantimes.co.jp/ commentary/2024/04/30/world/china-tensions-rising/

Blinken's visit to China sought to build on the summit between President Biden and President Xi that was held in San Francisco last year. Both sides came away from that meeting claiming that a floor had been set for the relationship, guardrails had been strengthened and that bilateral relations would be stabilized as a result. Chinese experts I've encountered have been eager to seize the moment and resume conversations to try to guarantee that future. There was almost a sense of urgency.

B. DOMESTIC INTELLECTUAL PROPERTY PROTECTIONS BY THE UNITED STATES WILL BE VIEWED AS A TRADE BARRIER MEANT TO ENHANCE U.S. PRODUCTIVITY OVER RIVAL NATIONS.

Wei Li, (Zhejiang University of Finance & Economics, Hangzhou, China), & Yichao Chen (Zhejiang University of Finance & Economics, Hangzhou, China), A STUDY OF THE INFLUENCE OF INTELLECTUAL PROPERTY ON CHINA–U.S. TRADE RELATIONS, Apr 1, 2020, Retrieved May 29, 2024 from https://journals.sagepub.com/doi/full/10.1177/ 2158244020915899

Intellectual property is the right generated from both creative achievements and marks made by industry and commerce according to the law. Protecting intellectual property indicates a critical link between development and innovation. Since the 1990s, the research on intellectual property protection has made some preliminary achievements. All relevant studies have attached importance to two major aspects. One is how to make intellectual property protection indexes complete and practical. The other is related to how the degree of intellectual property protection influences technological innovation and economic growth. Regarding the relationship among intellectual property protection, the intellectual property trade barrier, and China–U.S. trade, a relevant literature review can be completed from three aspects: the status situation of intellectual property protection in China, the influence of the intellectual property trade barrier established by America, and the relationship between intellectual property protection and foreign trade.

C. INTELLECTUAL PROPERTY PROTECTIONS WILL LEAD TO TRADE INVESTIGATIONS AND ADDITIONAL TARIFFS BY THE UNITED STATES AGAINST CHINA—THIS WAS WHAT HAPPENED IN THE 2018 TRADE WAR WITH CHINA.

Wei Li, (Zhejiang University of Finance & Economics, Hangzhou, China), & Yichao Chen (Zhejiang University of Finance & Economics, Hangzhou, China), A STUDY OF THE INFLUENCE OF INTELLECTUAL PROPERTY ON CHINA–U.S. TRADE RELATIONS, Apr 1, 2020, Retrieved May 29, 2024 from https://journals.sagepub.com/doi/full/10.1177/ 2158244020915899

In Figure 2, an increase-decrease-increase fluctuation appears from Orders 1 to 4 when DLNBT responds to DLNIPPS and, subsequent to which, it remains stationary. The reason is that because the strength of Chinese intellectual property protection increases in the short term, China may exert certain technological restrictions over imports from America or possess certain technological superiorities in exports to America, such that America inevitably takes measures to safeguard imports and exports in the long run to prevent the occurrence of dumping, among others. The response of DLNBT to DIV slightly declines in Orders 1 to 2 and then tends to be stationary. Such a phenomenon illustrates that the intellectual property trade barrier established by America has a direct influence on China–U.S. trade. In view of the American economic strength, it has the ability to control the level of China–U.S. trade to a certain degree through trade investigations and additional tariffs. Furthermore, such a conclusion conforms to the process of the 2018 China–U.S. trade war.

D. INTELLECTUAL PROPERTY RIGHTS ARE AT THE HEART OF THE U.S. ECONOMIC CONFLICT WITH CHINA.

Shaomin Li, (Department of Management, Strome College of Business, Old Dominion University) & Ilan Alon, (Department of Management, School of Business & Law, University of Agder), CHINA'S INTELLECTUAL PROPERTY RIGHTS PROVOCATION: A POLITICAL ECONOMY VIEW, Sept. 3, 2019, Retrieved May 30, 2024 from https://link.springer. com/article/10.1057/s42214-019-00032-x

It is well recognized that intellectual property rights (IPR) violations are at the heart of the economic conflict with China. Little agreement, however, exists about the origin and solutions for this provocation. Broadly speaking, two prescriptions have been proposed: the natural evolutionary and the rule of law views. While both have merits and add to our understanding, they do not go far enough to address the more fundamental IPR policy issue: China has benefited from a rule of law overseas and a rule through law at home, manufacturing unfair advantage to its firms, many of which are owned and/or influenced by the government. While recognizing China's recent effort in improving IPR protection, we point out the intrinsic contradiction in the political economy of China between maintaining the one-party rule, on the one hand, and protecting IPR by an independent court, on the other. Understanding this tension in the application of IPR law can help the international community search for more effective policy options.

E. U.S.-CHINESE COOPERATION IS NECESSARY TO SOLVE MULTIPLE EXISTENTIAL THREATS TO THE WORLD.

Graham T. Allison et al, (Douglas Dillon Professor of Government - Harvard University), IS THE U.S.-CHINA RELATIONSHIP THE MOST CONSEQUENTIAL RELATIONSHIP FOR AMERICA IN THE WORLD? Feb. 26, 2024. Retrieved May 30, 2024 from https://www.brookings.edu/articles/is-the-us-china-relationship-the-most-consequential-relationship-for-america-in-the-world/

If accidents, incidents, or third-party provocations drag the rivals into war (as the assassination of an archduke did in 1914), both could be erased from the map. President Ronald Reagan's incandescent lesson—"a nuclear war cannot be won and therefore must never be fought"—is, thus, a foundational truth in U.S.-China relations. In an analog that has been called Climate MAD, on current trajectories, unconstrained Chinese or American greenhouse gas emissions could so disrupt the enclosed biosphere in which we both live that neither of us could survive. In the financial arena, the United States and China are now so deeply entangled that a financial crisis in one could lead to a global depression for all. When, in 2008, Wall Street risk-taking caused a great financial crisis in the United States, only joint stimuli by both China and the United States prevented that from spiraling into a global depression. Cooperation is also required to contain transnational threats—the proliferation of nuclear weapons, pandemics, and global terrorism—sustain the benefits both countries' citizens expect and demand from trade, and to advance science, technology, and knowledge.

II. THE AFFIRMATIVE ANSWERS TO THE DISADVANTAGE ARE INADEQUATE.

A. UNIQUENESS:

1. U.S.-China Relations Improving Now

Richard Weitz, (Senior Fellow, Hudson Institute), BLINKEN'S TRIP HEIGHTENS U.S. DEBATE ON FUTURE CHINA POLICY, May 17, 2024, Retrieved May 30, 2024 from https://www.chinausfocus.com/foreign-policy/blinkens-trip-heightens-us-debate-on-future-china-policy

Despite these tensions, Blinken justified the recent surge in high-level official exchanges with China, which have included a half-dozen U.S. cabinet members and other senior policymakers meeting their Chinese counterparts. Following a lengthy discussion with PRC Foreign Minister Wang Yi, Blinken told the assembled media that, "There's no substitute…for face-to-face diplomacy in order to try and move forward, but also to make sure that we're as clear as possible about the areas where we have differences, at the very least, to avoid misunderstandings, to avoid miscalculations." In addition to these civilian official exchanges, the Biden administration has sought to expand military-to-military and peoples-to-peoples ties among scholars, students, and businesses. While speaking at New York University Shanghai, Blinken poignantly lamented how few U.S. students now study in China.

2. China wants to expand cooperation over intellectual property in the present system.

Bernard Orr, (Writer and editor for corporate news), & Ethan Wang, (writer with Reuters), U.S. OFFICIAL SAYS IPR INFRINGEMENT STILL MAIN CONCERN IN CHINA, Apr. 16, 2024, Retrieved May 29, 2024 from https://www.reuters.com/world/us/us-official-says-ipr-infringement-still-main-concern-china-2024-04-16/

Ding said China wants to expand practical cooperation with the United States on intellectual property rights, address each other's concerns, and foster a fair, just and non-discriminatory business environment.

3. U.S. trade with China is growing enormously.

Anshu Siripurapu, (covers economics, energy, and geopolitics, and helps edit the Daily News Brief) & Noah Berman, THE CONTENTIOUS U.S.-CHINA TRADE RELATIONSHIP, May 14, 2024, Retrieved May 30, 2024 from https://www.cfr.org/backgrounder/contentious-us-china-trade-relationship

U.S. trade with China has grown enormously in recent decades and is crucial for both countries. Today, China is one of the largest export markets for U.S. goods and services, and the United States is the top export market for China. This trade has brought lower prices to U.S. consumers and higher profits for American corporations, but it has also come with costs.

B. LINKS: GENERAL IP LINKS

1. Intellectual Property protection undermines China-U.S. trade relations.

Wei Li, (Zhejiang University of Finance & Economics, Hangzhou, China), & Yichao Chen (Zhejiang University of Finance & Economics, Hangzhou, China), A STUDY OF THE INFLUENCE OF INTELLECTUAL PROPERTY ON CHINA–U.S. TRADE RELATIONS, Apr 1, 2020, Retrieved May 29, 2024 from https://journals.sagepub.com/doi/full/10.1177/ 2158244020915899

Recent investigations into China–U.S. trade relations have revealed that intellectual property plays an increasingly important role. A vector auto-regression model (VAR model) was established in this study to depict the relation among intellectual property protection, intellectual property trade barriers, and China–U.S. trade. Furthermore, Granger causality was utilized to formulate how intellectual property affects China–U.S. trade relations. As demonstrated by the relevant results, on one hand, intellectual property protection influences China–U.S. trade relations through the China–U.S. trade structure. On the other hand, China–U.S. trade relations may act on the intellectual property trade barrier for the same reason.

2. Because China views intellectual property to be a core competitiveness concern, they will view the plan as an attempt to lock in American superiority at the expense of China.

Wei Li, (Zhejiang University of Finance & Economics, Hangzhou, China), & Yichao Chen (Zhejiang University of Finance & Economics, Hangzhou, China), A STUDY OF THE INFLUENCE OF INTELLECTUAL PROPERTY ON CHINA–U.S. TRADE RELATIONS, Apr 1, 2020, Retrieved May 29, 2024 from https://journals.sagepub.com/doi/full/10.1177/ 2158244020915899

The China–U.S. trade structure may result in the fact that the strength of Chinese intellectual property protection is the Granger cause of the China–U.S. trade balance. On one hand, Chinese enterprises lack core competitiveness. Enhancing Chinese intellectual property protection is beneficial to China's improvement in enterprise innovation ability to increase corporate exports. By probing the enterprise data released by the World Bank, Yin Zhifeng et al. (2013) concluded that enhancing intellectual property protection strength can elevate the enterprise innovation output of the host country by increasing enterprise R&D investments. In addition, Li Chuntao et al. (2015) conducted a survey of the micro-data of transnational companies. Based on his findings, favorable intellectual property protection can accelerate corporate investments in innovation. In contrast, America is unwilling to expand China-oriented high-tech products because of trade control and a blockade on techniques. Intellectual property is viewed as the strategic resource and core competitiveness in the ascendant of America, a great power in the areas of the economy, science, and technology. Therefore, effective intellectual property protection becomes the key to guaranteeing economic and technological progress. For this reason, China maintains its technology trade deficit with America and such a deficit shows an annually progressive increasing tendency during the past 10 years. In December 2010, American exports to China reached U.S.$10.12 billion, with technology imports of U.S.$5.75 billion, representing only 56.8% of this total. As a leading technology country, America exports new and hi-tech products to China; however, the proportion of such products was only 22.4% of the 2010 global total. Apparently, the United States does not have the most technology exports to China, which contradicts its leading position in technology. To break through American technical restrictions, China needs to improve its self-innovation capability, which depends on the steady strengthening of Chinese intellectual property protection.

3. China will view the plan as an effort by the United States to gain in overall intellectual protections.

Victoria Huang & Mark Cohen (an intern with the Center for Innovation, Trade, and Strategy at National Bureau of Asian Research) & Mark Cohen, (heads the Asia IP Project at the Berkeley Center for Law and Technology at. Berkeley Law School), U.S.-CHINA INTELLECTUAL PROPERTY ISSUES IN A POST-PHASE-ONE ERA, Jan. 29, 2022, Retrieved May 29, 2024 from https://www.nbr.org/publication/u-s-china-intellectual-property-issues-in-a-post-phase-one-era/

Certainly, there have been improvements in Chinese laws. In some areas, such as trade secret protection and platform liability for IP infringement, the phase-one agreement helps place China ahead of the United States in terms of overall legislation. In other areas, such as the protection of financial technology, software, or genetic inventions, China has already surpassed the United States due to the weakening of the U.S. patent regime in recent years. For example, Chinese courts are at the forefront of using molecular markers to distinguish different varieties of plants—an area that was not under consideration in phase one. China's IP regime is complex. It responds to external pressure, but increasingly it is most responsive to its own demands to innovate and compete, particularly in emerging technological areas.

4. The U.S. effort to protect Intellectual Property will be framed as an effort to gain power in the global economy.

Manoj Harjani, (Research Fellow and Coordinator in the Military Transformations Programme (MTP) within the Institute of Defence and Strategic Studies), & Hannah Elyse Sworn, (Doctoral Student in political science @ George Washington University, U.S.–CHINA ECONOMIC COMPETITION RESTS ON INTELLECTUAL PROPERTY, June 29, 2022. Retrieved May 29, 2024 from https://eastasiaforum.org/2022/06/29/us-china-economic-competition-rests-on-intellectual-property/

IP has become integral to economic power. The United States' near-monopoly over high-quality IP ownership has allowed its firms to capture a disproportionate share of value added globally. U.S. efforts to produce, regulate and protect IP can be framed as seeking to protect its power to shape the global economy. China's leadership has doggedly pursued its own innovation pathway to maintain economic growth and avoid the middle-income trap by moving up the value chain. But regardless of Beijing's intentions, this threatens U.S. economic power conferred to it through greater IP ownership.

C. LINKS: BOTH DEMOCRATS AND REPUBLICANS WILL SUPPORT USING THE PLAN TO BASH CHINA.

Ian Bremmer, (President and Founder of GZERO Media.), WHY THE U.S.-CHINA RELATIONSHIP IS MORE STABLE THAN YOU MIGHT THINK, Apr. 29, 2024, Retrieved May 28, 2024 from https://www.gzeromedia.com/quick-take/why-the-us-china-relationship-is-more-stable-than-you-might-think

Having said all of that, this is a relationship that is becoming more challenging to manage. And that's true because in the United States, whether you're Democrat or Republican, one of the very few things you can agree on in foreign policy is that there is a benefit in going after China. So the policy from the U.S. is not just about Biden making decisions himself, but it's also about members of Congress. It's about governors. It's about the media. All of whom are taking their own shots. And they're not coordinated. Where from China, if Xi Jinping wants it, everyone basically rose in the same direction. Now, there are lots of American corporations and banks that are sending their CEOs, making trips with China right now. And there's much more people to people engagement between the two countries, something that Chinese officials are strongly focused on.

D. INTERNAL LINKS: INTELLECTUAL PROPERTY IS A SORE POINT IN RELATIONS BETWEEN THE U.S. & CHINA.

Manoj Harjani, (Research Fellow and Coordinator in the Military Transformations Programme (MTP) within the Institute of Defence and Strategic Studies), & Hannah Elyse Sworn, (Doctoral Student in political science @ George Washington University, U.S.–CHINA ECONOMIC COMPETITION RESTS ON INTELLECTUAL PROPERTY, June 29, 2022. Retrieved May 29, 2024 from https://eastasiaforum.org/2022/06/29/us-china-economic-competition-rests-on-intellectual-property/

Intellectual property (IP) has long been a sore point in relations between Washington and Beijing. U.S. officials have repeatedly targeted China for widespread counterfeiting since its economic 'opening up' in the late 1970s. But after enduring a punishing series of legal reforms to join the World Trade Organization in 2001, the Chinese government is still under fire for weak enforcement, forced technology transfers and state-sponsored IP theft. Now China's growing ability to produce IP indigenously is driving the evolution of U.S.–China economic relations.

E. PERCEPTIONS OF UNDERMINING RELATIONSHIP WITH CHINA TRIGGER THE LINK

1. Perceptions of undermining U.S.-Chinese relations undermine the foundation of the relationship.

Xie Feng, (Chinese diplomat who has been serving as the 12th Ambassador of China to the United States), INJECT MORE WARMTH INTO CHINA-U.S. RELATIONS WITH PEOPLES' FRIENDSHIP, May 19, 2024, Retrieved May 30, 2024 from http://us.china-embassy.gov.cn/eng/dshd/202405/t20240519_11307014.htm

Currently, China-U.S. relations are still facing serious challenges. We need to forge a closer bond between our peoples and open our hearts to each other, so as to inject more warmth and impetus into this relationship. It is important to develop a right perception toward each other, and be friends rather than rivals. If the China-U.S. relationship is a tree, then how we perceive each other is the root. When the root is strong, the tree will yield sweet fruits. But if the root is improperly planted, the fruits will be sour.?

2. Plan Will Be Used to Suppress Other Countries: The United States will use the plan as a means to suppress other countries in given sectors in order to maintain the leading position of the U.S..

Wei Li, (Zhejiang University of Finance & Economics, Hangzhou, China), & Yichao Chen (Zhejiang University of Finance & Economics, Hangzhou, China), A STUDY OF THE INFLUENCE OF INTELLECTUAL PROPERTY ON CHINA–U.S. TRADE RELATIONS, Apr 1, 2020, Retrieved May 29, 2024 from https://journals.sagepub.com/doi/full/10.1177/2158244020915899

Brander et al. (2017) presented that China should establish legality by fulfilling its current commitment to international intellectual property to play a leading role in its reform. For China, the core competitiveness of Chinese products should be improved by enhancing the country's product innovation capability, developing core technologies, and forging products "Made in China" into those "Created in China." In addition, legislative protection and law enforcement for intellectual property should be perfected to address and safeguard against trade attacks, such as the Section 337 Investigation of America. Regarding America, building an intellectual property trade barrier is indeed a territory-protecting approach from commanding heights of the world. The presently leading global position of America determines that it should impose certain suppressions over other countries in certain sectors while seeking development. In addition, both countries' intellectual property relationship and its negative influence on China–U.S. trade should be taken into reasonable consideration at the time that the intellectual property trade barrier is built to pursue joint development for mutual benefit in a win–win situation.

F. U.S. WILL PRESSURE CHINA

1. Intensification of intellectual property protections by the United States will suppress Chinese products and enterprises.

Wei Li, (Zhejiang University of Finance & Economics, Hangzhou, China), & Yichao Chen (Zhejiang University of Finance & Economics, Hangzhou, China), A STUDY OF THE INFLUENCE OF INTELLECTUAL PROPERTY ON CHINA–U.S. TRADE RELATIONS, Apr 1, 2020, Retrieved May 29, 2024 from https://journals.sagepub.com/doi/full/10.1177/ 2158244020915899

Regarding research on the current situation of intellectual property trade barriers built by America, the details of trade investigations carried out in the country are discussed in most cases. He Xingqiang (2008) analyzed the reasons why America has built an intellectual property trade barrier since 2004 and then proposed the viewpoint that China–U.S. trade disputes occur as driven by intellectual property business groups in America under the background in which the American government intensifies intellectual property protection. Liao Li (2015) deemed that law enforcement efforts in intellectual property continue to increase unilaterally, bi-literally, and regionally in America. For example, law enforcement criteria for intellectual property stipulated in the Trans-Pacific Partnership Agreement (TPP) are enormously more rigorous than the standards provided in the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). In addition, Cui Riming (2007) systematically summarized the causes of China–U.S. trade friction in moving toward intellectual property protection. He considered that America turn to novel means, such as the Section 337 Investigation, in the circumstance that conventional trade remedy measures such as anti-dumping no longer satisfy the need to suppress products “Made in China.” By virtue of such new means with certain required characteristics, America is able to more effectively suppress Chinese products and enterprises. Moreover, studies by Xu Yuan (2011) found that the intellectual property barrier, with the feature of fierce market aggressiveness, mostly takes form with enterprises as its subjects in new and high-tech fields. Despite non-uniform judging standards, unbalanced settings among various countries and the absence of institutional constraints create a rather solid legal foundation and a higher level of concealment.

2. The U.S. will put pressure on Chinese property infringements.

Wei Li, (Zhejiang University of Finance & Economics, Hangzhou, China), & Yichao Chen (Zhejiang University of Finance & Economics, Hangzhou, China), A STUDY OF THE INFLUENCE OF INTELLECTUAL PROPERTY ON CHINA–U.S. TRADE RELATIONS, Apr 1, 2020, Retrieved May 29, 2024 from https://journals.sagepub.com/doi/full/10.1177/ 2158244020915899

Since 2017, China–U.S. trade relations have been even more strained as the new American government assumed power. Zhengrui (2017) opined that the interdependence between America and China is asymmetric; in line with the current situation, China has more dependence on America, enabling America to gain greater “power” in China–U.S. trade and act as the party that applies pressure when dealing passively with China. On March 22, 2018, the Trump administration declared that U.S.$50 billion in customs duties should be placed on Chinese commodities for intellectual property infringement, together with the implementation of restrictions on investments. Although China robustly opposed, a China–U.S. trade war still occurred. In detail, in 2018, additional tariffs on imported goods were collected for three rounds between both countries.

3. The U.S. will use the plan to undermine China's investments in their technological innovation.

Chris Borges, (Program Manager and Associate Fellow, Geoeconomics Center), INTELLECTUAL PROPERTY RIGHTS IN THE U.S.-CHINA INNOVATION COMPETITION, May 16, 2024, Retrieved May 29, 2024 from https://www.csis.org/analysis/ intellectual-property-rights-us-china-innovation-competition

The United States is engaged in a competition for technology and innovation leadership with China, with both nations making significant investments in their domestic innovation systems while seeking to undermine the other's innovation system. The United States, for instance, has implemented export controls and investment restrictions to slow China's rate of technological innovation, while launching innovation initiatives covering emerging energy technologies, quantum computing, and wireless communications, among other industries.

4. Intellectual protections are a key issue of concern between the U.S. & China

Bernard Orr, (Writer and editor for corporate news), & Ethan Wang, (writer with Reuters), U.S. OFFICIAL SAYS IPR INFRINGEMENT STILL MAIN CONCERN IN CHINA, Apr. 16, 2024, Retrieved May 29, 2024 from https://www.reuters.com/world/us/us-official-says-ipr-infringement-still-main-concern-china-2024-04-16/

U.S. Patent and Trademark Office Director Kathi Vidal said on Tuesday that intellectual property rights (IPR) continue to be a main concern for U.S. businesses in China, and they face significant challenges with infringement. "Whether it's insufficient deterrence for infringement, challenges to pharmaceutical related patents, or the misappropriation of trade secrets, intellectual property rights protection and enforcement remain a key issue of concern in the U.S.-China bilateral relationship," Vidal said at an event with attendees from the U.S. business community and legal fields in Beijing.

G. INTELLECTUAL PROPERTY PROTECTIONS WILL SNOWBALL TO U.S.-CHINESE RELATIONS

1. Poor enforcement of IPR protections by China will spill up to harming U.S.-Chinese relations.

Wei Li, (Zhejiang University of Finance & Economics, Hangzhou, China), & Yichao Chen (Zhejiang University of Finance & Economics, Hangzhou, China), A STUDY OF THE INFLUENCE OF INTELLECTUAL PROPERTY ON CHINA–U.S. TRADE RELATIONS, Apr 1, 2020, Retrieved May 29, 2024 from https://journals.sagepub.com/doi/full/10.1177/ 2158244020915899

For the status of intellectual property protection in China, various studies have been conducted that focused on Chinese intellectual property indexes. Using quantitative evaluations by Ginarte and Park (1997) on patent protection levels in 110 countries from 1960 to 1990, W. Li and Yu (2014) set the intensity of Chinese intellectual property protection based on legislative protection and law enforcement for intellectual protection and took advantage of the measured data from 1985 to 2010 for the relevant calculations. As indicated by the results, the index of the intensity of Chinese intellectual property protection increased from 1.156 to 2.980 during the 25 years. Zhan Ying (2013) acquired the actual intellectual property protection levels for 122 countries and regions by performing quantitative measurements specific to the legislative intellectual property protection levels and constructed an intellectual property law enforcement index. In conformity with his findings, the legislative protection of Chinese intellectual property has been significantly improved in the recent 20 years. However, Chinese intellectual property law enforcement efforts are dramatically lower than those of developed countries and even fail to reach the world's average level. Consequently, the practical Chinese intellectual property protection level is also far lower than that of developed countries and slightly lower than the world average. China: Intellectual Property Infringement, Indigenous Innovation Policies, and Frameworks for Measuring the Effects on the U.S. Economy, issued by the United States International Trade Commission (ITC) in 2010, pointed out that "enforcement of IPR laws remains a serious problem in China; and ineffective enforcement contributes to widespread IPR infringement in China." Clearly, although Chinese intellectual property protection is being unceasingly enhanced, it still has a considerably long way to catch up with that in developed countries.

2. Anti-infringement investigations will be targeted at China:

Wei Li, (Zhejiang University of Finance & Economics, Hangzhou, China), & Yichao Chen (Zhejiang University of Finance & Economics, Hangzhou, China), A STUDY OF THE INFLUENCE OF INTELLECTUAL PROPERTY ON CHINA–U.S. TRADE RELATIONS, Apr 1, 2020, Retrieved May 29, 2024 from https://journals.sagepub.com/doi/full/10.1177/ 2158244020915899

However, the rapid economic growth in China has created a major conflict of national interests between China and America, and their intellectual property relations have become increasingly tense. On one hand, technological innovation accompanied by the steady strengthening of intellectual property protection (IPR) is being carried out in China to improve its comprehensive national power. From 1995 to 2017, the number of patents in China for inventions increased nearly 60-fold, from more than 20,000 to more than 1.3 million China. In contrast, American national interests are expected to be safeguarded by building an intellectual property trade barrier through Section 337 and Section 301 Investigations. As indicated by a 2004 survey of members of AmCham China, not only do 90% of the companies believe that the intellectual property protection measures taken by the Chinese government are invalid, but more than 75% of its members consider that their intellectual property rights are being infringed (Buckley, 2004). In addition, according to statistics by the Chinese Ministry of Commerce, since 2005, the influence of the intellectual property trade barrier on China has gone beyond that of anti-dumping, involving 100 major categories of goods and causing an economic loss of more than U.S.$200 billion. From 2002, annually, more than 30% of the Section 337 Investigations by America related to enterprises in Mainland China. This proportion reached 58.33%, 50%, and 57.14%, respectively, during 2007, 2009, and 2010. For 13 consecutive years, China acted as a country that suffered the most from American intellectual property trade barrier implemented through Section 337 Investigations. Concerning the 215 related cases, a number of involved Chinese companies are identified as the existence of infringement and, thus, subject to tough sanctions such as a general exclusion order, a limited exclusion order, and a cease and desist order. The research of Chiang (2004) found that anti-infringement investigations targeted at China are more frequently carried out in industries facing intense import competition in America. Clearly, the Section 337 Investigation is a common mechanism utilized by American enterprises to hamper foreign companies having the most direct competition relationship.

3. Intellectual Property Disputes Undermine U.S.-China Relations

Wei Li, (Zhejiang University of Finance & Economics, Hangzhou, China), & Yichao Chen (Zhejiang University of Finance & Economics, Hangzhou, China), A STUDY OF THE INFLUENCE OF INTELLECTUAL PROPERTY ON CHINA–U.S. TRADE RELATIONS, Apr 1, 2020, Retrieved May 29, 2024 from https://journals.sagepub.com/doi/full/10.1177/ 2158244020915899

Intellectual property has always been an issue that has troubled China–U.S. relations. In January 1979, the China–U.S. High-Energy Physics Cooperation was established. For the first time, the United States put forward intellectual property rights with the Chinese during the negotiations and defined copyright protection obligations as a principal clause between both sides. Since then, a large number of fundamental intellectual property agreements were concluded, facilitating the preliminary establishment of an intellectual property cooperative exchange mechanism between China and America.

4. Chinese Courts Will Engage In Parallel Legislation: Chinese courts are aggressive in handling parallel legislation by other nations.

Victoria Huang & Mark Cohen (an intern with the Center for Innovation, Trade, and Strategy at National Bureau of Asian Research) & Mark Cohen, (heads the Asia IP Project at the Berkeley Center for Law and Technology at. Berkeley Law School), U.S.-CHINA INTELLECTUAL PROPERTY ISSUES IN A POST-PHASE-ONE ERA, Jan. 29, 2022, Retrieved May 29, 2024 from https://www.nbr.org/publication/u-s-china-intellectual-property-issues-in-a-post-phase-one-era/

Chinese courts have also become more aggressive in handling high-value parallel litigation. In some respects, China has become an attractive destination for these courts: judges are well-trained, and the litigation is relatively inexpensive. Chinese courts also want to play a larger role in these disputes, as they have a direct impact on China's goals regarding standards for emerging technologies (e.g., 5G+ or the Internet of Things). At the same time, China is keen to set prices for U.S., European, and Japanese technology worldwide, thus reducing the price for foreign technology inputs in Chinese manufactured products. For example, a German court case awarded a royalty rate eighteen times the rate of a Chinese court in a parallel litigation matter. China is also responding to the difficult situation that companies such as Huawei face in overseas markets, where they have been precluded from selling their products but nonetheless have rich patent portfolios. This problem is global in nature. Trade diplomats and others should be engaging with China to find ways to de-escalate the tensions in this important area.

H. IMPACTS: CLIMATE CHANGE—U.S. & CHINA COOPERATING NOW

1. Strong U.S.-China relations are key to international climate change solutions.

Caitlin Welsh et al, (Director, Global Food and Water Security Program at the Center For Strategic and International Studies), THE CASE FOR U.S.-CHINA COOPERATION ON CLIMATE-SMART AGRICULTURE, May 7, 2024. Retrieved May 30, 2024 from https://www.csis.org/analysis/case-us-china-cooperation-climate-smart-agriculture

A third area of consensus among U.S. and Chinese experts was the importance of mutually agreed-upon standards of measurement for the climate impacts of agriculture. Over the past several years, governments have introduced policies that would regulate trade based on factors related to climate change, including carbon border adjustment mechanisms and the European Union's deforestation regulations. However, there are no globally agreed-upon standards for GHG emissions from agriculture—including, for example, volumes of GHGs emitted per unit of crops produced or the amount of carbon sequestered in different types of soil—nor a board to set such standards. Cooperation between U.S. and Chinese technical experts could result in formalized, evidence-based standards to which both countries agree. Agreement on standards by both the United States and China would benefit global trade and global climate change efforts and reduce the risk of disparate, overlapping standards that could increase market costs, inhibit trade, and confuse efforts to meet global climate goals.

2. U.S.-China bilateral relationship creates cooperation on key issues like climate change.

Elizabeth Economy, (Senior Fellow - Hoover Institution), IS THE U.S.-CHINA RELATIONSHIP THE MOST CONSEQUENTIAL RELATIONSHIP FOR AMERICA IN THE WORLD? Feb. 26, 2024. Retrieved May 30, 2024 from https://www.brookings.edu/articles/is-the-us-china-relationship-the-most-consequential-relationship-for-america-in-the-world/

The U.S.-China bilateral relationship has certainly had moments of great consequence for the United States. When the two countries' interests aligned, the relationship contributed to containing the Soviet Union in the 1970s and 1980s, jump-starting global cooperation on climate change in 2015, and over the decades, providing low-cost labor for American firms and a bounty of low-cost goods for American consumers. There have also been moments when important interests appeared aligned but ultimately were not, such as on North Korea's nuclear program.

3. U.S. & China are cooperating on climate change now.

Ian Bremmer, (President and Founder of GZERO Media.), WHY THE U.S.-CHINA RELATIONSHIP IS MORE STABLE THAN YOU MIGHT THINK, Apr. 29, 2024, Retrieved May 28, 2024 from https://www.gzeromedia.com/quick-take/why-the-us-china-relationship-is-more-stable-than-you-might-think

There's a lot more communication and cooperation on things like climate, as well as in response to America's fentanyl crisis, where the Chinese are shutting down the labs, the companies that have been exporting the precursor chemicals. Those things matter. They are engaged. There's also a lot of willingness of the United States, at the highest level, to provide more information to China, just on what the Americans are seeing happening around a confrontation in the Middle East that China would like to see a cease-fire for, so would the Americans at this point. And also, the Chinese don't have a lot of high level diplomats and a lot of ability to collect information that the Americans do. And when high level Americans are talking to their Chinese counterparts about the Middle East, the Chinese are very much in taking notes mode and appreciating that they're getting that information from the U.S..

4. U.S. is looking to engage China on climate change.

Joe Cash, (reports on China's economic affairs, covering domestic fiscal and monetary policy, key economic indicators, trade relations, and China's growing engagement with developing countries), & Ryan Woo, (Reuters reporter), WHAT DOESN'T KILL YOU MAKES YOU STRONGER,' CHINA TROLLS NEW U.S. TARIFFS, May 15, 2024. Retrieved May 30, 2024 from https://www.reuters.com/markets/what-doesnt-kill-you-makes-you-stronger-china-trolls-new-us-tariffs-2024-05-15/

Biden has said he wants to win this era of competition with China but not to launch a trade war, and U.S. officials have looked to engage Beijing on limited areas of cooperation, including climate change.

I. U.S.-CHINA RELATIONS KEY TO CLIMATE-SMART AGRICULTURE

1. Strong U.S.-China cooperation creates climate smart agriculture which is necessary to stop food wars around the globe.

Caitlin Welsh et al, (Director, Global Food and Water Security Program at the Center For Strategic and International Studies), THE CASE FOR U.S.-CHINA COOPERATION ON CLIMATE-SMART AGRICULTURE, May 7, 2024. Retrieved May 30, 2024 from https://www.csis.org/analysis/case-us-china-cooperation-climate-smart-agriculture

One of today's most urgent challenges is rising global food insecurity. Growing populations around the world will require more food while climate change and other pressures are limiting agricultural production, including in the United States and China. At the same time, food insecurity and malnutrition are threatening human health, reducing economic output, and contributing to unrest and conflict in many countries around the world. Given the scale of the challenges, and the critical roles both the United States and China play in global agriculture systems—for example, both countries are among the world's top importers and exporters of food—U.S.-China cooperation in food and agriculture promises outsized benefits to both countries and the global community.

2. Climate smart agriculture allows increased agriculture production.

Caitlin Welsh et al, (Director, Global Food and Water Security Program at the Center For Strategic and International Studies), THE CASE FOR U.S.-CHINA COOPERATION ON CLIMATE-SMART AGRICULTURE, May 7, 2024. Retrieved May 30, 2024 from https://www.csis.org/analysis/case-us-china-cooperation-climate-smart-agriculture

The discussions focused on areas that pose threats to U.S. and Chinese food security and agricultural interests that experts perceived the countries would be willing to jointly address and on which the global community would stand to benefit regarding U.S.-Chinese cooperation. The majority of ideas agreed upon by experts concerned climate-smart agriculture, an approach to agriculture that encompasses reducing food-related greenhouse gas (GHG) emissions, adapting agriculture to climate change, and increasing agricultural production in the face of the climate crisis.

J. IMPACTS: WEAKENING U.S.-CHINESE RELATIONS UNDERMINE EFFORTS TO SOLVE MULTIPLE THREATS AROUND THE GLOBE.

Susan A. Thornton, (Senior Fellow - Paul Tsai China Center, Yale Law School), IS THE U.S.-CHINA RELATIONSHIP THE MOST CONSEQUENTIAL RELATIONSHIP FOR AMERICA IN THE WORLD? Feb. 26, 2024. Retrieved May 30, 2024 from https://www.brookings.edu/articles/is-the-us-china-relationship-the-most-consequential-relationship-for-america-in-the-world/

Both Economy and Cartin make the point that U.S.-China cooperation has not lived up to the hype in recent decades, which is true. However, engagement brought many more benefits to Americans than the estrangement of the past five years. The deterioration in U.S.-China relations has stymied the needed coordination on major challenges where both countries carry the biggest weight in the system. If estrangement between the two grows, as Economy predicts, it will become much more difficult for the global community, including Americans, to meet economic, environmental, technological, security, and other challenges, as China's weight in all these areas approaches America's own. This failure will be incredibly consequential.

K. IMPACTS: WAR: U.S.-CHINA RIVALRY LEADS TO WAR

1. Strong bilateral relationships are key to avoiding a U.S.-China conflict.

Susan A. Thornton, (Senior Fellow - Paul Tsai China Center, Yale Law School), IS THE U.S.-CHINA RELATIONSHIP THE MOST CONSEQUENTIAL RELATIONSHIP FOR AMERICA IN THE WORLD? Feb. 26, 2024. Retrieved May 30, 2024 from https://www.brookings.edu/articles/is-the-us-china-relationship-the-most-consequential-relationship-for-america-in-the-world/

No respondent rules out the possibility of future U.S.-China conflict and all agree that such conflict must be avoided, highlighting the need for careful attention to the bilateral relationship; isolating China would thus be irresponsible, a point on which consensus has been generated with the help of U.S. allies over the last year. As Economy points out, other countries constrain or enable U.S. action depending on their own relations with China; they also tend to view U.S.-China relations as the most consequential bilateral relationship for themselves and the world. Allison further states that, while carefully managing relations to avoid conflict, the United States and China must further layer their engagement to enable not just conflict avoidance but active coordination and collaboration on the many areas where they are intertwined and are the two biggest players. This does make the relationship "complex," but it does not make it less consequential for America; indeed, quite the opposite.

2. U.S.-China relations are key to preventing conflict with China.

Richard Weitz, (Senior Fellow, Hudson Institute), BLINKEN'S TRIP HEIGHTENS U.S. DEBATE ON FUTURE CHINA POLICY, May 17, 2024, Retrieved May 30, 2024 from https://www.chinausfocus.com/foreign-policy/blinkens-trip-heightens-us-debate-on-future-china-policy

This "managed competition" framework combines elements of competition, cooperation, and conflict. Though competing with China on most issues, including by making U.S. industries and workers more productive by "Investing in America," the administration pursues cooperation on select international questions where Sino-American interests overlap. It also aims to avoid military conflict by strengthening U.S. regional defenses and alliances as well as building guardrails against inadvertent confrontation and escalation. Past cooperation has centered on managing climate and proliferation threats, but Blinken mentioned controlling Middle East conflicts as an emerging area of collaboration. Over time, though, the ratio of competition has grown. During his recent trip, Blinken rebuked Chinese assistance to Russia's military-industrial complex, unfair economic practices, human rights violations, and confrontations with U.S., Philippines, and other non-PRC vessels in international waters.

3. Rivalry between the U.S. and China risks war by misunderstandings, miscalculations, and accidents that lead to war.

Graham T. Allison et al, (Douglas Dillon Professor of Government - Harvard University), IS THE U.S.-CHINA RELATIONSHIP THE MOST CONSEQUENTIAL RELATIONSHIP FOR AMERICA IN THE WORLD? Feb. 26, 2024. Retrieved May 30, 2024 from https://www.brookings.edu/articles/is-the-us-china-relationship-the-most-consequential-relationship-for-america-in-the-world/

Are Xi Jinping and his colleagues serious about displacing the United States as the predominant power in the Pacific in the foreseeable future? I put that question to Lee Kuan Yew, the founder and long-time prime minister of Singapore, who was the world's most insightful China watcher until his death in 2015. I will never forget his response. With his piercing eyes widening with incredulity—as if to say, "Are you joking?"—he responded: "Of course! Why not? How could they not aspire to be number one in Asia—and, in time, the world?" This rivalry creates a classic Thucydidean dynamic that magnifies misunderstandings, multiplies miscalculations, and increases the impact of incidents and accidents that have historically ended in war. Of the 16 cases in the last 500 years in which a major rising power seriously threatened to displace a ruling power, 12 ended in war.

L. IMPACTS: CHINA IS AN EXISTENTIAL THREAT TO THE UNITED STATES.

Graham T. Allison et al, (Douglas Dillon Professor of Government - Harvard University), IS THE U.S.-CHINA RELATIONSHIP THE MOST CONSEQUENTIAL RELATIONSHIP FOR AMERICA IN THE WORLD? Feb. 26, 2024. Retrieved May 30, 2024 from https://www.brookings.edu/articles/is-the-us-china-relationship-the-most-consequential-relationship-for-america-in-the-world/

An existential threat. In 2024, there are two—and only two—nations in the world that have nuclear arsenals that can literally erase the United States from the map. China is, therefore, one of only two nations that poses a genuinely existential threat—that is, one that threatens our existence—to the United States. It is one of only two nations with which the United States is required to survive in a relationship cold warriors described as MAD (mutually assured destruction)—a condition that creates an overriding shared imperative for both countries' leaders to avoid a nuclear war in which their countries would be the first victims.

M. IMPACTS: IT IS NOT INEVITABLE THAT THERE WILL BE A U.S.-CHINA WAR.

Jeff Sommer, (writes Strategies, a weekly column on markets, finance and the economy), THE BUSINESS TIES THAT BIND THE U.S. AND CHINA ARE STRONG BUT FRAYING, May 24, 2024, Retrieved May 30, 2024 from https://www.nytimes.com/2024/05/24/business/united-states-china-chips-profits.html

"History shows that when a major power cuts off business and resources abruptly — so that prospects for future commerce look dim — the possibility of war becomes much greater," he added. "Fortunately, that hasn't happened so far with the United States and China. Greater conflict, even war — aren't inevitable. There are still plenty of opportunities for future business and, I think, that is, and should be, a deliberate part of current U.S. policy."

PATENT TROLLS DISADVANTAGE

Thesis: The thesis of this disadvantage is that strengthening intellectual property in the United States will cause other companies to patent everything surrounding the intellectual property right that has been gained to force legislation against the original party. Some companies exist only to sue other intellectual property holders. These patent trolls control businesses that produce no goods or services, they exist only to gain money from lawsuits targeting companies who attempt to strengthen intellectual property rights. These trolls undermine innovation in companies, because the company must spend time and resources on the lawsuits created by the patent trolls. However, innovative businesses are central to stopping multiple risks including climate change hunger and poverty.

I. THE AFFIRMATIVE PLAN WOULD LEAD TO PATENT TROLLS WHO WILL DESTROY INNOVATIONS IN THE AMERICAN ECONOMY.

A. THE U.S. IS THE WORLD'S LEADER IN INNOVATION NOW.

PYMNTS, (a recognized global leader for data, news and insights on innovation in payments), U.S. Leads World on Gen AI Investment, Innovation and Implementation, Oct. 24, 2023, Retrieved May 13, 2024 from https://www.pymnts.com/news/artificial-intelligence/2023/united-states-leads-world-generative-ai-investment-innovation-implementation/

When it comes to the innovation, investment and implementation of disruptive artificial intelligence (AI) products and research, the United States leads the rest of the global pack. That's according to a newly released report from venture capital firm Air Street Capital. The "State of AI Report 2023" showed that over 70% of the AI papers cited most since 2020 are authored by researchers from institutions and organizations in the U.S. Big Tech giants Google and Meta held the greatest percentage of cited AI research papers, while China's only entrant on the list, Beijing's Tsinghua University, fell just outside of the top 10 at No. 11. What's more, AI companies based in the U.S. were also the recipients of 70% of global private funding in 2023, up from 55% in 2022.

B. PATENT LITIGATION IS DECREASING NOW.

Julie Carson, (Director of Economic Strategy at Qualcomm), NEW DATA SHOW THERE IS A PROBLEM WITH THE U.S. PATENT SYSTEM—BUT IT'S NOT PATENT TROLLS, May 6, 2024. Retrieved May 13, 2024 from https://ipwatchdog.com/2024/05/06/new-data-show-problem-us-patent-system-not-patent-trolls/id=176149/

If the headlines are to be believed, every aspect of American life, from farming to football, is under threat due to excessive patent litigation. While these anecdotes may seem compelling, it is important to look at the underlying data before drawing any conclusions about the state of the U.S. patent system. As an economist and one of the authors of the Federal Trade Commission's study of patent assertion entities (PAEs), I understand the value data can bring to patent policy debates, and have also seen firsthand the damage evidence-free policymaking has on America's innovation ecosystem. On World IP Day, Marcum, LLP, a leading accounting and advisory firm, released a report that examines 20 years of patent infringement decisions at U.S. district courts. A careful reading of their report reveals that not only is patent litigation not excessive, but patent owners struggle to enforce their patents against infringers. The report shows that overall patent litigation is declining, injunction grants are low, and litigation by non-practicing entities (NPEs) is not pervasive.

C. THE AFFIRMATIVE PLAN WILL INCREASE PATENT TROLLING. (NOTE: ONLY READ THE LINK SPECIFIC TO THE AFFIRMATIVE PLAN YOU ARE DEBATING.)

1. Copyright protections will allow trolls to get major damages from infringement claims.

Lindsey M. Mead, (Attorney), UNDER THE BRIDGE – THE RISE OF COPYRIGHT TROLLS IN THE INTELLECTUAL PROPERTY SPACE, Feb. 5, 2024. Retrieved May 13, 2024 from https://www.michiganitlaw.com/rise-of-copyright-trolls-in-intellectual-property

Through tactical litigation practices, copyright trolls rely on copyright law to allege infringement and threaten major statutory damages upon unsuspecting defendants. The term "copyright troll" is an unflattering nickname for someone who manipulates the intellectual property ("IP") laws to force a "toll" by way of a settlement payout on market participants.

2. Expanding patent rights will lead to patent trolls.

Joe Mullin, (SENIOR POLICY ANALYST Electronic Frontier Foundation), CONGRESS MUST STOP PUSHING BILLS THAT WILL BENEFIT PATENT TROLLS, Mar. 12, 2024, Retrieved May 13, 2024 from https://www.eff.org/deeplinks/2024/03/congress-must-stop-pushing-bills-will-benefit-patent-trolls

The Senators pushing this agenda have chosen willful ignorance of the patent troll problem. The facts remain clear: the majority of patent lawsuits are brought by patent trolls. In the tech sector, it's more than 80%. These numbers may be low considering threat letters from patent trolls, which don't become visible in the public record. These patent lawsuits don't have much to do with what most people think of when they think about "inventors" or inventions. They're brought by companies that have no business beyond making patent threats.

3. New protections for trademarks risks attracting trademark trolls.

Dana Riess, (more than 25 years of financial experience in the pharmaceutical and healthcare industries), SMALL BUSINESS VS. IP TROLLS, Dec. 1, 2023. Retrieved May 13, 2024 from https://www.sfmagazine.com/articles/2023/december/small-business-vs-ip-trolls

Applying for a trademark that has already been registered in other countries or for different goods/services with the purpose of extracting financial benefits is considered an opportunistic trademark registration. Opportunistic trademark registrations can include applying for a translated trademark, a company name, domain name, logo, or even a color used by a new or well-known mark. For example, a nonpracticing entity (NPE) that doesn't use a mark in conjunction with the actual sale of goods or services files for a trademark in China, based on a legitimate brand owner's mark before the owner enters the Chinese market. When the original brand owner tries to tap the Chinese market, they find their mark already hijacked. These NPE trademark holders that generate or attempt to generate earnings by enforcing their trademarks through malicious litigation are commonly defined as "trademark trolls."

D. PATENT TROLLS SLOW DOWN THE PACE OF INNOVATION.

FASTER CAPITAL, (online incubator and accelerator), PATENT TROLLS: OVERCOMING CHALLENGES IN UTILITY PATENT ENFORCEMENT, Apr. 25, 2024, Retrieved May 13, 2024 from https://fastercapital.com/content/Patent-trolls--Overcoming-Challenges-in-Utility-Patent-Enforcement.html

Patent trolls can stifle innovation by creating a chilling effect on the development of new technologies. Startups and small businesses may be hesitant to invest in research and development if they fear being sued by patent trolls. This can slow down the pace of innovation and limit the introduction of new products and services.

E. INNOVATIONS SOLVE MULTIPLE EXISTENTIAL RISKS.

IRISH EXAMINER, Innovation alone won't solve the big problems, Aug. 16, 2019. Retrieved May 13, 2024 from https://www.irishexaminer.com/farming/arid-30944350.html

Innovations and new technologies triggered five technological revolutions in modern history, but it is systems innovation that is needed to cope with today's existential problems of climate change, hunger and poverty, health and nutrition, environmental pollution, social inequality, and deadly diseases.