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AFFIRMATIVE EVIDENCE FILE INTRO

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Climate Change triggers massive water shortages

Anastasia **Moloney**, Latin America and Caribbean correspondent @ Thomson Reuters Foundation, 7 September, **2020**.

"Water wars: How conflicts over resources are set to rise amid climate change," We Forum, https://www.weforum.org/agenda/2020/09/climate-change-impact-water-security-risk

From Yemen to India, and parts of Central America to the African Sahel, about a quarter of the world's people face extreme water shortages that are fueling conflict, social unrest and migration, water experts said on Wednesday. With the world's population rising and climate change bringing more erratic rainfall, including severe droughts, competition for scarcer water is growing, they said, with serious consequences. "If there is no water, people will start to move. If there is no water, politicians are going to try and get their hands on it and they might start to fight over it," warned Kitty van der Heijden, head of international cooperation at the Netherlands' foreign ministry. "It's threats like these that keep me up at night," the diplomat told a webinar hosted by the World Resources Institute (WRI), a U.S.-based research group. According to the WRI, 17 countries face "extremely high" levels of water stress, while more than two billion people live in countries experiencing "high" water stress. One in four children worldwide will be living in areas of extremely high water stress by 2040, researchers estimated. In terms of water availability, "at some point we are going to hit the wall, and that wall might be different in different places", Heijden said. Climate change is compounding the challenge, she said, with cities such as India's Chennai and South Africa's Cape Town battling severe water shortages in recent years related in part to erratic rainfall.

Climate change makes water scarcity inevitable

Claire **Felter**, bachelor's degree in international relations, bachelor's degree in journalism, written with Kali Robinson, April 22, **2021**.

"Water Stress: A Global Problem That's Getting Worse," CFR, https://www.cfr.org/backgrounder/water-stress-global-problem-thats-getting-worse

Global warming is expected to increase the number of water-stressed areas and heighten water stress in already affected regions. Subtropical areas, such as Australia, the southern United States, and North African countries, are expected to warm and suffer more frequent and longer droughts; however, when rainfall does occur in these regions, it is projected to be more intense. Weather in tropical regions will likewise become more variable, climate scientists say.

ARTIFICIAL INTELLIGENCE AFF

Resolved: The United States federal government should significantly strengthen its protection of domestic intellectual property rights in copyrights, patents, and/or trademarks.

Artificial Intelligence (AI) “inventorship” refers to conferring intellectual property rights (IPR) to AI or works invented and created uniquely by AI. Currently, the USPTO requires that to be eligible for a patent, copyright, or trademark, the applicant must explicitly be human, or “natural person”. This creates a chill on investment and hence innovation. The plan has Congress and the USPTO reform patent policies to allow for AI inventorship (including “creatorship). The first advantage claims innovation from AI patents are essential to develop AI that can counter inevitable AI-sponsored cyber terrorism. The second advantage Argues that innovation it is important to U.S. economic growth and technological leadership. The value of this Affirmative lies in 1. AI is inevitable so any “AI bad” turns are non-unique and 2. There are a ton of potential advantages from specific diseases to bioweapons defense and space colonization.

**** 1AC****

Observation One: The Status Quo

A. Advances in AI are rapidly advancing toward full thinking systems

Rafael Dean **Brown,** Centre for Law and Development, Qatar University College of Law, **2021**, "Property ownership and the legal personhood of artificial intelligence," Information & Communications Technology Law, 30:2, 208-234, https://www.tandfonline.com/doi/pdf/10.1080/13600834.2020.1861714, Accessed May 10, 2024

Human development, when viewed within the larger context of the earth's existence, has been a very recent phenomenon. If one were to compare the earth's actual existence as lasting a year, human development1 in comparison has only been for approximately one minute. **Artificial intelligence** (AI), in turn, has not even registered a full one second. **AI is still in its infancy. Yet, the rapid advances made in the field of AI has already been astonishing**. AI awed the world in 1997 when IBM's Deep Blue supercomputer beat then reigning chess world champion Garry Kasparov. 2 In March 2016, Google's AI computer Alpha Go, developed by Google's DeepMind, defeated world Go champion Lee Sedol.3 Go is considered a more complex and challenging board game than chess because playing the game requires anthropomorphic intuition and pattern recognition.4 Previously in 2011, IBM's Watson, a cognitive supercomputer, defeated former Jeopardy! champions Brad Rutter and Ken Jennings.5 Watson was a significant advancement from Deep Blue because its software could process and reason with natural language.6 However profoundly impressive were AI's victories in the realm of games, **society will ultimately measure AI's success or usefulness by the advancement of its application beyond gaming. Aside from Google's renowned driverless car, AI has recently demonstrated anthropomorphic learning and decision-making in two coveted professions: law and medicine.**

B. The USPTO's refusal of DABUS clarified that only humans can satisfy current legal requirements for inventorship

Austin **Kim,** ASSOCIATE Foley & Lardner, **And** Matthew **Horton,** SENIOR COUNSEL Foley & Lardner, Summer **2020,** "Inventorship: why AI is not smart enough yet," Managing IP, https://www.managingip.com/article/2a5cwwad54thz0e487rpc/inventorship-why-ai-is-not-smart-enough-yet, Accessed May 10, 2024

The global patent community is currently engaged in a discourse on various policy issues surrounding patents for artificial intelligence (AI). **One of the questions under discussion is whether an AI agent (as in, not a human) is, or should be, eligible to be an inventor on a patent application. In** a decision published on April 22, **2020, the USPTO responded with a categorical "no.' The decision rejected the listing of an AI agent - dubbed "Device for Autonomous Boot-strapping of Unified Sentience" (DABUS) - as the inventor, in a highly publicised patent application.** The decision explained that an Al agent cannot meet certain statutory definitions for an inventor or the jurisprudential tests for determining inventorship under US law. **In the USPTO's view, the Patent Act suggests an inventor must be a natural person because the statutory language describes an inventor with terms such as "whoever," "himself or herself," and "individual". The act also describes inventor obligations in terms of actions that cannot be performed by any other entity besides human beings, such as requiring an inventor to "execute an oath or declaration."** In addition to the statutory language, the decision further relies on case law defining the contours of inventorship. **Generally, inventorship turns on the question of "conception." The legal tests for conception require a person to conceive of and contribute to the inventive subject matter in the claims. In case law, these tests expressly define conception as arising from "the mind of the inventor."** Therefore, **according to the USPTO, only natural persons can satisfy the requirements for inventorship.**

C. The Thayler v. Vidal decision codified human requirements

Regina Sam **Penti**, Prtner at Ropes & Gray, JD, cum laude, Harvard Law School and M.Eng. (Electrical Engineering and Computer Science), MIT, **et al,** February 14**, 2024,** "Can AI Inventions Be Patented? The USPTO Speaks," https://www.ropesgray.com/en/insights/alerts/2024/02/can-ai-inventions-be-patented-the-uspto-speaks, Accessed May 3, 2024

Inventors and joint inventors named on U.S. patents and patent applications must be natural persons. Applicants should not list AI systems as joint inventors. The USPTO clarified the principles set forth in Thaler v. Vidal,1 **specifically noting that Thaler is an acknowledgment that the statutory language clearly limits inventorship to natural persons but is not a recognition of any limits on the current or future state of AI.** While AI systems and other non-natural persons may not be listed as inventors on U.S. patents and patent applications, the use of an AI system by a natural person will not preclude that natural person from qualifying as an inventor (or joint inventors) if the natural person significantly contributed to the claimed invention (as discussed below). Accordingly, the inability to list an AI system used to create an invention as a joint inventor does not render the invention unpatentable due to improper inventorship. A natural person who creates an invention using an AI system must "contribute significantly" to every claim set forth in the invention, as specified by the Pannu factors. In determining AI-assisted inventorship, the USPTO pointed to the test used in Pannu v. Iolab Corp.,2 which is often used to determine joint inventorship. To be considered a named inventor, each natural person must "(1) contribute in some significant manner to the conception or reduction to practice of the invention,3 (2) make a contribution to the claimed invention that is not insignificant in quality, when that contribution is measured against the dimension of the full invention, and (3) do more than merely explain to the real inventors well-known concepts and/or the current state of the art." **A natural person must have significantly contributed to each claim in a patent or patent application, and determination is made on a claim-by-claim and case-by-case basis.**4 For example, where a single person uses an AI system to create an invention, that single person must make a significant contribution to every claim in the patent or patent application.

Plan: The U.S. Congress and the USPTO should revise current patent laws and regulation to specifically allow for AI inventorship with human surrogates to satisfy signatory requirements.

Observation Two: Solvency

A. AI invents are happening now. Only Congress and the USPTO can do the plan. Granting inventorship to AI with human signatory requirements satisfies incentives for investment and innovation, while addressing basic challenges

David V. **Sanker**, Ph.D., J.D., Reg. No 56,242, March 12, **2020**, "Response to Question #3," USPTO, https://www.uspto.gov/sites/default/files/documents/David-Sanker_RFC-84-FR-44889.pdf, Accessed May 3, 2024

As the applications of Artificial Intelligence ("AI") evolve, they become more ubiquitous in our society and push the boundaries of the legal systems as we know them. **The growth of AI over the past few decades and its potential will continue to fundamentally challenge the existing patent system. Current laws enable the USPTO to handle inventions that use AI, but the current developments in this technology already demonstrate the potential for AI itself to be an inventor of new technologies**. [1] In their Stanford Tech Law Review Article, Ben Hattenbacha and Joshua Glucoft identify some inventions created using AI.[2] **The current patent laws do not accommodate AI inventors** (e.g., an AI system cannot sign an assignment or a declaration). **The Congress and the USPTO should address this by revising the current patent laws and regulation to specifically allow for AI inventors. According to the U.S. Constitution, "The Congress shall have power to [...] promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries."**[3] Furthermore **35 U.S.C. § 200 states that the patent system is supposed "to promote the commercialization and public availability of inventions made in the United States by United States industry and labor."** Traditionally **the USPTO has limited the term inventor to human entities**.[4] **It is, however, in the interest of the "progress of science and the useful arts"**[5] **to extend the definition of "inventor" to include AI when appropriate to increase the number of inventions that become available in the market**. AI inventors will continue to invent at increasing rates, potentially exceeding those of human inventors.[6] In some cases, AI is able to create inventions that humans could not do, so **it is important to incentivize these inventions. One way the USPTO can accomplish this is by granting inventor status to AI, with a human surrogate to execute any oath, declaration, or assignment.**[7] **This would create continuous incentives for the development of AI that can invent new technologies and at the same time address the challenges around the patent law signatory requirement**.[8] **A human surrogate can declare** (e.g., under penalty of perjury) **that the AI inventor truly invented, and did not acquire the invention from an external source**. The bigger concerns with granting inventor status to AI include: 1) how to define "a person having ordinary skill in the art ("PHOSITA") to which the claimed invention pertains;"[9] and 2) how to determine the prior art rules around AI inventions. Because of the rapid evolution of AI, if AI were to be included in the PHOSITA definition and/or were designated as prior art, then a larger number of inventions would be considered obvious. These changes could impair the process of human inventiveness. Alternatively, AI inventions could be disregarded for purposes of prior art and PHOSITA. That, however, would result in an absurd split that could make an invention obvious or non-obvious based on who is listed as an inventor. "Any proposed solution to these issues must address: (i) the fact that there will be both human inventors and non-human inventors; (ii) the continued evolution of AI inventors, as well as advanced AI tools used by human inventors; (iii) the Constitutional and legislative goal to promote the progress of science and useful arts;and (iv) the need for a workable solution for inventors, patent practitioners, and patent examiners." See Daily Journal, "Can the U.S. Patent Office Handle 'Artificial Inventors'?", September 30, 2019, David V. Sanker. **The future is already here and AI is capable of developing meaningful inventions. AI inventors are able to produce creative works that were previously only possible in the human brain. As this new wave of discovery quickly approaches, we need to adapt a system of patent law that rewards such methods, while at the same time addressing the challenges.**

B. The USFG should reform patent policy to recognize AI inventorship

Ryan **Abbott**, PhD. Candidate, **2020**, "The Reasonable Robot: Artificial Intelligence and the Law," Submitted for the Degree of Doctor of Philosophy School of Law Faculty of Arts and Social Sciences University of Surrey, https://s3.eu-central-1.amazonaws.com/eu-st01.ext.exlibrisgroup.com/44SUR_INST/storage/alma/9E/76/B7/0B/28/D5/FE/29/F7/98/18/79/76/4D/11/62/Abbott_Thesis.pdf?response-content-type=application%2Fpdf&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Date=20240506T030032Z&X-Amz-SignedHeaders=host&X-Amz-Expires=119&X-Amz-Credential=AKIAJN6NPMNGJALPPWAQ%2F20240506%2Feu-central-1%2Fs3%2Faws4_request&X-Amz-Signature=e82985315eaa6c4c3e7457dfcb25be5ae8cf1b620f6ad7ee776d74eb34678ef7, Accessed May 5, 2024

It is important for policy makers to give serious consideration to the issue of computer inventorship. There is a need for the Patent Office to issue guidance in this area, for Congress to reconsider the boundaries of patentability, and for the courts to decide whether computational invention is worthy of protection. Doing so and recognizing that computers can be inventors will do more than address an academic concern; it will provide certainty to businesses, fairness to research, and promote the progress of science. In the words of Thomas Jefferson, "ingenuity should receive a liberal encouragement."313b What could be more ingenious than creative computers?

Advantage One: Cyber-attacks

A. Cyber-attacks are becoming more common, increasing the risks that offense AI will massively scale up malicious attacks, including warfare

William **Dixon**, Head of Future Networks and Technology, World Economic Forum And Nicole Eagan, Chief Executive Officer, Darktrace, June 19, **2019**, "3 ways AI will change the nature of cyber attacks," https://www.weforum.org/agenda/2019/06/ai-is-powering-a-new-generation-of-cyberattack-its-also-our-best-defence/, Accessed 5-13-2024

Cyberattacks are becoming ubiquitous and have been recognized as one of the most strategically significant risks facing the world today. In recent years, we have witnessed digital assaults against governments and the owners of critical infrastructure, large private corporations and smaller ones, educational institutions and non-profit organizations. Not only is **no sector immune from cyberattacks, the level of sophistication of the threats they face is continually increasing.** The future of cybersecurity will be driven by a new class of subtle and stealthy attackers that has recently emerged. Their aim is not to steal data, but rather to manipulate or change it. **There is little doubt that artificial intelligence** (AI) **will be used by attackers to drive the next major upgrade in cyber weaponry and will ultimately pioneer the malicious use of AI. AI's fundamental ability to learn and adapt will usher in a new era in which highly-customised and human-mimicking attacks are scalable. 'Offensive AI'** – highly sophisticated and malicious attack code – **will be able to mutate itself** as it learns about its environment, and to expertly compromise systems with minimal chance of detection. Prototype-AI attacks: a glimpse into the **future AI-powered cyberattacks are not a hypothetical future concept. All the required building blocks for the use of offensive AI already exist:** highly sophisticated malware, financially motivated – and ruthless – criminals willing to use any means possible to increase their return on investment, and open-source AI research projects which make highly valuable information available in the public domain. One of the most notorious pieces of contemporary malware – the Emotet trojan – is a prime example of a prototype-AI attack. Emotet's main distribution mechanism is spam-phishing, usually via invoice scams that trick users into clicking on malicious email attachments. The Emotet authors have recently added another module to their trojan, which steals email data from infected victims. The intention behind this email exfiltration capability was previously unclear, but Emotet has recently been observed sending out contextualized phishing emails at scale. This means it can automatically insert itself into pre-existing email threads, advising the victim to click on a malicious attachment, which then appears in the final, malicious email. This insertion of the malware into pre-existing emails gives the phishing email more context, thereby making it appear more legitimate. Yet the criminals behind the creation of Emotet could easily leverage AI to supercharge this attack. Currently, the message on the final phishing email is usually highly generic - "Please see attached", for instance - and this may sometimes arouse suspicion. However, by leveraging an AI's ability to learn and replicate natural language by analysing the context of the email thread, these phishing emails could become highly tailored to individuals. This would mean that an AI-powered Emotet trojan could create and insert entirely customized, more believable phishing emails. Crucially, it would be able to send these out at scale, which would allow criminals to increase the yield of their operations enormously. **The consequences of these developing attack methods could be highly destructive, and even life-threatening.** By undermining data integrity, these stealthy attacks cause trust in organizations to falter, and may even cause systemic failures to occur. Imagine an oil rig using faulty geo-prospection data to drill for oil in the wrong place, or a physician making a diagnosis using compromised medical records. **As the AI arms race continues, we can only expect this circle of innovation to escalate.**

B. Only AI innovation solves next gen cyberattacks

William **Dixon**, Head of Future Networks and Technology, World Economic Forum And Nicole Eagan, Chief Executive Officer, Darktrace, June 19, **2019**, "3 ways AI will change the nature of cyber attacks," https://www.weforum.org/agenda/2019/06/ai-is-powering-a-new-generation-of-cyberattack-its-also-our-best-defence/, Accessed 5-13-2024

Incorporating AI in the digital ecosystem As we increasingly rely on connected systems and devices, we are quickly developing a highly advanced and heavily connected digital ecosystem. We will require partnerships and capabilities that prioritize winning the strategic battles that count – and safeguard not only economically valuable data held by the public and private sectors, but the **confidence in digital systems** that **underpins social cohesion and democratic institutions. Investment in new technology will play a critical role in** this emerging reality and evolving ecosystem. According to Forrester's Using AI for Evil report, "**mainstream AI-powered hacking is just a matter of time". Indeed, as we begin to see AI become part of the cyber attacker's toolkit, the only way that we will be able to combat this malicious use of AI is with AI itself**. Therefore, incorporating the technology into this ecosystem is crucial.Counterattack: Fighting machine with machine The cybersecurity community is already heavily investing in this new future, and is using AI solutions to rapidly detect and contain any emerging cyberthreats that have the potential to disrupt or compromise key data. **Defensive AI is not merely a technological advantage in fighting cyberattacks, but a vital ally on this new battlefield.** Rather than rely on security personnel to respond to incidents manually, organizations will instead use AI to fight back against a developing problem in the short term, while human teams will oversee the AI's decision-making and perform remedial work that improves overall resilience in the long term. AI-powered attacks will outpace human response teams and outwit current legacy-based defenses; therefore, the mutually-dependent partnership of human and AI will be the bedrock of defense strategies in the future. **The battleground of the future is digital, and AI is the undisputed weapon of choice. There is no silver bullet to the generational challenge of cybersecurity, but one thing is clear: only AI can play AI at its own game. The technology is available, and the time to prepare is now.**

C. The impact is nuclear escalation

James **Johnson** is a Postdoctoral Research Fellow at the James Martin Center for Nonproliferation Studies at the Middlebury Institute of International Studies (MIIS), Monterey **2019** "The AI-cyber nexus: implications for military escalation, deterrence and strategic stability" Journal of Cyber Policy, https://www.tandfonline.com/doi/full/10.1080/23738871.2019.1701693?casa_token=S5u2prjCDUwAAAAA%3AMIiwLChl5HM7bNaPhlussbuwDnsgv0qcVM1oPkHZUCkxmqKqGWObK1c5VvSExQ2z4fk8DM8-TkX9kg&

How could AI-infused cyber capabilities be used to subvert, or otherwise compromise, the reliability, control and use of states' nuclear forces? This article argues that **a new generation of artificial intelligence (AI) enhanced cyber capabilities will amplify the risk of inadvertent escalation caused by the co-mingling of nuclear and strategic non-nuclear weapons and the increasing speed of warfare, thereby increasing the risk of nuclear confrontation.** It examines the potential implications of cyber (offensive and defensive) capabilities augmented with AI applications for nuclear security. The article concludes that **future iterations of AI-enhanced cyber counterforce capabilities will complicate the existing challenges of cyber defence, and in turn, compromise nuclear assets and increase the escalatory effects of offensive cyber capabilities.**

Advantage Two: Innovation

A. The requirement of human only inventorship creates a chill on innovation and increases costs

Ernest **Fok,** JD, Santa Clara University School of Law, **2021,** "CHALLENGING THE INTERNATIONAL TREND: THE CASE FOR ARTIFICIAL INTELLIGENCE INVENTORSHIP IN THE UNITED STATES," Santa Clara Journal of International Law, https://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=1241&context=scujil, Accessed May 10, 2024

While investment in AI has dramatically increased, the USPTO has not been receiving a similar increase in applications claiming computers as the inventor. 101 **This suggests that applicants are choosing not to disclose the AI in the inventive process.**102 **This trend of obscuring AI involvement in the inventive process highlights the legal risks of listing a non-human inventor.** While **the practice of listing humans** who utilize inventing-AI has worked for the U.S. system so far, it **fails to further incentivize the use of inventing-AI.**103 For example, corporations, research institutions, **and investors may be dissuaded from using inventing-AI to fully automate innovation because it amplifies the uncertainty and administrative burden** of obtaining a patent on the resulting invention**. By requiring a natural person to be listed as an inventor, the U.S. unnecessarily maintains a cost-inefficient status quo. Should the U.S. recognize AI inventorship, it could drastically change industries whose R&D costs have been ballooning just to maintain historical rates of useful, patentable discoveries**.104 **AI inventorship is a critical step in unlocking inventing-AI' s potential to promote innovation within the patent landscape.** Several reasons supporting AI inventorship are discussed below.

B. Lacking protection means AI would just get ripped off, which stifles production in the first place

Tim W. **Dornis,** Ph.D./Dr. iur. (Tuebingen/Germany), J.S.M. (Stanford University), attorney at law (New York), Professor of Law, Leuphana Law School, **2020,** "AI Creativity: Emergent Works and the Void in Current Copyright Doctrine," 22 Yale J.L. & Tech. 1 (2020), https://yjolt.org/ai-creativity-emergent-works-and-void-current-copyright-doctrine, Accessed May 9, 2024

When it comes to a policy analysis of emergent work protection, the relevance of the economic model is regularly openly rejected. In many cases, though, the model's incentive mechanism is simply misunderstood. To start with the most evident fallacy, part of **the scholarly literature regularly limits its analyses to the benefits of AI creativity for the general public**. This camp focuses on the welfare effects of emergent works' availability as unprotected subject matter in the public domain.118 In doing so, proponents of this approach correctly acknowledge that there is a positive effect on public welfare in expanding access to creative products in general. If emergent works are freely accessible, maximum supply and minimum prices are guaranteed—in economic terms, there is static efficiency. However, limiting the analysis to freedom of access neglects the fact that the public is also interested in the continuous production of creative works. This is called dynamic efficiency. Such efficiency requires having incentives for potential creators and authors. This is why lawmakers grant IP rights.119 Inevitably, of course, rights reduce static efficiency because their owners can limit output and access and raise prices. Yet **too little legal protection**—a consequence of the public-good character of creative works—**inevitably leads to underproduction**.120 In other words, **without protection against copying, authors and creators can expect imitators to exploit their works at virtually zero cost. Hence, the prospects for authors to recoup their investment are dim, which means they have less incentive to create in the first place. Ultimately, the public will suffer from this overall lack of creativity. Establishing an adequate balance between the granting of rights and the free accessibility of creative products is therefore essential**. With respect to emergent works, the equation is the same. Hence, the overall benefit of a per se refusal of protection for AI creativity is highly doubtful. A balanced approach requires an accounting of all costs and benefits ensuing from the protection or non-protection of emergent works. To date, the discussion has been incomplete, especially when the focus is merely on the benefits of "free AI creativity," while disregarding the detrimental effects of underprotection.

C. A strong U.S. patent system is essential to the U.S. economy and global innovation. A retreat from U.S. IPR leadership tanks our competitiveness in favor of China

Stephen **Ezell** is vice president for global innovation policy at the Information Technology and Innovation Foundation (ITIF) and director of ITIF's Center for Life Sciences Innovation, June 12, **2023**, "Losing the Lead: Why the United States Must Reassert Itself as a Global Champion for Robust IP Rights," Information Technology and Innovation Institute, https://itif.org/publications/2023/06/12/losing-the-lead-why-united-states-must-reassert-itself-as-global-champion-for-robust-ip-rights/, Accessed May 12, 2024

For decades, the United States was the leading advocate for a global trading system that respected and enforced intellectual property rights (IPR), both because the U.S. economy and millions of jobs depended on IPR and because policymakers understood how important IPR were to global advancement. Without that persistent and forceful U.S. voice, IPR around the world would have been considerably weaker, to the detriment of technological and other forms of progress. Unfortunately, today, U.S. policymakers have walked away from that critical role, all too often arguing for weaker, not stronger, IPR and enforcement. In large part this is because many, including many in the Biden administration, have come under the influence of anti-IP proselytizers who see IP as a tool for corporate enrichment that limits access by working people, both at home, and abroad, especially in developing nations.1 For them, weak IP is a critical tool in the equity agenda: enabling cheaper drugs, free content, low-priced clean energy tech in less developed nations, and other redistributionist goals. There are two key problems with America's abandonment of IP leadership. First, the job of the U.S. government is to first and foremost promote American welfare, not global welfare. There is no doubt that giving away valuable U.S. IP to developing nations would help the latter (at least in the short run) the same way giving them hundreds of billions of dollars would help them. But it would hurt American companies, creators, and jobs and the overall economy. Second, weak IP will not help the rest of the world in the moderate to long term because it would reduce the incentives and resources needed for innovation to help solve global challenges. Climate change requires much better and cleaner technology. Giving U.S. clean energy IP to developing nation hurts that task, not helps it. The world needs not just drug access, but much better drugs. Weak IP hurts that. Great content—in the form of movies, books, music, photographs, and more—depends on IP.

As policymakers seek to preserve and advance America's lead in a range of advanced industries, especially vis- à-vis China, they should be strengthening U.S. commitment to strong IP protection, including fighting to protect U.S. innovators and creators from IP theft.2 Without that, a key tool in protecting U.S. advanced industry leadership will be tossed away.

D. Economic growth is the foundation of U.S. international leadership and essential to address a host of existential threats from nuclear war to climate change

Zoë **Baird,** CEO and President of the Markle Foundation, former Senior Visiting Scholar and Senior Research Associate at Yale Law School, **2020,** Domestic & International (Dis)Order: A Strategic Response, p. 89-91.

Broadly shared **economic prosperity is a bedrock of America's economic and political strength—both domestically and in the international arena.** A strong and equitable recovery from the economic crisis created by COVID-19 would be a powerful testament to the resilience of the American system and its ability to create prosperity at a time of seismic change and persistent global crisis. Such a recovery could attack the profound economic inequities that have developed over the past several decades. Without bold action to help all workers access good jobs as the economy returns, the United States risks undermining the legitimacy of its institutions and its international standing. The outcome will be a key determinant of America's national security for years to come. An equitable recovery requires a national commitment to help all workers obtain good jobs—particularly the twothirds of adults without a bachelor's degree and people of color who have been most affected by the crisis and were denied opportunity before it. As the nation engages in a historic debate about how to accelerate economic recovery, ambitious public investment is necessary to put Americans back to work with dignity and opportunity. We need an intentional effort to make sure that the jobs that come back are good jobs with decent wages, benefits, and mobility and to empower workers to access these opportunities in a profoundly changed labor market. To achieve these goals, American policy makers need to establish job growth strategies that address urgent public needs through major programs in green energy, infrastructure, and health. Alongside these job growth strategies, we need to recognize and develop the talents of workers by creating an adult learning system that meets workers' needs and develops skills for the digital economy. The national security community must lend its support to this cause. And as it does so, it can bring home the lessons from the advances made in these areas in other countries, particularly our European allies, and consider this a realm of international cooperation and international engagement.

Shared Economic Prosperity Is a National Security Asset **A strong economy is essential to America's security and diplomatic strategy. Economic strength increases our influence on the global stage, expands markets, and funds a strong and agile military and national defense.** Yet it is not enough for America's economy to be strong for some—prosperity must be broadly shared. Widespread belief in the ability of the American economic system to create economic security and mobility for all—the American Dream— creates credibility and legitimacy for America's values, governance, and alliances around the world. After World War II, the United States grew the middle class to historic size and strength. This achievement made America the model of the free world—setting the stage for decades of American political and economic leadership. **Domestically, broad participation in the economy is core to the legitimacy of our democracy and the strength of our political institutions. A belief that the economic system works for millions is an important part of creating trust in a democratic government's ability to meet the needs of the people.** The COVID-19 Crisis Puts Millions of American Workers at Risk For the last several decades, the American Dream has been on the wane. Opportunity has been increasingly concentrated in the hands of a small share of workers able to access the knowledge economy. Too many Americans, particularly those without four-year degrees, experienced stagnant wages, less stability, and fewer opportunities for advancement. Since COVID-19 hit, millions have lost their jobs or income and are struggling to meet their basic needs—including food, housing, and medical care.1 The crisis has impacted sectors like hospitality, leisure, and retail, which employ a large share of America's most economically vulnerable workers, resulting in alarming disparities in unemployment rates along education and racial lines. In August, the unemployment rate for those with a high school degree or less was more than double the rate for those with a bachelor's degree.2 Black and Hispanic Americans are experiencing disproportionately high unemployment, with the gulf widening as the crisis continues.3 The experience of the Great Recession shows that without intentional effort to drive an inclusive recovery, inequality may get worse: while workers with a high school education or less experienced the majority of job losses, nearly all new jobs went to workers with postsecondary education. Inequalities across racial lines also increased as workers of color worked in the hardest-hit sectors and were slower to recover earnings and income than White workers.4 The Case for an Inclusive Recovery A recovery that promotes broad economic participation, renewed opportunity, and equity will strengthen American moral and political authority around the world. It will send a strong message about the strength and resilience of democratic government and the American people's ability to adapt to a changing global economic landscape.

An inclusive recovery will reaffirm American leadership as core to the success of our most critical international alliances, which are rooted in the notion of shared destiny and interdependence. For example, NATO, which has been a cornerstone of U.S. foreign policy and a force of global stability for decades, has suffered from American disengagement in recent years. **A strong American recovery**—coupled with a renewed openness to international collaboration—**is core to NATO's ability to solve shared geopolitical and security challenges**. A renewed partnership with our European allies from **a position of economic strength will enable us to address global crises such as climate change, global pandemics, and refugees. Together, the United States and Europe can pursue a commitment to investing in workers for shared economic competitiveness, innovation, and long-term prosperity.**

E. Excluding AI inventorship erodes our tech leadership in favor of China.

Wen **Xie**, U.S. Patent Attorney and Partner with Global IP Counselors, July 14, **2022**, "The Case for Patenting AI: U.S. Patent Laws Better Get Smart or Get Left Behind," IP Watchdog, https://ipwatchdog.com/2022/07/14/case-patenting-ai-u-s-patent-laws-better-get-smart-get-left-behind/id=150204/, Accessed 5-12-2024

But our patent laws were written for machines and widgets, not this predictive model stuff. **It is hard to patent AI because AI is not a machine – it is a brain for a machine**. And the brain needs to learn, to become educated before it can be usefully applied to a machine. Those machine philosophers who design AI? They are teaching the brain. It's clear that **the U.S. Supreme Court does not want us to teach that brain**. Machine brains do not exist in their eyes, only machines. American Innovation is Being Left Behind **The rest of the world sees things differently**. Unfettered by similar legal constraints, **China is forging ahead in** the **AI** development sphere**, crafting** examination **guidelines specifically for big data** processing **and math**ematical **formulas, the tools for which to build advanced machine learning and deep learning capabilities**. Europe requires only a technical purpose for patentability of computer-implemented inventions, rather than a technical improvement. In the United States, big data processing and mathematical formulas are practically per se non-patentable subject matter, being considered abstract ideas lacking technical improvements necessary to overcome the Alice 2A/2B analysis. Technical improvements require improvements to the way the machine functions, which is the standard at both the United States Patent and Trademark Office (USPTO) and the U.S. Court of Appeals for the Federal Circuit. **The problem is that almost all machine learning and deep learning inventions will be considered not patentable under our current laws** because machine learning cannot survive the current technical improvement analysis. In the field of radiology, advanced image processing that can detect early onset cancer from ultrasounds depends on vast amounts of datasets of images being fed to a machine for processing – datasets accounting for age, ethnicity, body type, and a myriad of confounding factors that can affect the image. Eventually, the machine will become smart enough to account for all the confounding factors and be able to identify critical issues for the healthcare provider. For autonomous vehicles, in order to have an autonomous vehicle brain that will not drive you into a ball pit, the AI inventor needs to teach the brain everything—literally every road condition for every navigation scenario possible. Advanced AI capable of predictive and decision-making capabilities is built using big data processing (which relies on cloud computing) and mathematical formulas (coding). We need cloud computing and coding to build advanced neural networks. The courts consider all of these processes as implementing only a generic computer to act in a conventional way. **The problem is that our lawmakers are assuming that denying the patenting process to the machine learning phase is not equivalent to cutting off innovation** in machine execution. There seems to be some notion that we can bypass the big data processing and mathematical formulas stage, but once we get to the good machines – those really smart ones that can find cancer – well, we can patent those. **That assumption is flawed** because we might never get to the smart machines for the following reasons: 1) The commercialization problem: Effective machine learning modules need to be implemented into commercialized products in order to be viable. In the autonomous vehicle case, AI machine learning modules need to be implemented in existing non-autonomous vehicles first. We cannot expect to have a programmer feed scenarios to the autonomous vehicle brain and expect that brain to be any good. The brain needs to encounter the unquantifiable real-world scenarios of road navigation in order for it to safely direct the vehicle to make that left turn at the next light. It's no secret that companies are in competition with one another, and they do not want to disclose their inventions through commercial use just for it to be pawned off by their competitors, especially inventions that will require years of research and development investment like building a smart self-driving machine. Subject matter eligibility denial discourages these types of investments and further downstream investments. 2) The joint collaboration problem: Radiologists do not code! Even if they do, they're probably bad and incredibly expensive. But radiologists understand imaging. When radiologists collaborate with programmers and coders, together they can build machine learning modules for digitally labeling vast amounts of imaging data that is needed to develop advanced imaging AI in healthcare. We need joint collaborations between members of different technological sectors in order to build and implement AI across different sectors. These joint collaborators want to preemptively establish the ownership of their outputs. Our subject matter eligibility laws can discourage joint collaborations by inserting a blind spot in these deals.

F. US leadership is not guaranteed. China is at the gate and Congressional action to essential prevent our decline

Robin **Kelly,** 2nd Congressional District, U.S. Congress (D), September 22, **2020,** "US Leadership in AI Is Not Guaranteed, But It's Possible. Here's How," https://robinkelly.house.gov/media-center/editorials/us-leadership-ai-not-guaranteed-its-possible-heres-how, Accessed May 12, 2024

The United States is the global leader in artificial intelligence. We have an innovative private sector, world class universities and remain the top destination for international AI talent**. However, American leadership is no longer guaranteed**. In fact, Eric Schmidt and Bob Work, the chair~~man~~ and vice chair~~man~~ of the congressionally established National Security Commission on AI (NSCAI), wrote, **"[T]he United States is in danger of losing its global leadership in AI and its innovation edge." The Chinese Communist Party is the biggest threat to America's leadership in this realm. The CCP's strategic aims include becoming the next world power by 2049 and the global AI leader by 2030. In China, AI fuels techno-authoritarianism**. The U.S.-China Economic and Security Review Commission's 2019 report found that the CCP is positioning Chinese firms to become the next AI leaders through "government intervention, market structure and construction of AI enabling infrastructure." **Through congressional action, we can sustain American leadership and continue fostering innovation**. As the former chair~~man~~ and ranking member of the Information Technology Subcommittee of the House Committee on Oversight and Government Reform, we learned three things: The federal government can accelerate innovation; use of modern technology within federal departments and agencies empowers public servants to create value for the taxpayer; and, rapid technological change creates societal trade-offs. We've used these three findings to inform and shape a national AI strategy that allows America to take advantage of technology in a responsible and effective way that reflects our values.

G. Loss of leadership on emerging technology causes nuclear transition wars in Taiwan and Eastern Europe

Matthew **Kroenig** is Associate Professor of Government and Foreign Service at Georgetown University and Deputy Director for Strategy in the Scowcroft Center for Strategy and Security at the Atlantic Council **and** Bharath **Gopalaswamy** is the director of the South Asia Center at the Atlantic Council. He holds a PhD in mechanical engineering, November 12, **2018**, "Will disruptive technology cause nuclear war?", Bulletin of the Atomic Scientists, https://thebulletin.org/2018/11/will-disruptive-technology-cause-nuclear-war/, Accessed 5-12-2024

Rather, we should think more broadly about how new technology might affect global politics, and, for this, it is helpful to turn to scholarly international relations theory. The dominant theory of the causes of war in the academy is the "**bargaining model** of war." This theory identifies **rapid shifts** in the balance of power as a **primary cause of conflict.**

International politics often presents states with conflicts that they can **settle through peaceful bargaining**, but **when bargaining breaks down, war results**. **Shifts** in the balance of power are problematic because they **undermine effective bargaining**. After all, **why agree to a deal today if your bargaining position will be stronger tomorrow?** And, a clear understanding of the military balance of power can contribute to peace. (Why start a war you are likely to lose?) But **shifts in the balance of power muddy understandings of which states have the advantage.** You may see where this is going. **New technologies threaten to create potentially destabilizing shifts in the balance of power.** For decades, stability in Europe and Asia has been supported by US military power. In recent years, however, the balance of power in Asia has begun to shift, as China has increased its military capabilities. Already, Beijing has become more assertive in the region, claiming contested territory in the South China Sea. And the results of Russia's military modernization have been on full display in its ongoing intervention in Ukraine. Moreover, **China may have the lead over the United States in emerging technologies that could be decisive for the future of military acquisitions and warfare**, including 3D printing, hypersonic missiles, quantum computing, 5G wireless connectivity, and artificial intelligence (AI). And Russian President Vladimir Putin is building new unmanned vehicles while ominously declaring, "Whoever leads in AI will rule the world**." If China or Russia are able to incorporate new technologies into their militaries before the United States, then this could lead to the kind of rapid shift in the balance of power that often causes war.**

If Beijing believes emerging technologies provide it with a newfound, local military advantage over the United States, for example, **it may be more willing than previously to initiate conflict over Taiwan. And if Putin thinks new tech has strengthened his hand, he may be more tempted to launch a Ukraine-style invasion of a NATO member. Either scenario could bring these nuclear powers into direct conflict with the United States, and once nuclear armed states are at war, there is an inherent risk of nuclear conflict through limited nuclear war strategies, nuclear brinkmanship, or simple accident or inadvertent escalation**. This framing of the problem leads to a different set of policy implications. The concern is not simply technologies that threaten to undermine nuclear second-strike capabilities directly, but, rather, any technologies that can result in a meaningful shift in the broader balance of power. And the solution is not to preserve second-strike capabilities, but to preserve prevailing power balances more broadly.

Case Extensions

Inherency / Harms Extension

Inherency – SQ patent regime fails

Current patent laws are insufficient to account for AI creations

Briana **Hopes**, J.D., Tulane University Law School and Senior Managing Editor, **2021**, "Rights for Robots? U.S. Courts and Patent Offices Must Consider Recognizing Artificial Intelligence Systems as Patent Inventors," Vol. 23, Tulane Journal of Technology and Intellectual Property, https://journals.tulane.edu/TIP/article/view/3652/3434, Accessed May 10, 2024

There is not much law on AI-generated inventions for patents.32 Currently, **most jurisdictions require a natural person to be listed as an inventor for a patent application.**33 This requirement is meant to "protect and acknowledge the rights of human inventors." 34 **However, most inventors of these patents do not own their patents; most are owned by businesses**.35 **The U.S. patent laws require a natural person to be listed to "ensure that people receive due credit.**"36 Nevertheless, **these patent laws were enacted without considering the future possibility of machines creating their own inventions**.37

USPTO policy is to exclude AI inventorship, despite advances in autonomous creation

David V. **Sanker**, Ph.D., J.D., Reg. No 56,242, March 12, **2020**, "Response to Question #4," USPTO, https://www.uspto.gov/sites/default/files/documents/David-Sanker_RFC-84-FR-44889.pdf, Accessed May 3, 2024

As AI progresses, the USPTO will have to grapple with the issue of non-human owners and inventors in order to ensure compliance with the constitutional goals of patent law. AI systems have already demonstrated the ability to pursue smart and creative processes that demonstrate intelligence, creativity, and inventiveness. [1]. **Current AI systems have created challenges to the existing legal framework by demonstrating the ability to generate inventions without human intervention while satisfying the legal requirements typically expected from a human inventor**. [2]. The USPTO is currently facing new challenges in evaluating AI-related patents. One such example is the task of evaluating the first ever patent filed in the name of an AI inventor named Dabus. This patent application has satisfied all of the primary requirements for patent eligibility and stands to challenge the issue of whether AI can be named as an inventor. [3]. **Scholars have recognized the urgent need for the USPTO to consider such inventions created by non-human inventors in order to incentivize the use and development of AI for the advancement of humanity. Policy as it stands today has left authors and inventors with no choice but to "merely side-step the question of AI ownership by selecting not to disclose the use of AI in their registrations and applications."** [4].

Current copyright law cannot account for new AI creations

George **Lawton**, Staff Writer, August 10, **2023,** "Is AI-generated content copyrighted?," TechTarget, https://www.techtarget.com/searchcontentmanagement/answer/Is-AI-generated-content-copyrighted, Accessed May 9, 2024

Copyright law, as it currently stands, was written at a time when humans were directly involved in fair use practices, like citing sources and creating derivative works, which is copyrighted work that comes from other copyrighted work. New AI models can scan copyright-protected content at scale to distill an image's style, a novel's plot or a program's logic. Once trained on protected content, these AI models can generate new content different enough from the original that some might consider it fair use.

Current IP laws are out of date. They aren't designed to account for AI inventorship

Ryan **Abbott**, PhD. Candidate, **2020**, "The Reasonable Robot: Artificial Intelligence and the Law," Submitted for the Degree of Doctor of Philosophy School of Law Faculty of Arts and Social Sciences University of Surrey, https://s3.eu-central-1.amazonaws.com/eu-st01.ext.exlibrisgroup.com/44SUR_INST/storage/alma/9E/76/B7/0B/28/D5/FE/29/F7/98/18/79/76/4D/11/62/Abbott_Thesis.pdf?response-content-type=application%2Fpdf&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Date=20240506T030032Z&X-Amz-SignedHeaders=host&X-Amz-Expires=119&X-Amz-Credential=AKIAJN6NPMNGJALPPWAQ%2F20240506%2Feu-central-1%2Fs3%2Faws4_request&X-Amz-Signature=e82985315eaa6c4c3e7457dfcb25be5ae8cf1b620f6ad7ee776d74eb34678ef7, Accessed May 5, 2024

It should come as little surprise that AI has been autonomously generating artistic works and scientific inventions for decades. **The law provides legal protections for human actors for many types of intellectual property** – copyrights for books and music, patents for certain types of discoveries – **but the law remains quite stubborn in its protection when AI creates what we think of as "products of the mind."** The fourth chapter in this book discusses intellectual property law, the branch of law concerning property rights in certain intangible creations. Legally, it is unclear whether AI-generated works are eligible for intellectual property protection and who would own them if they are. **In most cases ownership rights initially go to an author or inventor, and most jurisdictions require the author or inventor to be a natural person**. Authors and inventors do have the ability to transfer their rights to others; this can happen automatically when employees create something within the scope of employment. **As a matter of fact, most patents are owned not by human inventors but artificial persons in the form of businesses. Still, the requirement that a natural person be listed as an author or inventor ensures, even when companies own the intellectual property rights, the right of human creators to be acknowledged. These laws were not designed with AI in mind and have not yet largely been applied to AI-generated works where there is no person who qualifies as an author or inventor.**

Inherency – AI patents denied / humans only

IP legal precedence affirms a humans-only standard for protection

Ernest **Fok,** JD, Santa Clara University School of Law, **2021,** "CHALLENGING THE INTERNATIONAL TREND: THE CASE FOR ARTIFICIAL INTELLIGENCE INVENTORSHIP IN THE UNITED STATES," Santa Clara Journal of International Law, https://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=1241&context=scujil, Accessed May 10, 2024

Current notions of conception are confined exclusively to natural persons because AI has no mind to complete the "mental act" required to invent or discover.31 Moreover, **the Supreme Court has more recently interpreted patent-eligible subject matter as "anything under the sun that is made by** ~~man,"~~ suggesting **only humans** can generate inventions. 32 Furthermore, **the Dictionary Act provides that "[i]n determining the meaning of any Act of Congress ... the [word] ... 'individual,' shall include every infant member of the species homo sapiens."**33 Likewise, Congress has stated that corporations cannot be named as an inventor. 34 Lastly, the Federal Circuit stated that "only natural persons may be 'inventors"'35 and that "[p]eople conceive, not companies," suggesting legal persons such as businesses are not capable of conception. 36 **Legal precedence so far only supports human inventorship**. From an academic perspective, several scholars have emphasized that exclusive human inventorship is critical. One view is that inventorship is a moral right where inventors have a right to receive credit for their works.37 This is seen as complementary to the utilitarian view of patents as rewards for inventors that bravely "releas[e] intellectual property to the world."38 It supports the social norm that drives inventors to patent.39 For example, the patent itself acts as a credential for the inventor to signal to society that the inventor of the patent is worthy of respect.40 These rights do not apply to artificial intelligence systems that lack consciousness and self-awareness.41

AI cannot be the "inventor" alone

David V. **Sanker**, Ph.D., J.D., Reg. No 56,242, March 12, **2020**, "Response to Question #2," USPTO, https://www.uspto.gov/sites/default/files/documents/David-Sanker_RFC-84-FR-44889.pdf, Accessed May 3, 2024

For all types of AI inventions, humans can be inventors or co-inventors. Even when AI is an inventor, one or more humans may be identified as co-inventors. For example, one or more people may identify a problem to be solved, and may identify one or more general approaches to solving the problem. The **people may then specify general parameters for a solution, and have an AI system resolve implementation details or evaluate the multiple options.**

The Supreme Court has already determined that "individual" in the U.S. Patent Act means "natural persons"

Briana **Hopes**, J.D., Tulane University Law School and Senior Managing Editor, **2021**, "Rights for Robots? U.S. Courts and Patent Offices Must Consider Recognizing Artificial Intelligence Systems as Patent Inventors," Vol. 23, Tulane Journal of Technology and Intellectual Property, https://journals.tulane.edu/TIP/article/view/3652/3434, Accessed May 10, 2024

The word "person" is commonly used throughout the Constitution, typically to describe natural persons.62 It is up to the courts to allow a broader interpretation of the word "person" in an Act. **The U.S. Patent Act uses the term "individual" and "inventor" throughout to describe the rights granted to the inventor of a paten**t.63 Section 100(f) defines the term inventor as "the individual or, if a joint invention, the individuals collectively who invented or discovered the subject matter of the invention."" **The Act, however, does not define the term "individual" and who is deemed as an individual. The United States Supreme Court has extended rights, protections, and liabilities to those it deems as an "individual" outside of natural persons.** 65 For these inquiries, when a statute does not define a term, the Court typically looks first to the word's ordinary meaning.66 **The Court** then looks to the words of the statute in question to determine whether Congress's intended to include that meaning.67 For example, **in Mohamad v. Palestinian Authority**, the Court **had to determine whether the word "individual" written in the** Torture Victim Protection Act of 1991 **(TVPA) authorized a cause of action against an organization**.68 **Based on their analysis of the ordinary meaning of the term "individual," the Court held that the term "individual" used in the TVPA encompassed only natural persons and therefore did not impose liability against organizations.** 69 Although Mohamad is not an intellectual property case or related to the interpretation of the Patent Act, the opinion provides a thorough explanation of how the Court decides a statutory interpretation issue, specifically, the meaning of the word "individual" as used in an Act of Congress. In that case, the Supreme Court looked to the Oxford English Dictionary, which defines "individual" to ordinarily mean "a human being, a person." 70 **The Court further emphasized that when the term individual is used in our everyday speak such as "the individual left the room" or "the individual went to the store," the term is "referring unmistakably to a natural person."** 71 It was then noted that the Court itself routinely uses "individual" to denote a natural person and particularly when distinguishing between a natural person and corporation.72

Only human authored works are eligible for copyrights

George **Lawton**, Staff Writer, August 10, **2023,** "Is AI-generated content copyrighted?," TechTarget, https://www.techtarget.com/searchcontentmanagement/answer/Is-AI-generated-content-copyrighted, Accessed May 9, 2024

Thus far, the Copyright Office, in line with existing case law, has explained that, for a work to be afforded copyright protection in the U.S., it must have a human author. Yet, Siegel said he is not sure what that means in the world of AI. "If the only human involvement is the input of a chat prompt into ChatGPT, for example, one cannot obtain copyright protection for the raw result of that prompt," he said. On the other hand, if a user inputs a prompt into an AI tool, gets a response and then modifies the result in creative ways, that can potentially result in content afforded copyright protection. However, only human-authored parts of the work can be copyrighted.

Copyright law is anthropocentric

Patrick **Zurth**, LL.M. (Stanford). Postdoctoral Fellow at the Chair for Private Law and Intellectual Property Law with Information- and IT-Law (GRUR-chair) at Ludwig Maximilian University of Munich, Spring, **2021,** "ARTIFICIAL CREATIVITY? A CASE AGAINST COPYRIGHT PROTECTION FOR AI-GENERATED WORKS," 25 UCLA J. L. & Tech. UCLA Journal of Law & Technology, https://www.kiip.re.kr/webzine/2203/file/KIIP43_file3.pdf, Accessed May 9, 2024

Regardless of the legal status quo in the United States, it is to be examined whether the human creation requirement should be abolished, or the "work made for hire" doctrine should be more generously interpreted for policy reasons. Copyright law is not only anthropocentric but also "intended to motivate the creative activity of authors and inventors."47 Its "ultimate aim is ... to stimulate artistic creativity for the general public good."48 **According to the U.S. Supreme Court, the originality requirement in the Copyright Act**49 **necessitates "that the author make the selection or arrangement independently** (i.e., without copying that selection or arrangement from another work), and that it display some minimal level of creativity."50 Similarly, the ECJ requires that an author "express his creative abilities in the production of the work by making free and creative choices."51 The Chinese court case discussed in Part I also took into account a "creative process" and based its argument on adjudging a creative act.52

The status quo is anthropocentric. AI created works are denied USPTO protections

Patrick **Zurth**, LL.M. (Stanford). Postdoctoral Fellow at the Chair for Private Law and Intellectual Property Law with Information- and IT-Law (GRUR-chair) at Ludwig Maximilian University of Munich, Spring, **2021,** "ARTIFICIAL CREATIVITY? A CASE AGAINST COPYRIGHT PROTECTION FOR AI-GENERATED WORKS," 25 UCLA J. L. & Tech. UCLA Journal of Law & Technology, https://www.kiip.re.kr/webzine/2203/file/KIIP43_file3.pdf, Accessed May 9, 2024

Despite all the variations in the world's multitude of copyright regimes, a common thread emerges: copyright is based on an anthropocentric perspective. Authors are considered to be human. In the United States, this has always been the courts' understanding of the U.S. Constitution's wording: "By securing for limited Times to Authors ... the exclusive Right to their respective Writings."11 Recently, in a widely noted decision, the U.S. Court of Appeals for the Ninth Circuit dismissed a copyright infringement claim brought by an institution on behalf of a monkey that sought to assert rights in a self-clicked photograph, thereby affirming authorship as a right exclusive to humans.12 Furthermore, **the U.S. Copyright Office requires human authorship**13 and "will not register works produced by a machine or mere mechanical process that operates randomly or automatically without any creative input or intervention from a human author."14 Hence, the proposition that the U.S. Copyright Act does not require human authorship, as some proponents of copyright protection for AI products contend,15 appears to be a *4 minority view, not founded in case law or legal practice.16 **It is clear that Congress did not intend to grant intellectual property rights to machines**.17 The situation is even more unambiguous in Europe, where works are described as an "author's own intellectual creation." The European Directive on computer programs stipulates that a "computer program shall be protected if it is original in the sense that it is the author's own intellectual creation. No other criteria shall be applied to determine its eligibility for protection."18 The directive on databases as well as a directive on certain copyright aspects contain the same provision.19 Recital 16 of the latter directive further clarifies that a "photographic work ... is to be considered original if it is the author's own intellectual creation reflecting his personality, no other criteria such as merit or purpose being taken into account."20 Based on these provisions, the European Court of Justice (ECJ) unified the protection requirements for all works, characterizing a work as an "author's own intellectual creation"21 and explaining that "the author ... can stamp the work created with his 'personal touch,'"22 thereby implying human authorship as a prerequisite.23 This position corresponds with the legal status quo in Switzerland24 as well as, for example, the prevailing *5 view in Australia25 and Japan.26 Moreover, the Berne Convention, the oldest international agreement governing copyright, implies that human authorship is necessary for copyright protection.27 The World Intellectual Property Organization (WIPO), while discussing a Model Copyright Law, considered including "computer-produced works" in that model law,28 but never actually implemented it. Additionally, many jurisdictions deny patent protection to non-human creators as well**. Both the** U.S. Patent and Trademark Office (**USPTO) and the European Patent Office** (EPO) **refuse to accept a machine as an inventor, the latter invoking an internationally applicable standard of inventors being natural persons** referring, inter alia, to the U.S. Court of Appeals for the Federal Circuit as wells as the patent offices of China, Japan, Korea, and the USA.29 Under this approach**, AI-created works remain unprotected because the outcome stems from such an independent process that it cannot be attributed to any human being**. As the algorithms improve and refine themselves, the "Human Behind the Machine" is moving more and more into the background as the AI software is operating more and more independently.30 Whether a work *6 created with the help of AI as a "computer-assisted work" is protectable depends, roughly speaking, on whether AI was only employed as a tool for implementing human decisions or acted independently.3

Advantage 1: Cyber Attacks EXTENSION

Risk increasing / Impacts

AI is revolutionizing cyber-attacks, making them faster, more lethal, and harder to detect

William **Dixon**, Head of Future Networks and Technology, World Economic Forum And Nicole Eagan, Chief Executive Officer, Darktrace, June 19, **2019,** "3 ways AI will change the nature of cyber attacks," https://www.weforum.org/agenda/2019/06/ai-is-powering-a-new-generation-of-cyberattack-its-also-our-best-defence/, Accessed 5-13-2024

The use of adversarial artificial intelligence will impact the security landscape in three key ways:

1 - Impersonation of trusted users. AI attacks will be highly tailored yet operate at scale. These malwares will be able to learn the nuances of an individual's behaviour and language by analysing email and social media communications. They will be able to use this knowledge to replicate a user's writing style, crafting messages that appear highly credible. Messages written by AI malware will therefore be almost impossible to distinguish from genuine communications. As the majority of attacks get into our systems through our inboxes, **even the most cyber-aware computer user will be vulnerable.**

2 - Blending into the background. Sophisticated threat actors can often maintain a long-term presence in their target environments for months at a time, without being detected. They move slowly and with caution, to evade traditional security controls and are often targeted to specific individuals and organizations. **AI will** also **be able to learn the dominant communication channels and the best ports and protocols to use to move around a system, discretely blending in with routine activity.** This ability to disguise itself amid the noise will mean that it is able to expertly spread within a digital environment, and stealthily compromise more devices than ever before. AI malware will also be able to analyse vast volumes of data at machine speed, rapidly identifying which data sets are valuable and which are not. **This will save the (human) attacker a great deal of time and effort. 3 - Faster attacks with more effective consequences.** Today's most sophisticated attacks require skilled technicians to conduct research on their target and identify individuals of interest, understand their social network and observe over time how they interact with digital platforms. In tomorrow's world, **an offensive AI will be able to achieve the same level of sophistication in a fraction of the time, and at many times the scale.**

Not only will AI-driven attacks be much more tailored and consequently more effective, their ability to understand context means they will be even harder to detect. Traditional security controls will be impotent against this new threat, as they can only spot predictable, pre-modelled activity**. AI is constantly evolving and will become ever-more resistant to the categorization of threats that remains fundamental to the modus operandi of legacy security approaches.**

Cyberattacks and disinformation campaigns will jeopardize U.S. military hegemony

Eric **Schmidt** is the former CEO and chair of Alphabet **And** Robert O. **Work** served as the 32nd U.S. deputy secretary of defense, December 5, **2022**, "How to Stop the Next World War," The Atlantic, https://www.theatlantic.com/ideas/archive/2022/12/us-china-military-rivalry-great-power-war/672345/, Accessed 12-22-2022

While **many emerging technologies will make conflict** more transparent, others will make it **dangerously opaque. Deepfakes will give our adversaries the power to disseminate sophisticated falsehoods and even jeopardize military operations. The scale and speed of cyberattacks will increase, allowing our opponents to hamper our communication networks and contaminate or manipulate data. Even if we were able to detect an attack as it happened**—a big if—**we might not have time to effectively respond. Manipulation and deception have always been part of warfare, but new technologies will supercharge them.**

Advantage 2: Innovation EXTENSION

AI inventorship excluded now – Human inventors

Current patent law requires only humans as inventors, which cannot account for the rise of AI creations

Solidity Law, a forward-thinking legal practice specializing in the technologies driving the Fourth Industrial Revolution, June 26, **2023**, "Rethinking IP Laws for the AI Age: A Congress's Guide," LinkedIn, https://www.linkedin.com/pulse/rethinking-ip-laws-ai-age-congresss-guide-solidity-law?trk=organization_guest_main-feed-card_reshare_feed-article-content, Accessed May 3, 2024

Intellectual Property (**I.P.) laws have long been the cornerstone of innovation, providing legal protection for creators and inventors. These laws,** encompassing patents, copyrights, trademarks, and trade secrets, **have fostered creativity and economic growth. However, as we delve deeper into the digital age, it is becoming increasingly clear that these traditional I.P. laws need help to keep pace with rapid technological advancements. The existing I.P. laws** were designed in an era where human ingenuity was the primary source of innovation. They **are predicated on the assumption that behind every invention or creation, there is a human mind at work. However, the rise of** Artificial Intelligence (A.I.) and other **emerging technologies challenges this assumption. Today, A.I. algorithms can generate art, compose music, write articles, and even design innovative products. This blurring of lines between human and machine-generated creations creates a legal conundrum.** Who owns the I.P. rights to a piece of art created by an A.I.? Can a machine be an inventor?

AI Inventorship = Innovation

Now is a key time for the U.S. to capitalize on innovation from AI inventorship

Ernest **Fok,** JD, Santa Clara University School of Law, **2021,** "CHALLENGING THE INTERNATIONAL TREND: THE CASE FOR ARTIFICIAL INTELLIGENCE INVENTORSHIP IN THE UNITED STATES," Santa Clara Journal of International Law, https://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=1241&context=scujil, Accessed May 10, 2024

The U.S. patent system has the potential to strongly benefit from recognizing inventing-AI as inventors. It would enable the U.S. patent regime to develop a competitive edge among its peers, encourage investment and use of inventing-AI, and shift the patent value towards PEs to encourage behavior that maximizes the social utility of patents. **Though the challenges and potential negative consequences casts a shadow on whether AI inventorship is the best avenue to promote the Constitutional purpose behind patent rights, the U.S. may not have a similar prime opportunity to capitalize on a technology that will continue to see growth and controversy in the patent space**.

AI are inventors. We're on the brink of an AI innovation revolution that will usher in massive economic growth. AI inventorship would jumpstart innovation

Ryan **Abbott**, PhD. Candidate, **2020**, "I THINK, THEREFORE I INVENT: CREATIVE COMPUTERS AND THE FUTURE OF PATENT LAW" (2016) in

"The Reasonable Robot: Artificial Intelligence and the Law," Submitted for the Degree of Doctor of Philosophy School of Law Faculty of Arts and Social Sciences University of Surrey, https://s3.eu-central-1.amazonaws.com/eu-st01.ext.exlibrisgroup.com/44SUR_INST/storage/alma/9E/76/B7/0B/28/D5/FE/29/F7/98/18/79/76/4D/11/62/Abbott_Thesis.pdf?response-content-type=application%2Fpdf&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Date=20240506T030032Z&X-Amz-SignedHeaders=host&X-Amz-Expires=119&X-Amz-Credential=AKIAJN6NPMNGJALPPWAQ%2F20240506%2Feu-central-1%2Fs3%2Faws4_request&X-Amz-Signature=e82985315eaa6c4c3e7457dfcb25be5ae8cf1b620f6ad7ee776d74eb34678ef7, Accessed May 5, 2024

An innovation revolution is on the horizon.1 Artificial intelligence **("AI") has been generating inventive output for decades, and now the continued and exponential growth in computing power is poised to take creative machines from novelties to major drivers of economic growth.**2 A creative singularity in which computers overtake human inventors as the primary source of new discoveries is foreseeable. **This phenomenon poses new challenges to the traditional paradigm of patentability.** Computers already are generating patentable subject matter under circumstances in which the computer, rather than a human inventor, meets the requirements to qualify as an inventor (a phenomenon that this Article refers to as "computational invention").3 Yet, it is not clear that a computer could be an inventor or even that a computer's invention could be patentable.4 There is no statute addressing computational invention, no case law directly on the subject, and no pertinent Patent Office policy.5 These are important issues to resolve. Inventors have ownership rights in their patents, and failure to list an inventor can result in a patent being held invalid or unenforceable. Moreover**, government policies encouraging or inhibiting the development of creative machines will play a critical role in the evolution of computer science and the structure of the** research and development **("R&D") enterprise**.6 Soon computers will be routinely inventing, and it may only be a matter of time until computers are responsible for most innovation. This Article addresses whether a computer could and should be an inventor for the purposes of patent law as well as whether computational inventions could and should be patentable.7 It argues that **computers can be inventors because although AI would not be motivated to invent by the prospect of a patent, computer inventorship would incentivize the development of creative machines**.8

Computational inventions are happening now and will only become more common. Recognizing AI inventorship would incentivize creative AI and broader innovation

Ryan **Abbott**, PhD. Candidate, **2020**, "Hal the Innovator: Big Data and Its Use by Artificial Intelligence" in "The Reasonable Robot: Artificial Intelligence and the Law," Submitted for the Degree of Doctor of Philosophy School of Law Faculty of Arts and Social Sciences University of Surrey, https://s3.eu-central-1.amazonaws.com/eu-st01.ext.exlibrisgroup.com/44SUR_INST/storage/alma/9E/76/B7/0B/28/D5/FE/29/F7/98/18/79/76/4D/11/62/Abbott_Thesis.pdf?response-content-type=application%2Fpdf&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Date=20240506T030032Z&X-Amz-SignedHeaders=host&X-Amz-Expires=119&X-Amz-Credential=AKIAJN6NPMNGJALPPWAQ%2F20240506%2Feu-central-1%2Fs3%2Faws4_request&X-Amz-Signature=e82985315eaa6c4c3e7457dfcb25be5ae8cf1b620f6ad7ee776d74eb34678ef7, Accessed May 5, 2024

Big data and its use by artificial intelligence is disrupting innovation and creating new legal challenges. For example, **computers engaging in** what IBM terms **"computational creativity"** (n.d.) **are able to use big data to innovate in ways historically entitled to patent protection. This can occur under circumstances in which an artificial intelligence, rather than a person, meets the requirements to qualify as a patent inventor** (a phenomenon I refers to as "computational invention"). Yet it is unclear whether a computer can legally be a patent inventor, and it is even unclear whether a computational invention is patentable. There is no law, court opinion, or government policy that directly addresses computational invention, and language in the Patent Act requiring inventors to be individuals1 and judicial characterizations of invention as a "mental act" may present barriers to computer inventorship. Definitively resolving these issues requires a determination of whether a computer qualifies as an "inventor" under the Patent and Copyright Clause of the Constitution: "The Congress shall have the power … to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries."2 **Whether computers can legally be inventors is of critical importance for the computer and technology industries and, more broadly, will affect how future innovation occurs. Computational invention is already happening, and it is only a matter of time until it is happening routinely**. In fact, it may be only a matter of time until computers are responsible for the majority of innovation and potentially displacing human inventors. This chapter argues that **a dynamic interpretation of the Patent and Copyright Clause permits computer inventors. This would incentivize the development of creative artificial intelligence and result in more innovation for society as a whole**. However, even if computers cannot be legal inventors, it should still be possible to patent computational inventions. This is because recognition of inventive subject matter can qualify as inventive activity.3 Thus, individuals who subsequently "discover" computational inventions may qualify as inventors. Yet as this chapter will discuss, this approach may be inefficient, unfair, and logistically challenging.

Continuing to deny AI patents slows innovation

Erika K. **Carlson,** Senior Technology Writer, **2020,** "Artificial Intelligence Can Invent But Not Patent—For Now," Engineering6(2020), pp. 1212–1213http://www.wncyip.com/UploadFiles/20231010/20231010140242988.pdf, Accessed May 4, 2024

The patent system was designed to provide incentives for innovation, said Matt Hervey, an intellectual property specialist and head of AI at the law firm Gowling WLG in London, UK. Creating an innovative new product and bringing it to market can be an expensive process. A patent gives the patent holder a monopoly on the invention for a limited time to make some money back on their investment. **''Patent protection is also a social contract under which the patentee gains a temporary monopoly in exchange for making public how the invention works**," Hervey said. **''If inventions by AI remain unpatentable, it would encourage companies to use trade secrets instead of patents and the related knowledge would not be shared and the advance of innovation could be slowed."**

Treating AI creations as patentable would incentivize innovation

Ryan **Abbott**, PhD. Candidate, **2020**, "I THINK, THEREFORE I INVENT: CREATIVE COMPUTERS AND THE FUTURE OF PATENT LAW" (2016) in

"The Reasonable Robot: Artificial Intelligence and the Law," Submitted for the Degree of Doctor of Philosophy School of Law Faculty of Arts and Social Sciences University of Surrey, https://s3.eu-central-1.amazonaws.com/eu-st01.ext.exlibrisgroup.com/44SUR_INST/storage/alma/9E/76/B7/0B/28/D5/FE/29/F7/98/18/79/76/4D/11/62/Abbott_Thesis.pdf?response-content-type=application%2Fpdf&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Date=20240506T030032Z&X-Amz-SignedHeaders=host&X-Amz-Expires=119&X-Amz-Credential=AKIAJN6NPMNGJALPPWAQ%2F20240506%2Feu-central-1%2Fs3%2Faws4_request&X-Amz-Signature=e82985315eaa6c4c3e7457dfcb25be5ae8cf1b620f6ad7ee776d74eb34678ef7, Accessed May 5, 2024

More ambitiously, **treating computational inventions as patentable and recognizing creative computers as inventors would be consistent with the Constitutional rationale for patent protection.**183 **It would encourage innovation under an incentive theory. Patents on computational inventions would have substantial value independent of the value of creative computers; allowing computers to be listed as inventors would reward human creative activity upstream from the computer's inventive act. Although AI would not be motivated to invent by the prospect of a patent, it would motivate computer scientists to develop creative machines**. Financial incentives may be particularly important for the development of creative computers because producing such software is resource intensive.184 Though the impetus to develop creative AI might still exist if computational inventions were considered patentable but computers could not be inventors, the incentives would be weaker owing to the logistical, fairness, and efficiency problems such a situation would create.

IP protections for AI are essential to AI companies obtaining a competitive edge

Douglas R. **Nemec** is head of Skadden's Intellectual Property Litigation Group, **And** Laura M. **Rann,** Associate, Intellectual Property Litigation, **2023,** "AI and Patent Law: Balancing Innovation and Inventorship," Skadden Insights, https://www.skadden.com/insights/publications/2023/04/quarterly-insights/ai-and-patent-law, Accessed May 6, 2024

The issue of inventorship in patent law for AI-created inventions remains of particular importance to companies that develop and use AI technology. The ability to obtain a patent on an invention is a critical means for businesses to protect their intellectual property and maintain a competitive edge in the marketplace. But the requirement that an "inventor" be a natural person is at odds with the reality of AI-generated inventions. As the conversation around AI inventorship unfolds, companies should be aware of alternative ways to protect their AI-generated inventions, such as using trade secrets. Similar developments in copyright law denying protection for purely AI-developed works only add to the complications that owners face in obtaining adequate IP protections for AI creations. The potential implications of AI inventorship on the future of innovation and creativity in business are enormous and will be felt by companies that rely on AI technology to drive business operations.

Excluding AI inventorship sacrifices innovation

Tim W. **Dornis,** Ph.D./Dr. iur. (Tuebingen/Germany), J.S.M. (Stanford University), attorney-at law (New York), Professor of Law, Leuphana Law School, **2020,** "AI Creativity: Emergent Works and the Void in Current Copyright Doctrine," 22 Yale J.L. & Tech. 1 (2020), https://yjolt.org/ai-creativity-emergent-works-and-void-current-copyright-doctrine, Accessed May 9, 2024

As a consequence of the rapid development of AI technology, so called emergent works (i.e., products of creative content created by autonomous AI) will increasingly be part of our socioeconomic, cultural, and political reality. So far, courts have not been confronted with the issue of protection for emergent works, and lawmakers still seem unaware of the issue. However, it may not be long before the first disputes reach the courts. **Under current doctrine, no copyright protection exists for want of a human creator. The system of related and neighboring rights protection, such as for photographs or databases, offers a fragmentary regime. And unfair competition doctrine is patchy at best. This regulatory void is problematic. First of all, economic analysis indicates a need for at least basic protection of AI creativity.** Indeed, **timely legislative action is required in order to provide an ecosystem that is conducive to AI innovation. Upon closer scrutiny, regulatory inactivity is especially irritating, for it cannot be justified by any of the traditional doctrinal counter-arguments against the extension of protection to new subject matter**. The necessary black-letter amendment of the lex lata could best be effectuated by introducing a neighboring right for emergent works. The most intricate issues to be resolved would then be the term of protection, the transferability of the right, and the determination of who is the right-holder. Until lawmakers have acted, the fallback regime is unfair competition law. Under that system, emergent work protection may best be achieved by an extension of misappropriation doctrine.

There are lots of examples of autonomous AI art and that will only increase. Requiring human inventors sacrifices innovation opportunities

Tim W. **Dornis,** Ph.D./Dr. iur. (Tuebingen/Germany), J.S.M. (Stanford University), attorney-at law (New York), Professor of Law, Leuphana Law School, **2020,** "AI Creativity: Emergent Works and the Void in Current Copyright Doctrine," 22 Yale J.L. & Tech. 1 (2020), https://yjolt.org/ai-creativity-emergent-works-and-void-current-copyright-doctrine, Accessed May 9, 2024

Moreover, **the changes that AI's evolution and proliferation will bring remain unforeseen. While some topics are in the spotlight**— such as search algorithms, nursing robots, and self-driving cars— **many aspects are still being discussed superficially**, if at all. **This particularly concerns the relevance of AI for innovative and creative activities and production, a field that is regulated by** intellectual property **(IP) law—but only insofar as human beings act as innovators, authors, or creators.** Legal theory has only hesitantly accepted the challenges that the advent of AI will bring to IP. With respect to the protection of artificial creativity, the regulatory void is indeed dramatic. Copyright law is virtually devoid of rules and doctrines on AI. To mention but a few of the most pertinent questions: Can AI be "creative" in the sense that humans are? In other words, can a robot "create" a work of music, art, or literature? If yes, should works created by AI enjoy protection that is comparable or even equivalent to human-made works? How long should such protection last? And last but not least, who should own rights in AI-generated works? These questions are far from fictional. **Examples of so-called generative art or algorithmic art—i.e., works of art that are autonomously created by AI apparatuses—abound.**5 A very early example is AARON, a computer program from the 1970s that creates high-quality artistic paintings, many of which are indistinguishable from human-made art.6 AARON's modern counterparts are no less impressive. Recently, an artificial neural network became famous for creating an algorithmic painting in the style of eighteenth-century portraits. The auction of an effigy of one "Edmond de Belamy" at Christie's brought $432,500—more than forty times the initially expected price.7 In the field of music, the completion of unfinished symphonies of Franz Schubert (symphony no. 8) and Ludwig van Beethoven (symphony no. 10) by computer algorithms caught public attention.8 Finally, ever more kinds of literature are being written with the help of so-called natural language generation. Such AI is able to directly transform raw data into readable texts, such as business and stock market reports, weather forecasts, and newspaper articles.9 There is no doubt that had humans created any of these emanations of AI activity, copyright protection would exist. As these examples illustrate, we are at the dawn of a third technological cataclysm. Unlike in the first two technological revolutions, the issue at hand is not the accelerated duplication of creative works or their ubiquitous dissemination via the web. Rather, we are on the threshold of an age of substitution of human creativity by artificial creativity. Hence, **the task that faces us is not about optimizing human output, but rather about determining** whether humankind will retain its role as creator—that is, **whether the human monopoly on artistic and informative contents will persist.** As a consequence, not only are labor markets at the brink of disruption, but, in the long run, cultural contents and the public infosphere are facing fundamental changes. At the same time, **we must not neglect the opportunities of artificial creativity. After all, AI innovation and the concomitant proliferation of creative production by AI may sooner rather than later—**and more rather than less—**contribute to our economic welfare.**

Huge economic potential

AI investments are booming now with hundreds of billions in growth potential

Ernest **Fok,** JD, Santa Clara University School of Law, **2021,** "CHALLENGING THE INTERNATIONAL TREND: THE CASE FOR ARTIFICIAL INTELLIGENCE INVENTORSHIP IN THE UNITED STATES," Santa Clara Journal of International Law, https://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=1241&context=scujil, Accessed May 10, 2024

AI inventorship has not been recognized in the U.S. despite a dramatic increase in the development and use of AI technologies. In 2017, an economic study showed that 550 start-ups using AI as a core part of their products raised $5 billion in funding with 60% of that funding going into American companies.97 Moreover, **the American Intellectual Property Law Association estimated the annual investments directly in AI technologies in 2017 reached $26-39 billion**.98 Alongside this investment**, the employment market for deep learning researchers has boomed with some researchers obtained through mergers and acquisitions being valued at nearly $10 million**.99 **AI commercialization is expected to reach $190 billion by 2025**.100

There is a strong correlation between IP protections and economic growth

Stephen **Ezell** is vice president for global innovation policy at the Information Technology and Innovation Foundation (ITIF) and director of ITIF's Center for Life Sciences Innovation, June 12, **2023**, "Losing the Lead: Why the United States Must Reassert Itself as a Global Champion for Robust IP Rights," Information Technology and Innovation Institute, https://itif.org/publications/2023/06/12/losing-the-lead-why-united-states-must-reassert-itself-as-global-champion-for-robust-ip-rights/, Accessed May 12, 2024

A related argument is that IP does little to help U.S. workers or the U.S. economy, so policymakers shouldn't waste political capital on it. According to Lawrence Summers, companies pushing for IP protection reflect "elite concerns" and don't contribute much to U.S. employment or tax revenue.45 For instance, in the United States, **the Department of Commerce has estimated that IP-intensive industries support at least 45 million jobs and contribute more than $6 trillion (38.2 percent of) U.S. gross domestic product** (GDP).46 **Likewise, the aforementioned 2021 joint EUIPO/EPO study shows a strong, positive correlation between IPR and economic performance**.47 It states that "IP-owning firms represent a significantly larger proportion of economic activity and employment across Europe," with IP-intensive industries contributing 45 percent of GDP (€6.6 trillion, or US$7.9 trillion).48 The study also shows that IP-intensive industries directly or indirectly contribute to 38.9 percent of European employment, and IP generates higher wages and greater revenue per employee, especially for SMEs.49

Economic potential for SMEs

Absent strong IP protections small and medium sized business would never get their innovation off the ground

Stephen **Ezell** is vice president for global innovation policy at the Information Technology and Innovation Foundation (ITIF) and director of ITIF's Center for Life Sciences Innovation, June 12, **2023**, "Losing the Lead: Why the United States Must Reassert Itself as a Global Champion for Robust IP Rights," Information Technology and Innovation Institute, https://itif.org/publications/2023/06/12/losing-the-lead-why-united-states-must-reassert-itself-as-global-champion-for-robust-ip-rights/, Accessed May 12, 2024

Indeed, **without IP, entrepreneurships and start-ups find it difficult to create commercially viable enterprises. Intangible assets, such as IPR, comprised approximately 84 percent of the corporate value of S&P 500 companies in 2018**.30 **For start-ups, especially those in R&D-intensive industries, this means much of the capital needed to operate is directly related to IP.31 Investors rely on IP protections to ensure the possibility of a return on their investment. Thus, without IP protection, SMEs and individuals cannot adequately prove their innovation is worth the risks associated with investing in a small or new venture.**

Tech leadership internal links

US patent laws should be expanded to recognize AI as inventors. This promotes US tech leadership

Briana **Hopes**, J.D., Tulane University Law School and Senior Managing Editor, **2021**, "Rights for Robots? U.S. Courts and Patent Offices Must Consider Recognizing Artificial Intelligence Systems as Patent Inventors," Vol. 23, Tulane Journal of Technology and Intellectual Property, https://journals.tulane.edu/TIP/article/view/3652/3434, Accessed May 10, 2024

U.S. patent laws should adapt to the realities of today's Al by expanding their definition of an inventor for the patent system. Although the DABUS team is the first to submit patent applications as an Al inventor, they will surely not be the last. If Al systems are truly inventing patentable concepts autonomously, **our laws should allow Al systems to be recognized as inventors. Expanding our patent laws to recognize Al inventors shows that the U.S. is continuing to be a leader in forward thinking and progressive technology.**

Tech leadership: China/Competition

Establishing leadership in emerging technologies like AI will allow us to outcompete China

Stephen **Ezell** is vice president for global innovation policy at the Information Technology and Innovation Foundation (ITIF) and director of ITIF's Center for Life Sciences Innovation, June 12, **2023**, "Losing the Lead: Why the United States Must Reassert Itself as a Global Champion for Robust IP Rights," Information Technology and Innovation Institute, https://itif.org/publications/2023/06/12/losing-the-lead-why-united-states-must-reassert-itself-as-global-champion-for-robust-ip-rights/, Accessed May 12, 2024

It's not too late for U.S. policymakers to reverse course and once again assert a leadership role in advancing international IP best practices. Working with like-minded allies offers U.S. policymakers the chance **to set a precedent for emerging technologies and establish a united front against the CCP. Likewise, reforming certain domestic IP policies enables America to lead by example. The result will be a more competitive American economy, more innovation, and more jobs in IP-dependent industries.**

AI innovation is essential to outcompete China and the EU

National Science Foundation, 2016, "American Leadership on Artificial Intelligence," https://www.nsf.gov/news/factsheets/Factsheet_AI_US.pdf, Accessed May 12, 2024

Artificial intelligence is impacting our everyday lives. It is the power behind smart household devices, personalized search results on Google, and digital assistants like Alexa and Siri. AI technologies are **transforming how we optimize energy usage, deliver health care and respond to roadway congestion in real time**. As an industry of the future, AI will greatly enhance business productivity, transforming the American workforce and the global economy. **The U.S. National Science Foundation is the leading federal funder of AI research** to expand our understanding of AI concepts and techniques, use-inspired studies to drive AI innovations, computing resources to empower AI researchers, and training to prepare an AI-savvy workforce. MAINTAINING THE AI EDGE **Global investments in AI research are on the rise, with China and the European Union having the largest AI investments abroad. Aligned with administration and congressional priorities, NSF's portfolio is part of a coordinated federal strategy to secure America's competitiveness in AI.**

Without strong IPR leadership China will outpace the U.S. in industrial and military output—tanks the economy

Stephen **Ezell** is vice president for global innovation policy at the Information Technology and Innovation Foundation (ITIF) and director of ITIF's Center for Life Sciences Innovation, June 12, **2023**, "Losing the Lead: Why the United States Must Reassert Itself as a Global Champion for Robust IP Rights," Information Technology and Innovation Institute, https://itif.org/publications/2023/06/12/losing-the-lead-why-united-states-must-reassert-itself-as-global-champion-for-robust-ip-rights/, Accessed May 12, 2024

Many nations, including the "Global South," would like nothing more than to see a drastically weakened global IP regime. China, in particular, is in favor of this because it enables the country to more easily steal and otherwise obtain the IP that is so necessary to its continued industrial and military advance, while developing nations get free resources Americans paid hundreds of billions of dollars to develop.

Without strong IP leadership, American allies that believe in strong IPR will have a much harder time advancing their agenda.3 And that is likely to lead to countries that want everything for free to set the agenda.4 The result is a weaker U.S. economy and less global innovation.5

Tech leadership: Economic growth

The U.S. is the AI leader now. Maintaining that lead is key since the economy has less international influence

Michael **Frank** is a senior fellow at the Wadhwani Center for AI and Advanced Technologies, Center for Strategic and International Studies (CSIS), September 22, **2023,** "US Leadership in Artificial Intelligence Can Shape the 21st Century Global Order," The Diplomat, https://thediplomat.com/2023/09/us-leadership-in-artificial-intelligence-can-shape-the-21st-century-global-order/, Accessed May 12, 2024

U.S. economic power often enticed countries to forsake independent strategic calculation. The United States' share of global GDP at the outset of the Vietnam War was 38 percent. Many countries got rich on trade with the United States. As the late economist Richard N. Cooper argued, the overwhelming empirical evidence from the time was "that communism did not work well economically – it did not deliver significantly higher standards of living to ordinary people – as became evident especially with the growing contrast between East and West Europe, between North and South Korea, and between the People's Republic of China and Taiwan and Hong Kong." China itself would famously split from the Soviet Union and align itself with the economically superior United States, with fantastic results. Today, U.S. GDP is not the same weapon that policymakers wielded to such great effect in the Cold War. **The U.S. market is still the world's largest, and in 2022 reached its greatest share of the world economy since 2006. However, unlike in the Cold War, that position is not a sufficient condition to attract and retain would-be strategic partners,** for two primary reasons. First, China's economy is roughly 70 percent of U.S. GDP, far greater than the high-water mark of the Soviet economy, estimated at 46 percent in 1970. Second, trade liberalization is a dead end, both despite globalization's success and because of it. Neither of the United States' two political parties are interested in the obvious strategic play in trade – the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP), which U.S. allies have embraced. The CPTPP is certainly in the same diplomatic tradition of the postwar liberal institutions. However, rejoining the pact, while sensible for U.S. strategy, would not be the kind of game changing move that the actions of the late 1940s represented. U.S. average weighted tariff rates are already historically low – just 1.5 percent in 2020, compared with nearly 60 percent before World War II. **Trade is a well-worn playbook. As a result, there is little room to keep giving. Instead, the United States has developed a new area of dominance that the rest of the world views with a mixture of awe, envy, and resentment: artificial intelligence. Recent improvements** in the technology **are inviting upward revisions of productivity forecasts, spurring growth in advanced economies that has been out of reach for decades**. From AI models and research to cloud computing and venture capital, **U.S. companies, universities, and research labs – and their affiliates in allied countries – appear to have an enormous lead in both developing cutting-edge AI and commercializing it**. The value of U.S. venture capital investments in AI start-ups exceeds that of the rest of the world combined. The United States dominates Stanford HAI's latest AI Index Report, with more than double the next best country's mark in the number of newly funded AI companies, total AI private investment, AI patents, AI repository citations, AI repository publications, and AI conference citations. **U.S. firms are responsible for nearly two-fifths of the value in the global semiconductor supply chain.** U.S. foreign policy should be rooted in this natural strength.

Innovation Good: Space

Only continued technological innovation can avoid inevitable Earth-based extinction. Our only hope is to go to space

Seán **Ó hÉigeartaigh,** PhD in Genomics and Executive Director at Cambridge's Centre for the Study of Existential Risk, **2017**, "Technological Wild Cards: Existential Risk and a Changing Humanity" in *The Next Step: Exponential Life*; https://www.bbvaopenmind.com/en/articles/technological-wild-cards-existential-risk-and-a-changing-humanity/, Accessed 5-12-2024

Humanity has already changed a lot over its lifetime as a species. While our biology is not drastically different than it was 70,000 years ago, the **capabilities enabled by our scientific, technological**, and sociocultural **achievements** have changed what it is to be human. Whether through the processes of agriculture, the invention of the steam engine, or the practices of storing and passing on knowledge and ideas, and working together effectively as large groups, we have dramatically augmented our biological abilities. We can lift heavier things than our biology allows, store and access more information than our brains can hold, and collectively solve problems that we could not individually. The species will change even more over coming decades and centuries, as we develop the ability to modify our biology, extend our abilities through various forms of human-machine interaction, and **continue the process of sociocultural innovation. The long-term future holds tremendous promise: continued progress may allow humanity to spread throughout a galaxy** that to the best of our knowledge appears devoid of intelligent life. However, what we will be in the future may bear little resemblance to what we are now, both physically and in terms of capability. Our descendants may be augmented far beyond what we currently recognize as human. This is reflected in the careful wording of Nick Bostrom's definition of existential risk, the standard definition used in the field. **An existential risk "is one that threatens the premature extinction of earth-originating intelligent life,** or the permanent and drastic destruction of its potential for desirable future development."3 Scholars in the field are less concerned about the form humanity may take in the long-term future, and more concerned that we avoid circumstances that might prevent our descendants—whatever form they may take—from having the opportunity to flourish. One way in which this could happen is if a cataclysmic event were to wipe out our species (and perhaps, with it, the capacity for our planet to bear intelligent life in future). But another way would be if a cataclysm fell short of human extinction, but changed our circumstances such that further progress became impossible. For example, runaway climate change might not eliminate all of us, but might leave so few of us, scattered at the poles, and so limited in terms of accessible resources, that further scientific, technological, and cultural progress might become impossible. **Instead of spreading to the stars, we might remain locked in a perennial battle for survival in a much less bountiful world**. The Risks We Have Always Faced For the first 200,000 years of humanity's history, the risks that have threatened our species as a whole have remained relatively constant. Indonesia's crater lake Toba is the result of a catastrophic volcanic super-eruption that occurred 75,000 years ago, blasting an estimated 2800 cubic kilometers of material into the atmosphere. An erupted mass just 1/100th of this from the Tambora eruption (the largest in recent history) was enough to cause the 1816 "year without a summer," where interference with crop yields caused mass food shortages across the northern hemisphere. Some lines of evidence suggest that the Toba event may have wiped out a large majority of the human population at the time, although this is debated. At the Chixculub Crater in Mexico, geologists uncovered the scars of the meteor that most likely wiped out seventy-five percent of species on earth at that time, including the dinosaurs, sixty-six million years ago. This may have opened the door, in terms of available niches, for the emergence of mammalian species and ultimately humanity. Reaching further into the earth's history uncovers other, even more cataclysmic events for previous species. The Permian-Triassic extinction event wiped out 90–96% of species at the time. Possible causes include meteor impacts, rapid climate change possibly due to increased methane release, large-scale volcanic activity, or a combination of these. Even further back, the cyanobacteria that introduced oxygen to our atmosphere, and paved the way for oxygen-breathing life, did so at a cost: they brought about the extinction of nearly all life at the time, to whom oxygen was poisonous, and triggered a "snowball earth" ice age. The threats posed by meteor or **asteroid impacts and supervolcanoes have not gone away.** In principle **an asteroid could hit us at any point with little warning.** A number of geological hotspots could trigger a volcanic eruption; most famously, the Yellowstone Hotspot is believed to be "due" for another massive explosive eruption. However, on the timescale of human civilization, these risks are very unlikely in the coming century, or indeed any given century. 660,000 centuries have passed since the event that wiped out the dinosaurs; the chances that the next such event will happen in our lifetimes is likely to be of the order of one in a million. And "due around now" for Yellowstone means that geologists expect such an event at some point in the next 20,000–40,000 years. Furthermore, these threats are static; there is little evidence that their probabilities, characteristics, or modes of impact are changing significantly on a human civilizational timescale.

Solvency EXTENSION

The USPTO should reform the patent system to allow AI inventorship. This removes legal uncertainty and jumpstarts innovation

Ernest **Fok,** JD, Santa Clara University School of Law, **2021,** "CHALLENGING THE INTERNATIONAL TREND: THE CASE FOR ARTIFICIAL INTELLIGENCE INVENTORSHIP IN THE UNITED STATES," Santa Clara Journal of International Law, https://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=1241&context=scujil, Accessed May 10, 2024

First, **allowing AI inventorship may put the U.S. patent regime at a competitive advantage relative to its peers**. In the past, the U.S. patent system gained a competitive advantage by allowing ~~man~~-made organisms to be patentable subject matter.108 Similarly, allowing for **AI inventorship could spur the use and development of inventing-AI.** To illustrate this, the USPTO allowed the first transgenic animal, the "Harvard Mouse," to be patented in the wake of Diamond v. Chakrabarty, 47 U.S. 303 (1980), which allowed man-made organisms to be patentable subject matter.109 Biotechnology patents post-Chakrabarty were focused on whether the invention constituted patentable subject matter, rather than the morality of the invention. 110 The USPTO left the ethical questions to the legislature and executive branches.111 The same "Harvard Mouse" patent was submitted to the EPO, but was contested under EPC Article 53 due to ethical concerns.112 This required the EPO Examining Division "to weigh the suffering of animals and possible risks to the environment on the one hand, and the invention's usefulness to mankind on the other."113 While the EPO ultimately granted the patent, the codified moral utility requirement opened grounds for litigation and invalidation within the EPC. The EPC's lack of legal certainty and potentially disparate applications of the moral utility doctrine placed the European patent system at a relative disadvantage to the US patent system.**114 AI inventorship could give the U.S. patent system a** similar **innovative edge. Where other regimes hesitate to expand inventorship to inventing-AI, the USPTO could challenge the status quo**. Just as it had deferred judgments of morality regarding ~~man-made~~ organisms, **the USPTO can** similarly **discount mental acts as an exclusively human capability. Doing so could focus patent law on the "nature of the invention itself rather than the subjective mental processes by which an invention may have been achieved**."115 **Allowing AI inventorship would remove the legal uncertainty surrounding the validity of inventing-AI created patents, thus incentivizing an underutilized avenue to generate innovative patents.** For example, the USPTO has seen increases in recent years in the number of first and second AI-related patent filings due to the large community of AI inventors in the U.S.116 and allowing for AI inventorship could further fuel this trend.

The status quo suppresses dynamic inventions by AI that aren't possible for humans. The USFG should expand patent protections to include computational invention

Ryan **Abbott**, PhD. Candidate, **2020**, "Hal the Innovator: Big Data and Its Use by Artificial Intelligence" in "The Reasonable Robot: Artificial Intelligence and the Law," Submitted for the Degree of Doctor of Philosophy School of Law Faculty of Arts and Social Sciences University of Surrey, https://s3.eu-central-1.amazonaws.com/eu-st01.ext.exlibrisgroup.com/44SUR_INST/storage/alma/9E/76/B7/0B/28/D5/FE/29/F7/98/18/79/76/4D/11/62/Abbott_Thesis.pdf?response-content-type=application%2Fpdf&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Date=20240506T030032Z&X-Amz-SignedHeaders=host&X-Amz-Expires=119&X-Amz-Credential=AKIAJN6NPMNGJALPPWAQ%2F20240506%2Feu-central-1%2Fs3%2Faws4_request&X-Amz-Signature=e82985315eaa6c4c3e7457dfcb25be5ae8cf1b620f6ad7ee776d74eb34678ef7, Accessed May 5, 2024

Computational inventions may be especially deserving of protection because computational creativity may be the only means of achieving certain discoveries that require the use of tremendous amounts of data. It has been argued that **section 101 is a dynamic provision intended to cover inventions that were unforeseeable at the time of the Patent Act's enactment**.42 In the landmark 1980 case of Diamond v. Chakrabarty, the Supreme Court was faced with deciding whether genetically modified organisms could be patented. The Court held that a categorical rule denying patent protection for "inventions in areas not contemplated by Congress … would frustrate the purposes of the patent law."43 **Under that reasoning, computer inventorship should not be prohibited based on statutory text designed to prohibit corporate inventorship.** If computer inventorship is to be prohibited, it should only be on the basis of sound public policy. Concluding Thoughts **To the extent that the purpose of patent law is to incentivize innovation, it is likely that permitting patents on computational inventions and allowing computer inventorship will accomplish this goal. Given the importance of these issues, there is a need for the Patent Office to publish guidance in this area, Congress to reconsider the boundaries of patentability, and the courts to decide whether computational invention is worthy of protection.**

We can't just ignore AI inventorship. We should allow AI inventor protections with human surrogates for legal documents

David V. **Sanker**, Ph.D., J.D., Reg. No 56,242, March 12, **2020**, "Response to Question #4," USPTO, https://www.uspto.gov/sites/default/files/documents/David-Sanker_RFC-84-FR-44889.pdf, Accessed May 3, 2024

Some critics have rejected AI inventors based on complex questions about disclosure, assignment, and non-obviousness. However, attempting to ignore AI inventors is not a solution. We recommend allowing a human surrogate to sign assignment and declaration documents on behalf of AI inventors. Contractual obligations, such as ownership or license of AI technology, determine ownership of inventions created by the AI technology. In sum**, non-natural entities such as corporations can and should own patents for inventions created by AI technology that they possess, and this does not represent a substantial deviation from current law.**

We should adapt IP law to account for AI and promote innovation

Briana **Hopes**, J.D., Tulane University Law School and Senior Managing Editor, **2021**, "Rights for Robots? U.S. Courts and Patent Offices Must Consider Recognizing Artificial Intelligence Systems as Patent Inventors," Vol. 23, Tulane Journal of Technology and Intellectual Property, https://journals.tulane.edu/TIP/article/view/3652/3434, Accessed May 10, 2024

This country's **i**ntellectual **p**roperty **law was founded on promoting creativity,** encouraging ideas**, and fostering innovation. To allow an innovative and constantly improving system like an AI machine the opportunity to contribute to our society will help maximize societal benefits. Rather than seeing an AI system as a disruptor, we should view AI as an ally that is here to contribute meaningful ideas and processes to our society to help us adapt and improve in our changing world.**

The U.S. patent regime should embrace AI inventorship to capitalize on investment

Ernest **Fok,** JD, Santa Clara University School of Law, **2021,** "CHALLENGING THE INTERNATIONAL TREND: THE CASE FOR ARTIFICIAL INTELLIGENCE INVENTORSHIP IN THE UNITED STATES," Santa Clara Journal of International Law, https://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=1241&context=scujil, Accessed May 10, 2024

Second, the study anticipates AI inventorship being unwarranted even if the technology advances so significantly that the process of invention would be so removed from human involvement that no human actor could be considered an inventor.73 It found that patents with substantial AI involvement are still likely to be granted even without the recognition of computers as inventors as long as human inventors can be identified.74 For instance, EPO policy dictates that the person who recognizes the importance and utility of the invention is also an inventor. 75 This approach is shared by "all of the relevant patent jurisdictions grant patents where the inventor comes by the core of the inventive concept ... by dumb luck rather than real inventive effort."76 **When applying this to inventing-AI, the person who selects the machine learning algorithms, chooses the relevant parameters, or identifies the input data could be an inventor even if the inventing-AI' s output was somewhat unpredictable. Since AI systems involve many actors-such as programmers, users, and investors-identifying who is an inventor should be carried out on a case-by-case basis**.77 The study recommends that other patent regimes would benefit from approaching inventions that involve AI activity in a similar manner because it would establish a uniform position towards inventorship. 78 In sum, the report concludes that **the "present legal landscape" for major patent regimes is "not equipped to facilitate a definition of inventorship that includes AI systems."**79 **The legal arguments against AI inventorship expressed in the EPO's study are applicable to the U.S. patent regime. However, the U.S. patent regime could embrace AI inventorship to shift the patent landscape and capitalize on the growing investment in AI technologies.**

Intellectual property law should recognize AI inventorship & authorship. Absent protections, innovation will stifle

Ryan **Abbott**, PhD. Candidate, **2020**, "The Reasonable Robot: Artificial Intelligence and the Law," Submitted for the Degree of Doctor of Philosophy School of Law Faculty of Arts and Social Sciences University of Surrey, https://s3.eu-central-1.amazonaws.com/eu-st01.ext.exlibrisgroup.com/44SUR_INST/storage/alma/9E/76/B7/0B/28/D5/FE/29/F7/98/18/79/76/4D/11/62/Abbott_Thesis.pdf?response-content-type=application%2Fpdf&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Date=20240506T030032Z&X-Amz-SignedHeaders=host&X-Amz-Expires=119&X-Amz-Credential=AKIAJN6NPMNGJALPPWAQ%2F20240506%2Feu-central-1%2Fs3%2Faws4_request&X-Amz-Signature=e82985315eaa6c4c3e7457dfcb25be5ae8cf1b620f6ad7ee776d74eb34678ef7, Accessed May 5, 2024

Not only should the law permit copyrights and patents for AI-generated works, it should recognize AI as an author or inventor when the AI otherwise meets author- or inventorship criteria. The primary reason is based on why the law grants patents and copyrights in the first place: to encourage certain socially valuable activities. The US Constitution states that Congress shall have the power to "promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries."9 Compared to physical or real property like a car or a house, it can be difficult to prevent people from copying or using intangible products like a song or a design. **Without some form of intervention, the market would underproduce certain types of innovation because there would not be adequate incentives to generate new content if third parties could use it for free**. This is referred to as the free rider problem, for which patents and copyrights are possible solutions. **Patents and copyrights provide an inventor or author with a temporary monopoly over an invention or work by preventing third parties from using or copying it without the inventor or author's permission. The prospect of a patent or copyright thus provides an additional financial motivation** for inventors and authors.

AI legal neutrality ensures competition and improves humanity's well-being

Ryan **Abbott**, PhD. Candidate, **2020**, "The Reasonable Robot: Artificial Intelligence and the Law," Submitted for the Degree of Doctor of Philosophy School of Law Faculty of Arts and Social Sciences University of Surrey, https://s3.eu-central-1.amazonaws.com/eu-st01.ext.exlibrisgroup.com/44SUR_INST/storage/alma/9E/76/B7/0B/28/D5/FE/29/F7/98/18/79/76/4D/11/62/Abbott_Thesis.pdf?response-content-type=application%2Fpdf&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Date=20240506T030032Z&X-Amz-SignedHeaders=host&X-Amz-Expires=119&X-Amz-Credential=AKIAJN6NPMNGJALPPWAQ%2F20240506%2Feu-central-1%2Fs3%2Faws4_request&X-Amz-Signature=e82985315eaa6c4c3e7457dfcb25be5ae8cf1b620f6ad7ee776d74eb34678ef7, Accessed May 5, 2024

The central thesis of this book is that **the law requires a new principle of AI regulation – AI legal neutrality – that the law should not discriminate between people and AI when they are engaged in the same activities**. Currently, we do not have a neutral legal system. An AI that is significantly safer than a person might be the best choice for driving a vehicle, but existing tort laws might prohibit driverless vehicles. **A person might be a better choice for delivering groceries, but a business might automate because it saves on taxes. AI might be better at generating certain types of innovation, but businesses might not want to use AI if this restricts future intellectual property rights. In all these instances, neutral legal treatment would ultimately benefit society as a whole**, and this book argues that **not discriminating between people and AI will tend to improve human well-being**. The rise of AI is the rise of a new workforce – one that is treated differently under the law. Leveling the playing field is not necessary as a matter of fairness to machines, but it should be done because technologically neutral laws will improve efficiency. In turn, this will generate wealth, promote innovation, alleviate poverty, and reduce waste. **Competition is vital to the operation of markets, and inappropriate government policies and legislation can obstruct fair competition.**

Gen. Case EXTENSION

A2: IPR Bad

Don't believe their anti-IPR hacks. Strong IP creates jobs and empowers creators

Stephen **Ezell** is vice president for global innovation policy at the Information Technology and Innovation Foundation (ITIF) and director of ITIF's Center for Life Sciences Innovation, June 12, **2023**, "Losing the Lead: Why the United States Must Reassert Itself as a Global Champion for Robust IP Rights," Information Technology and Innovation Institute, https://itif.org/publications/2023/06/12/losing-the-lead-why-united-states-must-reassert-itself-as-global-champion-for-robust-ip-rights/, Accessed May 12, 2024

Many people, including those who should know better, are taken in by it, usually **because they are good-hearted individuals who support making the world a better place. But the claims anti-IP advocates make often are flat-out wrong and ignore data, the historical record, and voluminous academic evidence to the contrary.** Indeed, **IP creates jobs, empowers creators and innovators, and generates export revenues. IP also promotes creativity and provides consumers with better products and services.** 15

Their anti-corporate anti-IP propaganda is a rhetorical trick of framing that ignores extensive data

Stephen **Ezell** is vice president for global innovation policy at the Information Technology and Innovation Foundation (ITIF) and director of ITIF's Center for Life Sciences Innovation, June 12, **2023**, "Losing the Lead: Why the United States Must Reassert Itself as a Global Champion for Robust IP Rights," Information Technology and Innovation Institute, https://itif.org/publications/2023/06/12/losing-the-lead-why-united-states-must-reassert-itself-as-global-champion-for-robust-ip-rights/, Accessed May 12, 2024

Yet, **to bolster the claim that IP only benefits big business, many anti-IP advocates argue that IP gives large companies monopolies**. Indeed, progressive economist Joe Stiglitz wrote, "Intellectual Property Rights generate monopoly power that can be used to leverage further monopoly power."24 **Unfortunately, propagating an unsupported theory as the primary basis for policy analysis and decision-making seems to be rule number one in the anti-IP playbook, despite data frequently proving these hypotheses wrong. Anticorporate opponents** also know that most Americans disagree with their agenda, which is why they cloak it with claims of being for capitalism and markets. As Stiglitz wrote: I prefer another name, "progressive capitalism," to describe the agenda of curbing the excesses of markets; restoring a balance among markets, government and civil society; and ensuring that all Americans can attain a middle-class life. The term emphasizes that markets with private enterprise are at the core of any successful economy, but it also recognizes that unfettered markets are not efficient, stable or fair.25 This kind of phraseology is reminiscent of Xi Jinping's assertion that the Chinese Communist Party's (CCP's) state-directed and -dominated economy is nothing more than a "socialist market economy with Chinese characteristics."26 Likewise, **in a speech decrying big businesses and praising small ones, Senator** Elizabeth Warren (D-MA) **stated, "I love markets! Strong, healthy markets are the key to a strong, healthy America."**27 **This is a common refrain** from anticorporate progressives.28 The message is not only that an economy with big firms is not a market economy but also that they are supporters of business. **Advocates also know that if they can frame a noncorporate economy as the true capitalist economy, it is harder to criticize them for attacking the U.S. economic system.**

A2: Off-Case

A2: Topicality

We're predictable

AI inventorship is at the forefront of IP debates, which are endemic to policy discussions generally

Stephen **Ezell** is vice president for global innovation policy at the Information Technology and Innovation Foundation (ITIF) and director of ITIF's Center for Life Sciences Innovation, June 12, **2023**, "Losing the Lead: Why the United States Must Reassert Itself as a Global Champion for Robust IP Rights," Information Technology and Innovation Institute, https://itif.org/publications/2023/06/12/losing-the-lead-why-united-states-must-reassert-itself-as-global-champion-for-robust-ip-rights/, Accessed May 12, 2024

Emerging technologies remain at the forefront of most domestic and international policy discussions, and IP policy is no exception. As technology continues to develop and change, best practices for IP protection must evolve and adapt to further enable continued innovation. If U.S. policymakers intend to build a framework supporting American innovation leadership, they should lead all relevant international policy discussions, including on IP.126 By comparison, the U.K. Intellectual Property Office (UKIPO) repeatedly conducts consultations concerning the intersection of IP and emerging technologies, most recently focusing on artificial intelligence (AI).127 However, jurisdictional borders do not limit digital technologies such as AI, artificial reality (AR), and virtual reality (VR), and blockchain technologies such as non-fungible tokens (NFTs). American policymakers should work with like-minded allies to establish IP best practices for AI, AR/VR, NFTs, and other emerging technologies. Artificial Intelligence **Currently, AI IP debates generally address inventorship, data mining, and AI-generated works. Each of these discussions encompasses multiple complex elements; however, the core rests upon the fact AI systems are human-operated tools.** In 2018, Dr. Stephen Thaler, the inventor of the Device for the Autonomous Bootstrapping of Unified Sentience (DABUS) AI system, kicked off what has become a global debate over AI inventorship and creatorship.128 **Courts, IP offices, and legislators worldwide continue debating whether an AI system can or should be listed as an inventor or creator on a patent or copyright application.**

A2: Supreme Court CP

Congressional action is key. The Supreme Court won't act to cover AI inventions, which will destroy innovation

Wen **Xie**, U.S. Patent Attorney and Partner with Global IP Counselors, July 14, **2022**, "The Case for Patenting AI: U.S. Patent Laws Better Get Smart or Get Left Behind," IP Watchdog, https://ipwatchdog.com/2022/07/14/case-patenting-ai-u-s-patent-laws-better-get-smart-get-left-behind/id=150204/, Accessed 5-12-2024

We might never get to advanced machines if we do not patent machine learning processes. We are witnessing the advent of the **Fourth Revolution's greatest enabling technology in AI, which will impact all the great technological spheres from cleantech to advanced telecommunications. Yet** even now, **the Supreme Court refuses to rectify the deficiencies in U.S. law** with American Axle. The Supreme Court has made it clear that they do not intend to change course **with respect to their views on American innovation policy. Unless Congress takes leadership, we in the United States should prepare ourselves to become the land where imagination and machine philosophy remain just that – mere ideas.**

A2: CPs

A2: no patents CP

Declaring AI inventions unpatentable destroys innovation worse than the status quo

John **Villasenor** is a nonresident senior fellow in Governance Studies and the Center for Technology Innovation at Brookings. He is also a professor of electrical engineering, law, public policy, and management at UCLA, August 25, **2022**, "Patents and AI inventions: Recent court rulings and broader policy questions," Brookings Institution, https://www.brookings.edu/articles/patents-and-ai-inventions-recent-court-rulings-and-broader-policy-questions/, Accessed May 4, 2024

A first option is **to declare AI inventions unpatentable**. But this **would require defining what an "AI invention" is, and lead to a proliferation of disputes regarding whether inventions are within that category. The risks and costs associated with these disputes would undermine the incentive at the heart of the patent system, which aims to promote innovation by providing a time-limited set of exclusive rights in exchange for disclosures of inventions to the public.** For example**, to the extent that AI can create new disease-fighting drugs that would have otherwise remained undiscovered, it would be bad policy to disincentivize pharmaceutical researchers and companies from investing time, effort, and capital in AI-based drug-discovery approaches.**

Kritik Answers

A2: Law / The State bad

Only a legal framework can harness the benefits of AI and minimize the risks. The impacts are social inequality, discrimination, and extinction

Ryan **Abbott**, PhD. Candidate, **2020**, "The Reasonable Robot: Artificial Intelligence and the Law," Submitted for the Degree of Doctor of Philosophy School of Law Faculty of Arts and Social Sciences University of Surrey, https://s3.eu-central-1.amazonaws.com/eu-st01.ext.exlibrisgroup.com/44SUR_INST/storage/alma/9E/76/B7/0B/28/D5/FE/29/F7/98/18/79/76/4D/11/62/Abbott_Thesis.pdf?response-content-type=application%2Fpdf&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Date=20240506T030032Z&X-Amz-SignedHeaders=host&X-Amz-Expires=119&X-Amz-Credential=AKIAJN6NPMNGJALPPWAQ%2F20240506%2Feu-central-1%2Fs3%2Faws4_request&X-Amz-Signature=e82985315eaa6c4c3e7457dfcb25be5ae8cf1b620f6ad7ee776d74eb34678ef7, Accessed May 5, 2024

The law plays a critical role in the use and development of AI as the law establishes binding rules and standards of behavior to ensure social well-being and protect individual rights. **An appropriate legal framework will help us realize the benefits of AI while minimizing its risks** – which are significant. AI has caused flash crashes in the stock market, committed cybercrime, and been used for social and political manipulation. **Famous technologists like** Elon Musk and academics like **Stephen Hawking** have even **argued that AI may doom the human race. Most concerns,** however, **focus on nearer-term and more practical problems such as technological unemployment, discrimination, and social inequality. But these concerns do not exist in a vacuum. How different jurisdictions elect to regulate AI will change how technologies develop**. For instance, there is already a significant international divide with respect to whether companies or consumers "own" personal data vital to AI development, the extent to which AI can be used in state surveillance of its residents, and when individuals have a right to an explanation for decisions made by AI (ranging from credit approval to criminal sentencing). As the law will impact AI, AI will have no less significant an impact on the law. AI challenges fundamental assumptions underlying laws designed to regulate the behavior of human actors.

A2: Patent system bad

We solve the kritik impacts. AI patents foster innovation and that makes the patent system obsolete

Erika K. **Carlson,** Senior Technology Writer, **2020,** "Artificial Intelligence Can Invent But Not Patent—For Now," Engineering6(2020), pp. 1212–1213http://www.wncyip.com/UploadFiles/20231010/20231010140242988.pdf, Accessed May 4, 2024

There are also **potential arguments against granting patents to inventions created by AI**, Hervey said. **An inventive AI might make innovation fast enough or cheap enough that the usual 20-year monopoly would not be necessary. ''A particularly successful and productive inventive AI might give the company operating it too much market share if its inventions attracted a monopoly,"** Hervey said. ''We need to watch how the use of AI develops and balance the needs for incentives and for competition." Although multiple agencies have denied the team's patent applications so far, Abbott said there have been promising signs for the project. Some patent agency representatives have suggested that the applications were rejected not because of disagreements with the team's policy arguments, but because of interpretations of current law that patents require human inventors; they have also acknowledged a need to discuss and potentially update the relevant policies.

A2: Legal Personhood DA

Justified – Corporate Personhood

Corporate personhood has already set a precedent for expanding legal protections for non-human entities

Briana **Hopes**, J.D., Tulane University Law School and Senior Managing Editor, **2021**, “Rights for Robots? U.S. Courts and Patent Offices Must Consider Recognizing Artificial Intelligence Systems as Patent Inventors,” Vol. 23, Tulane Journal of Technology and Intellectual Property, https://journals.tulane.edu/TIP/article/view/3652/3434, Accessed May 10, 2024

Corporations have been recognized as legal persons going back to the nineteenth century."' They **are considered legal persons, like people, and are viewed as individuals in the eyes of the law**.120 **Corporations are also one of the non-human entities that have intellectual property rights.**121 A corporation shares several **protections** and rights **that a natural person has; however, the United States Supreme Court has stated that a corporation "must exist by means of natural persons."**122 **The doctrine of "corporate personhood"** was established to address the ongoing legal debate over the extent to which rights traditionally associated with natural persons should also be afforded to corporations.123 This doctrine **recognizes "corporations as legal persons separate in identity from the natural persons who form them."** 22 The idea of "corporate personhood" "serves as a basis for the limited liability of the corporate form and the ability of a corporation to exercise rights that are enumerated in the Constitution for persons."12 Although the Supreme Court doesn't use the term "corporate personhood," its decisions on the rights of corporations rely on the understanding that corporations have similar rights as their incorporators, natural persons.12 **The Court's recognition of the legal personhood status, rights, and protections for corporations have gradually expanded over time.**127 For example, the Supreme Court has recognized that the First Amendment applies to corporations, including the protection of political speech.2 8 Furthermore, the Court has held that a corporation was a "person" under the Religious Freedom Restoration Act of 1933.129 In addition, under contract law, corporations are recognized as legal persons and individuals in the eyes of the law and are bound by their contracts regardless of internal disagreements.130

Corporate personhood parallels are sound

Briana **Hopes**, J.D., Tulane University Law School and Senior Managing Editor, **2021**, “Rights for Robots? U.S. Courts and Patent Offices Must Consider Recognizing Artificial Intelligence Systems as Patent Inventors,” Vol. 23, Tulane Journal of Technology and Intellectual Property, https://journals.tulane.edu/TIP/article/view/3652/3434, Accessed May 10, 2024

Should artificial intelligence be granted legal personhood? For this idea to move forward, the rights and duties that accompany legal personhood must be addressed and specifically what rights and duties of legal personhood will apply to artificial intelligence.77 For example, corporations and natural humans have a particular bundle of rights and duties that accompanies legal personhood. 78 Proponents for AI personhood contend that granting an artificial intelligence system legal personhood status would be synonymous with corporations being treated as legal persons. 79 Although corporations are considered legal persons, they are run by their stockholders and directors. This is no different than an artificial intelligence being run by its owner and programmers. 80

Justified: International precedence

There is already international precedence for granting nonhuman entities legal personhood

Rafael Dean **Brown,** Centre for Law and Development, Qatar University College of Law, **2021**, "Property ownership and the legal personhood of artificial intelligence," Information & Communications Technology Law, 30:2, 208-234, https://www.tandfonline.com/doi/pdf/10.1080/13600834.2020.1861714, Accessed May 10, 2024

To understand better the nexus between legal personhood and property ownership, let us explore the relation of property ownership to the grant of personality to nonhumans. **Nonhumans that have been granted legal personhood status have also been conferred the right to property ownership, the exercise of which is attributed from a human agent, who protects its interests**. This paper argues that **human agency should be a prerequisite for the exercise of property rights for nonhumans, and especially for AI. Corporations, rivers, and idols are examples of legal persons with a recognised right to own property. It is now a legal norm that corporations and even hybrid corporations like an LLC can own property.**136 In recent times, a few jurisdictions have conferred the right to own property to rivers, including the Whanganui River in New Zealand, and the Ganges The ownership of property in these three examples, however, is exercised thorough human agents. Solum stated as such concerning the corporation as legal person that relies on relations between shareholders and officers to act on its behalf.139 Solaiman agrees with this position because a corporation is 'made up of human beings' without whom the corporation cannot engage in physical or intellectual acts.140 The same applies with rivers. The Whanganui River Claims Settlement Act of 2017 declares the river as a legal person with 'all [attendant] rights, powers, duties, and liabilities'.141 However, Te Pou Tupua, an office consisting of human agents that act on behalf of the river in the physical world, represents Te Awa Tupua, the name of the river's legal entity.142 The Act vests the rights to the ownership of the waterbed in the Te Awa Tupua. Likewise, in the Ganges and Yamuna rivers in India, the High Court of Uttarakhand, after granting legal personhood under the juristic person construct, used the common law doctrine of parens patriae to require the state to act in loco parentis for the rivers.143 Finally, courts in India have allowed idols to exercise property ownership rights through legally recognised managers who are in possession of the idol.144

Case is an impact turn

Alternatives to personhood are incapable of handling AI advancements

Rafael Dean **Brown,** Centre for Law and Development, Qatar University College of Law, **2021**, "Property ownership and the legal personhood of artificial intelligence," Information & Communications Technology Law, 30:2, 208-234, https://www.tandfonline.com/doi/pdf/10.1080/13600834.2020.1861714, Accessed May 10, 2024

Critics of granting legal personhood argue that alternative legal doctrines to contract formation would be sufficient. Such alternatives include treating AI as mere tools, treating AI as an artificial agent governed by agency law, and using insurance to cover potential AI liability. Currently, with less advanced artificial agents, the obstacle to electronic contracting was resolved by resorting to analysis that classify artificial agents as 'tools' of humans,46 treat the contract as a unilateral offer by the artificial agent,47 or apply the objective theory of contract law.48 **Such alternatives will reach their limit, however, as AI, including artificial agents, engage in increasingly autonomous, unforeseeable, and uncontrolled actions and decision-making.**

CREATIVE ARTS AFF

Introduction

In the status quo, generative artificial intelligence (LLMs or Large Language Models) rely on scraped (lifted, stolen) text, sounds and images to create imitative work--writing, music, visual art--that aims to be "as good as" authentic artistic work. Because the scraped data is used to "train" AI to imitate, rather than the data being used to directly duplicate the work, the AI industry argues that scraping and training is "fair use."

TLDR: Affirmative says no more fair use defense for creative work based on scraped data. The affirmative flips the presumption of fair use under the law--a presumption currently exploited by the AI technology industry. The plan, derived from Justine Magowan's article, restores the "inverse ratio" rule for substantial similarity in artistic work: "the more an alleged infringer had access to a work, the lower the threshold for establishing substantial similarity." Courts will then be required to presume scraping of data has occurred and disallow the defense of fair use for work based on the scraping/training programming. The advantages in this 1AC are economic growth and creativity, each with multiple terminal impact scenarios. Future research could yield more advantages.

The negative has many counterplan options, some involving giving more autonomy and legal liability over to the AI itself. There are also many legitimate and socially necessary applications of the fair use doctrine that the affirmative might jeopardize, such as independent researchers using genAI to fight disinformation with economic collapse impacts. The plan might also tank the AI tech market by discouraging investment, leading to an investor confidence disadvantage, also with economic collapse impacts. Negatives should be careful--some neg authors say AI should be autonomous, while others say we shouldn't worry about AI precisely because it will never be autonomous. Just make sure your strategy and evidence is sufficiently consistent (or conditional) before the debate.

This article is a great introduction to the question addressed by the affirmative: Should the use by AI of copyrighted works for training be considered fair use? The article explains the factors involved in courts' application of a fair use test, and the complexities involved in AI cases. https://copyrightalliance.org/copyrighted-works-training-ai-fair-use/

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Observation I--Inherency:

A. Status quo protections of creative work against generative AI are inadequate—this threatens the economic sustainability of artists

Justine **Magowan**, J.D. Candidate at University of California College of the Law and Executive Articles Editor of the UC Law Journal, **2023**
“'It’s Like I’ve Got This Music in My Mind': Protecting Human Authorship in the Age of Generative Artificial Intelligence,” Hastings Law Journal, https://repository.uclawsf.edu/cgi/viewcontent.cgi?article=4058&context=hastings_law_journal (accessed 3/21/24)
As of this writing, human authorship is a threshold requirement to receive copyright protection stemming from over a century of settled jurisprudence. As such, A.I.-generated works (musical, visual, literary, etc.) are unable to receive copyright protections because Generative A.I. is not an “author” in the traditional sense. However, the U.S. Copyright Office’s current stance that an element of human authorship is necessary to receive protection, does little to assuage the fear that A.I.-generated works will nevertheless harm an artist’s ability to make a living off their art. For example, A.I. image generators like Stable Diffusion are “trained to recognize patterns, styles and relationships by analyzing billions of images collected from the public internet, alongside text describing their contents.” Because A.I. can access essentially anything available publicly online, artists grow increasingly afraid of posting their new works for “fear of feeding this monster.” This seemingly unlimited access harms an artist’s ability to advertise their work, which may foreclose an important part of their business model.

B. LLMs systemically violate copyright

Ben **Guarino**, associate technology editor at Scientific American, **and** Ed **Newton-Rex**, founder of Fairly Trained, March 11, **2024**
"This Computer Scientist Seeks a Future Where AI Development Values Copyright," Scientific American, https://www.scientificamerican.com/article/artificial-intelligence-copyright-fairly-trained/ (accessed 3/31/24)
To learn how to generate text, for instance, OpenAI’s GPT-3.5, which powers the free version of the company’s popular ChatGPT, was trained on some 300 billion words that were scraped from posts on Wikipedia and other websites. Several AI companies have argued that it is fair to train models this way without consulting or paying writers, photographers or other human creators. “AI development is an acceptable, transformative and socially beneficial use of existing content that is protected by fair use,” wrote Stability AI, which makes the popular image generator Stable Diffusion, in an October 2023 statement to the U.S. Copyright Office. A representative of the company told Scientific American that this remains Stability AI’s position. This fair use view is far from universal. Disagreement with it is the basis for disputes such as the New York Times’ lawsuit against Microsoft and OpenAI, which alleges that the technology companies unlawfully used the newspapers’ stories to make chatbots. The issue also motivated computer scientist Ed Newton-Rex to quit his job at Stability AI last November. He has since launched a nonprofit organization called Fairly Trained, which certifies companies that only train their generative AI models on copyrighted material when they get a license to do so. “There is this divide emerging between companies that train, as I would say, fairly and those that don’t,” Newton-Rex says. But it can be difficult to discern how AI models were developed, he adds. For instance, within a given company, developers of an AI audio system might seek licenses, for instance, while their colleagues behind a text-generating large language model (LLM) might not.

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Plan: The United States federal government should significantly strengthen its protection of domestic intellectual property rights in creative arts copyright law by restoring the inverse ratio rule and removing the fair use defense in copyright infringement cases involving generative artificial intelligence, so that the existence of an artist's work on a digital platform creates a rebuttable presumption that it has been scraped for generative AI.

Observation II--Solvency:

A. Acting now is imperative to protect individual rights and preserve equity, trust and progress in digital creativity

Bill **Dutton**, Professor of Internet Studies at Oxford University, **et al, 2023**
"Trust in a Network Society: A crisis of the digital age?" Network Readiness Index 2023, https://download.networkreadinessindex.org/reports/nri_2023.pdf (accessed 3/27/24)
Arguably, over the past decade, there has been a decline in trust towards digital technologies, which have dramatically exceeded expectations time and again. Many thought the internet would fail. However, a decline in trust can be attributed to a range of factors, including the explosion of social media, advancements in generative AI, the rise of cryptocurrencies, blockchain technology, and developments in quantum computing. Many people are skeptical due to issues like the spread of fake news and potential privacy breaches resulting from the extensive data collection that characterizes the digital age. These concerns are further exacerbated when one considers how this data is almost magically managed: the ways it is gathered, stored, disseminated, and used by billions of individuals. As technology continues to rapidly evolve, it's vital for society to strike a balance between harnessing its benefits, managing risks, and safeguarding individual rights.

B. Plan won't trade off with bottom-up and grassroots initiatives—policymakers and regulatory frameworks can bring all stakeholders to the table

Peter **Idoko**, professor at Lutz Hans School of Business and European Language, **et al**, **2024**
"Harmonizing the voices of AI: Exploring generative music models, voice cloning, and voice transfer for creative expression," World Journal of Advanced Engineering Technology and Sciences, https://www.researchgate.net/profile/La-Enyejo/publication/378697212 (accessed 3/25/24)
Moreover, there is a need for ongoing dialogue and engagement with diverse stakeholders, including artists, musicians, technologists, legal experts, and community representatives (Johnson and Smith, 2023). Engaging stakeholders in discussions about the implications of AI technologies can help identify potential risks and opportunities, leading to informed decision-making and responsible innovation. Additionally, policymakers should actively engage in shaping the regulatory landscape surrounding AI-driven creative expression (Johnson and Smith, 2023). Regulatory frameworks should strike a balance between fostering innovation and protecting the rights and interests of individuals. This includes establishing clear intellectual property rights frameworks and mechanisms for addressing issues related to data privacy, consent, and ownership. Furthermore, educational initiatives should be developed to enhance digital literacy and promote responsible use of AI technologies in creative endeavors (Wang and Li, 2023). By providing training and resources to creators and users, we can empower individuals to navigate the ethical and technical complexities of AI-driven creative expression effectively.

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C. Plan solves, it's key to creativity, and that's essential to humanity

Justine **Magowan**, J.D. Candidate at University of California College of the Law and Executive Articles Editor of the UC Law Journal, **2023**
"'It's Like I've Got This Music in My Mind': Protecting Human Authorship in the Age of Generative Artificial Intelligence," Hastings Law Journal, https://repository.uclawsf.edu/cgi/viewcontent.cgi?article=4058&context=hastings_law_journal (accessed 3/21/24)

The creative act of composing music is "among the core of activities that define what it means to be human." To that end, "[w]hen new technology platforms threaten the economic infrastructure supporting creative expression, copyright law seeks to protect the system that supports the creative arts." If acts of creation are indeed part-and-parcel to the human experience and copyright law seeks to support the creative arts, then it stands to reason that there should be stronger protections for works of human authorship against works of Generative A.I. because only works of human authorship can satisfy the de minimis level of creativity required for copyright protection. The following Subparts advocate for the revival of the inverse ratio rule and the removal of the fair use defense to protect human authorship from Generative A.I. infringement. A. PRESUMPTION OF ACCESS & REVIVAL OF THE INVERSE RATIO RULE There should be a rebuttable presumption of access applied specifically to music copyright infringement lawsuits concerning A.I.-generated musical works because of how easily Generative A.I. models access content online. If the plaintiff can show that their musical work exists on a digital platform, like Spotify, Apple Music, SoundCloud, or YouTube, then courts should assume that Generative A.I. has access to the work. However, the presumption is rebuttable if a defendant can show that the Generative A.I. model at issue did not access the plaintiff's work. In turn, the inverse ratio rule, which presumes that a high level of access is indicative of copying, should be revived at the summary judgment stage for music copyright infringement involving A.I.-generated musical works. The Ninth Circuit was wrong to use Skidmore to abrogate the inverse ratio rule from its jurisprudence. The unique problems the court cited regarding the digital world and the concept of access are precisely why the inverse ratio rule should be revived for the age of Generative A.I. because this technology poses such a strong threat to human creativity by its ability to access all copyrighted works that are available online. It is also important to note showing access is only a sub-element of the first part of a copyright infringement analysis. The plaintiff would still need to make at least a minimal showing of probative similarity. If a court then determines that copying occurred via the presumption of access and a showing of probative similarity, then the works go to the ordinary listener—usually, members of the jury—to determine whether an ordinary listener would recognize the copying. Only then does the question of whether the works are substantially similar arise. At most, this presumption of access and revival of the inverse ratio rule would likely help a plaintiff survive a motion for summary judgment, allowing a jury to determine whether there was unlawful appropriation and, ultimately, whether there was infringement. And again, this Note only advocates for the revival of the inverse ratio rule for a narrow area of copyright law: music copyright infringement lawsuits concerning the infringement of A.I.-generated musical works. Much of the scholarship concerning the fair use defense and its applicability to generative A.I. focuses on the input, meaning that machine learning based on copyright material should be considered fair use. However, the output should not be because A.I.-generated works, and particularly musical works, will essentially be derivative works of the copyrighted works. This level of substantial substitution will mean that A.I.-generated musical works are not transformative. To that end, this Note proposes that the fair use defense should be abrogated from music copyright infringement lawsuits against A.I.-generated musical works, meaning that A.I.-generated musical works should never be considered a fair use. Because the purpose and character of the use of an A.I.- generated musical work will likely not be a transformative use anyway, a fair defense would likely fail on the first factor of the statutory test.222 Not only that, but because the use is likely more substitutive than transformative,223 the use would likely hurt "the potential market for or value of the copyright [musical] work" under the fourth factor.224 Given that fair use analysis is complicated as it is, removing it from this specific subset of cases would help plaintiffs better protect their works of human authorship against Generative A.I. Generative A.I. is a threat to songwriters, composers, performers, and the music industry as a whole. While Generative A.I. could be conceived as merely another set of tools for creation, it will harm human artists. Our laws must find a way to catch up with the ever-expanding digital, technological world because music copyright infringement and the test of substantial similarity will not protect human musical artists against Generative A.I. infringement. While bringing back the inverse ratio rule and abrogating the fair use defense for these specific cases are controversial ideas, both would help plaintiffs protect their work against Generative A.I. infringement, which is a paramount concern because creating and appreciating art, particularly music, is essential to our humanity.

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Advantage 1: Economic Growth

A. Creative arts are key to economic growth, job creation, GDP, funding public services, diversification, start-ups and international tourism

Velibor **Božić**, research scientist in Croatia, January **2024**
"Creative Industries: The Future of Innovation and Impact," Research Gate, https://www.researchgate.net/publication/377768310_Creative_Industries_The_Future_of_Innovation_and_Impact (accessed 3/22/24)
Creative industries can be a powerful stimulus to economic growth and entrepreneurship (26). Economic benefits of creative industries • Creation of jobs: Creative industries are a significant source of employment, accounting for over 30% of the workforce in some countries. • GDP growth: The creative industries contribute significantly to GDP growth, both directly and indirectly. • Tax revenue: Creative industries generate substantial tax revenue, which can be used to fund public services and infrastructure. • Economic diversification: Creative industries can help to diversify economies and reduce reliance on traditional industries. • Urban regeneration: Creative industries can help to revitalize urban areas and attract investment. Entrepreneurial opportunities in creative industries • Start-ups: The creative industries are a fertile ground for start-ups, as they are often characterized by low barriers to entry and high growth potential. • Innovation: The creative industries are a source of innovation, as they often require the development of new technologies and business models. • International trade: Creative industries are well-suited for international trade, as they can be exported easily across borders. • Cultural tourism: Creative industries can attract tourists to a region, contributing to the local economy.

B. Creativity is the most important factor in growth--it outweighs labor and capital inputs

A. **Bobirca and** A. **Draghici**, two analysts at the Academy of Economic Studies in Bucharest, **2011**
"Creativity and Economic Development," International Journal of Economics and Management Engineering Vol:5, https://waset.org/publications/615/creativity-and-economic-development (accessed 8/29/2019)
European states ranking in the first positions have similar attitudes on attracting and retaining global creative talent, translated in liberalising labour policies and immigration. The small cultural distance among the European countries and the high number of English speakers are additional advantages in the international creative human capital, especially in relation to the United States. Consequently, the ability of states to attract, retain and develop creative human capital and to exploit creative capabilities tends to become, to a significant extent, the key to global competitiveness. Thus, our survey confirms that talent and creativity have at a greater extent than traditional inputs such as labour or capital, the capacity to deliver sustainable economic growth and social development.

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C. Growth enables the transition to post-carbon energy—several warrants

Victor **Hill**, Financial Economist with the International Finance Corporation at the World Bank, November 3, **2020**
"Only capitalism will save the planet," Master Investor, https://masterinvestor.co.uk/economics/only-capitalism-will-save-the-planet/ (accessed 3/23/24)

Big money already decided that the fossil fuel economy is doomed and that renewable energy is the future long before Dame Emma Thompson swept in from LA (business class, of course) to gesticulate on Oxford Street, in those languorous pre-Covid days. The billionaire Davos Boys have been preaching climate orthodoxy for years. And the Great Transition is already well underway. Renewable profitability The good news is (don't tell XR) that the United Kingdom has managed to reduce its carbon emissions by over 40 percent since 1990 by all but phasing out coal and investing massively in renewable power generation. As I write this on a blustery day in late October, according to the GB National Grid Status website, coal powered generation is contributing precisely zero to UK power generation. The UK has the world's largest offshore wind power market with capacity still increasing rapidly. Earlier this year the UK government effectively dropped the ban on onshore wind turbine arrays in the drive to reach net zero carbon emissions by 2050. As the shift from carbon-heavy sources to carbon-free electricity generation has accelerated so economies of scale have kicked in and new technologies have come online. Recent data from Bloomberg New Energy Finance shows that the latest generation of solar and wind power plants can produce electricity cheaper than the most modern coal plants even without subsidy for two thirds of the global population. The price of solar panels has dropped by almost 90 percent over the past decade. By mid-decade, solar and wind power will outcompete all existing coal plants on price – at which point a swath of coal plants will be deemed uneconomic and closed. The economics of energy storage – battery technology – are also improving. On 22 September Tesla (NASDAQ:TSLA) unveiled its new battery known as the 4680[ii]. This fuel cell reportedly offers six times the power of Tesla's previous cells, and five times the energy capacity. The company confirmed that the new cell measures 46 millimetres by 80 millimetres – hence the name. The iconic automaker says that these new fuel cells will be able to increase the range of a vehicle by 16 percent – that could be up to about 500 miles for its latest models. That kind of range makes medium-distance travel without recharging (say, London to Edinburgh in a UK context) quite feasible. Red China goes green China currently has new coal plants under construction which will have a capacity of another 94 Gigawatts of electricity per annum. China already emits more CO2 than all of Europe and America combined. But China now has a target of going carbon neutral by 2060, and by so aspiring has upped the moral ante with Mr Trump's America. Now, some analysts predict that China may abandon its programme of building coal-fired power stations as much on economic grounds as on environmental ones. China might yet gain a strategic advantage from global warming. Last month the UK First Sea Lord, Admiral Tony Radakin (the military head of the Royal Navy), warned that the melting of ice in the Arctic would create new maritime trade routes across the top of the world – the Arctic Ocean – which would halve the transit time between East Asia and Western Europe. China already has, according to the Pentagon, the world's largest navy with 350 warships and submarines. That opens the prospect of Chinese naval vessels being able to penetrate the North Atlantic rapidly, and possibly threatening the European and American undersea cable network. Hydrogen in three colours The downside with the current generation of electric vehicles is that they require batteries which use expensive rare earth minerals of which lithium, and which are costly and messy to recycle at the end of their economic life. The extraction of these rare earth minerals in countries such as the Democratic Republic of Congo (DRC) is itself a cause of environmental degradation and carbon emissions. That is why there is renewed focus of attention on hydrogen. Hydrogen comes in three colours. Gray hydrogen is made using fossil fuels like oil and coal, which emit CO2 into the air as they combust. The blue variety is made in the same way, but carbon capture prevents CO2 being released, enabling the captured carbon to be safely stored deep underground or utilised in industry. BP (LON:BP.) is working on that. As its name suggests, green hydrogen is the cleanest variety, producing zero carbon emissions. It is produced by electrolysis powered by renewable energy i.e. offshore wind. The holy grail in energy now is to extract hydrogen cheaply and cleanly from water by electrolysis (i.e. separating the hydrogen and carbon atoms). Hitherto the energy required to perform the electrolysis has been unequal to the energy value of the hydrogen thus produced. That could be about to change. Bill Brown, founder of NET Power has claimed that his firm's techniques can produce clean hydrogen at 0.57 cents a kilo. This is a developmental technology based on the Allam Cycle which has been around in theory for some time. Hydrogen can power vehicles, trains, ships and even aeroplanes. When hydrogen is ignited the only by-product is water. Hydrogen could also be used to facilitate the manufacture of steel, cement, glass, chemicals and fertilisers. Goldman Sachs reckons that, if the efficiency of hydrogen electrolysis could be sufficiently improved, then about 45 percent of all global carbon emissions could be eliminated. Electric cars Some estimates suggest that electric battery-powered cars could compete on price with conventional cars powered by internal combustion engines (ICEs) as soon as 2024. That is one reason why Tesla shares have rocketed this year. But even if you are not a true believer in Tesla, consider that established automotive giants such as Volkswagen and Daimler-Benz are fully committed to the phase-out of ICEs. In Germany, sales of electric and hybrid cars overtook diesel cars for the first time last month. I'll have a lot more to say about the outlook for electric cars soon. From coal to wind Dalmellington in Ayrshire, Scotland, was once known as a coal-mining town. But in future it is likely to be known as the location of a 50-turbine wind farm. The new 240 Megawatt facility will be built and run by Vattenfall (owned by the Kingdom of Sweden). But the array will be owned by the infrastructure fund, Greencoat UK Wind PLC(LON:UKW), which has acquired the project for £320 million. Greencoat has emerged as a growing renewables fund which is now included in the FTSE-250 index and which has a market capitalisation of around £2.5 billion – that's more than the better-known UK energy company Centrica PLC (LON:CAN), the owner of British Gas. The fund has acquired 36 wind power sites which collectively produce enough electricity to power about one million homes – that's about five percent of all wind power generated in the UK. Some of those arrays were acquired from Scottish & Southern Energy (LON:SSE). Wind power now accounts for about 20 percent of Britain's total electricity consumption. Greencoat's strategy is to encourage energy giants to green up their portfolios by taking all the development risk. It then buys the asset from the generator and pockets the cash flow arising. Greencoat UK Wind is run by Greencoat Capital, a specialist investor in renewable energy which has £5 billion of assets under management across both wind and solar energy. Greencoat raised £375 million from investors in May 2019. A report last year by the research firm, Hardman & Co. found that returns for listed renewable energy funds over five years approached 10 percent. Such funds often carry a share price premium over their net asset value. At a moment when the share prices of the oil majors are under pressure and when BP and Shell have slashed their dividends, Greencoat's 4.8 percent dividend yield is pleasing.

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D. The impacts are on the brink and threaten all life

Euractiv.com October 25, **2023**
"Life on Earth under 'existential threat': climate scientists," Euractiv, https://www.euractiv.com/section/climate-environment/news/life-on-earth-under-existential-threat-climate-scientists/ (accessed 4/4/24)

Climate change poses an "existential threat" to life on Earth, prominent scientists warned Tuesday (24 October), in an assessment on this year's avalanche of heat records and weather extremes that they said are hitting more ferociously than expected. With expectations that 2023 will be the hottest year on record, regions across the planet have been scorched by deadly heat waves. Others have been hit by floods, or in some cases, have suffered both extremes in quick succession. "The truth is that we are shocked by the ferocity of the extreme weather events in 2023. We are afraid of the uncharted territory that we have now entered," said an international coalition of authors in a new report published in the journal BioScience. Their stark assessment: "Life on planet Earth is under siege". They said humanity had made "minimal progress" in curbing its planet-heating emissions, with major greenhouse gases at record levels, and subsidies for fossil fuels soaring last year. The damning assessment comes just a month ahead of UN COP28 climate negotiations to be held in oil-rich United Arab Emirates. "We must shift our perspective on the climate emergency from being just an isolated environmental issue to a systemic, existential threat," the authors said. The study on the state of the climate looked at recent data on 35 planetary "vital signs" and found 20 of these were at record extremes this year. Just roughly 1.2 degrees Celsius of temperature rise above pre-industrial levels has triggered a range of calamitous and costly consequences. This year has also seen the beginning of a warming El Nino weather phenomenon. The European Union's Copernicus Climate Change Service has said that the three months to September were the hottest period ever recorded, and likely the hottest in approximately 120,000 years. Many climate-related records were broken by "enormous margins" in 2023, the report said, particularly temperatures in the oceans, which have absorbed almost all the excess heat caused by human carbon pollution. Co-author Johan Rockstrom, director of the Potsdam Institute for Climate Impact Research, said recorded sea surface temperatures "go completely off the chart" and scientists are not yet able to fully explain why. The potentially serious impacts include threats to sea life and coral reefs and an increase in the intensity of large tropical storms, the report said. People across the planet have faced heatwaves and droughts this year, while severe flooding has struck in the US, China and India and beyond. In Canada, record wildfires partly related to climate change released more carbon dioxide than the country's total 2021 greenhouse gas emissions, the report said.

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Advantage Two: Creativity

A. GenAI will crowd out human creativity—several possible scenarios

David **De Cremer**, professor of management and technology at Northeastern University, **et al, 2023** "How Generative AI Could Disrupt Creative Work," Harvard Business Review, https://hbr.org/2023/04/how-generative-ai-could-disrupt-creative-work (accessed 4/4/24)

A second possible scenario is that unfair algorithmic competition and inadequate governance leads to the crowding out of authentic human creativity. Here, human writers, producers, and creators are drowned out by a tsunami of algorithmically generated content, with some talented creators even opting out of the market. If that would happen, then an important question that we need to address is: How will we generate new ideas? A nascent version of this scenario might already be happening. For example, recent lawsuits against prominent generative AI platforms allege copyright infringement on a massive scale. What makes this issue even more fraught is that intellectual-property laws have not caught up with the technological progress made in the field of AI research. It's quite possible that governments will spend decades fighting over how to balance incentives for technical innovation while retaining incentives for authentic human creation — a route that would be a terrific loss for human creativity.

B. Only the plan solves a generic spiral that destroys human creativity and diversity, increases intolerance and authoritarianism—IP protections are key to stopping this

Cameron **Shackell**, visiting scholar at Queensland University of Technology, October 10, **2023** "Will AI Kill Our Creativity? It Could — If We Don't Start to Value and Protect the Traits That Make Us Human," NAB Amplify, https://amplify.nabshow.com/articles/ic-will-ai-kill-our-creativity/ (accessed 4/4/24)

But there is one key difference between human creativity and AI-driven creativity: the latter doesn't stem from the evolutionary clash of mind and world. AI models don't contain reality. They rely on the complex statistical abstraction of digital data. This limits their real-world creative significance and their capacity to produce "eureka" moments. To differentiate AI-driven creativity from old-fashioned creativity, I have proposed a new term: generic, or g-type, creativity. It formalizes the fact that while AI models are capable of provoking new thought, they are limited by the underlying data they have been trained on. We can expect an explosion in g-type creativity in our future. The danger here is that our increasing use of AI could make us think too much alike, leading to a decrease in cognitive diversity and an increase in cultural tightness. In this scenario, societies would become more rigid in the norms they enforce, and less tolerant of deviations from the status quo. At a population level this would be a creativity killer. The threat isn't just AI-generated movies, TV, books and art. In the future, the homes we live in, the cars we drive (or won't have to drive) and our shared public spaces will all be shaped by AI. We may see our thinking become homogenized under the pressure of increasingly similar environments and experiences. This sameness further put us at risk of a generic spiral. AI models are trained on content we create. So the more we use AI for g-type creativity, the more generic our content will become — and since this will be used to further train AI, the more generic AI outputs will become. While this might be useful for certain specialist tasks — such as consistently interpreting law – it's worrying to contemplate the kind of Orwellian political economy a generic spiral might give rise to. Can We Enjoy AI and Also Preserve Creativity? Balancing and reconciling human creativity with AI isn't as simple as going for regular walks in nature — although that will probably help. Generative AI may well be a transformative technology to rival the printing press or steam engine. Such juggernauts are difficult to resist; we collectively get swept up in the change, uncertainty and alienation they foment. Some of the best minds of our generation are already abandoning other pursuits to try their luck at building and using advanced AI models. Our best chance to remain truly creative is to protect and privilege the human over the artificial. Intellectual property law is key. Any further moves towards legal personhood for AI — such as allowing AI a "fair use" right to train itself on copyrighted material, or have copyright applied to AI outputs — will erode our creative system and risk a generic spiral in human creativity.

C. Preserving human-centered creative production is the only way to stop the global decline in innovation

Nadav **Neuman**, Head of Education & Content Lead at Sapienship, December 8, **2022**
"Relying on generative AI will kill human creativity," Medium, https://medium.com/@nadavneuman/relying-on-generative-ai-will-kill-human-creativity-d83782515b7 (accessed 4/4/24)

Moments like this, when a flash of light in the minds of artists unites social processes with existing artistic patterns to create a novel style that transforms culture, have occurred many times throughout history. This happened when Homo sapiens first realized that they could symbolize an object like a bull using paint on a wall; When monks added harmony and polyphony to the monophonic hymn and represented the multiplicity in the world by way of singing; When the first MCs started rapping; When Marina Abramovich turned her body into art. This breaking of boundaries is what makes human culture move forward. This breaking of patterns is what makes us human: beings who wonder and learn. It is what makes us want to develop more original ideas, change our opinions, and perceive the world differently. This is inspiration. When OpenAI released ChatGPT, the web rejoiced in the human conversations, articles and poems it produced. And really, the AI tools that have been developing at an extraordinary pace lately succeed in imitating human creation in a spectacular way. Seeing the illustrations and texts that these tools — including GPT, Midjourney, Dall-E 2, and Stable Diffusion — produce in response to simple input prompts from their users ("Illustrate a scene of a farmer's market in an old English village, Disney-style," "Write lyrics to a Folk song in the style of Joni Mitchell") makes one understand where the wind is blowing: even if it's still possible to distinguish between a human-made work and an AI work, it is clear that in a few years it will be impossible. And those who think that other fields, like music, are immune to this automation, will be surprised in the coming years. The consequences are enormous. Demand for man-made creations will drop sharply. People will still visit concerts and exhibitions by human artists and read books written by humans (hopefully), but more and more architectural designs, magazine images, scripts, illustrations, comics, pop songs and film music will be automated. It will be cheaper, simpler and no one will know. It will be impossible to distinguish. So what's the problem? In addition to the implications on the job market, human self-esteem, and perception of reality, artificial intelligence lacks the ability to be empathetic or creative, however intelligent it may be. It doesn't know how to invent original things. It knows how to replicate and turn an ocean of data into an output that matches the request entered into it. It doesn't have that flash of light that humans have that in an instant creates something that didn't exist before. The more we rely on AI to create artistic expression for our lives, the more human creativity will diminish. Creators who rely on AI to bypass the creative process will endanger the things that make human societies move forward: imagination, learning, development, inspiration. The process that occurs from the moment an idea sparks in the mind of a creator, through its mixing with other ideas, until the moment when the body produces the idea in physical form, is important: with a brush, clay, keyboard keys, a mouse, a piano. This process, which can be very long, is critical. Skipping it means causing damage to the human imagination and the effort to learn techniques, to train the mind, to invent new ways of expression, to overcome material and spiritual obstacles. To skip it means to break the chain during which art passes and is perfected through the generations. Relying on AI alone means the end of new ideas. The more we rely on AI, the less we will see revolutions like cave paintings, polyphony, rap, performance art, impressionism, punk, Dada. There will only be more of the same. It will be beautiful, aesthetic, cheap and simple. But the spirit of human creativity will weaken and fade away.

D. This crowding out of human creativity risks civilizational stagnation—an eventual end to imagination, learning, and art

Jasper **Kense**, UX Designer, April 23, **2023**
"AI is about to kill creativity," UX Collective, https://uxdesign.cc/ai-is-about-to-kill-creativity-15ddb2cc1d81 (accessed 4/4/24)

But just as the steam engine resulted in a climate crisis, AI might kill innovation globally. AI is inherently based on the past, and true creativity is, in its current state, only available through humans. That is why we should always think about a way to include humans in any way we use AI, especially when designing AI systems. We should not create a close-looped AI, but always have the human set up in that system, at the front or at the back. When we as designers of this new AI era, we have to think about the implication of our interactions on human creativity and leave room for that to exist. Only that way we can ensure that we will not end up in a new dark age.

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E. Creativity is necessary for human adaptation and survival, solving myriad impact scenarios

Eduardo **Feo**, UX/UI design strategist, Harvard graduate & adjunct university professor, **2023**
"The Vital Role of Creativity as the Pillar for Human Survival," Bootcamp, https://bootcamp.uxdesign.cc/the-vital-role-of-creativity-as-the-pillar-for-human-survival-b4c0675f9473 (accessed 3/23/24)
In addition to adaptation, creativity plays a crucial role in problem-solving. Whether it's addressing environmental concerns, conflicts, or resource scarcity, creative thinking is at the core of devising sustainable solutions. It encourages us to explore unconventional paths, experiment with new technologies, and embrace interdisciplinary approaches. By harnessing our creative potential, we can develop cleaner energy sources, sustainable agriculture practices, and innovative conservation efforts. Creative problem-solving is not only about surviving in the present but also about ensuring a better future for generations to come. In an ever-changing world, human survival relies on our ability to think, adapt, and create. Creativity is the bedrock upon which we build solutions, adapt to challenges, and shape our future. It's the bridge that connects our past, present, and future, and it is a testament to the extraordinary resilience and potential of the human spirit. Embracing and nurturing creativity is not merely a choice; it's a necessity for our continued existence and prosperity on this planet.

Alternative Affirmative Framework

Cost-benefit analysis and existential impacts are insufficient to resolve AI copyright policy questions—we should prioritize the consistency and principles of copyright law

Matthew **Sag**, Professor of Law in Artificial Intelligence, Machine Learning, and Data Science at Emory University, **2023**
"Fairness and Fair Use in Generative AI," Digital Commons, https://digitalcommons.wcl.american.edu/cgi/viewcontent.cgi?article=1120&context=research (accessed 3/25/24)

In theory, a purely cost-benefit approach to fair use would end up with the entire question turning on whether the judge believed that the supposed existential risk from AI was a 1% likelihood, or a 0.00001% likelihood. A permissive fair use ruling might unshackle the next generation of a socially productive technology, or it might will bring about Skynet and the singularity. Perhaps talking about existential risk seems too far-fetched. But we see the same problem in miniature when the very same author argues in one article that the use of copyrighted works as training data for machine learning should be fair use because it leads to more balanced data and thus reduces bias, and then in a subsequent article argues that training facial recognition software on copyrighted works should not be fair use because face surveillance harms marginalized communities. Should the fair use status of machine learning depend on such policy judgments? Should a court find that scraping wildlife photos off Instagram to train an algorithm to detect and identify zebras for conservation purposes is fair use, but that undertaking the same process for detecting and identifying faces is not? Should the copyright case against Stable Diffusion and Midjourney turn on whether text-to-image software creates more jobs than it destroys? Suggesting that copyright should not be directly responsive to these broader public interest arguments is not the same as saying these issues don't matter. There is some space for value pluralism in copyright adjudication, but fair use, and copyright law in general, should turn on coherent legal principles, not abstract policy judgements. Law reviews and court judgments are full of praise for the notion of that copyright law should strive for balance to achieve its ultimate objectives. It's hard to disagree, but the nature of this balance is easily misunderstood. The balance that copyright law strives for is not just some ad hoc compromise or a shifting equilibrium of whatever might seem to maximize social welfare minute-by-minute. Copyright should not be an instrument of raw social policy; nor should fair use. The balance we are looking for in copyright should come from the application of consistent principles that are derived from the fundamental structure of copyright law.

Inherency Extensions

Generative AI inevitably triggers copyright violation because of the necessity of training data—fair use is insufficient justification

Matthew **Sag**, Professor of Law in Artificial Intelligence, Machine Learning, and Data Science at Emory University, **2023**
"Fairness and Fair Use in Generative AI," Digital Commons, https://digitalcommons.wcl.american.edu/cgi/viewcontent.cgi?article=1120&context=research (accessed 3/25/24)

The first stage in developing a machine learning model, once you know what you want the model to do and how you want it to do it, is identifying and obtaining access to the relevant training data—the more data the better. There are many different types of generative AI, and it is possible that some were trained by exposure to the training data without a locally stored copy, but that is uncommon. Typically, companies like OpenAI, Google, Meta, Anthropic, Stable Diffusion and Midjourney train their AI models using locally stored content. There are sound technical reasons for using locally stored copies of the training data, but there is no doubt that such copying triggers the reproduction right under Section 106(1) of the Copyright Act. As I will describe in more detail, in general, this process of gathering and pre-processing the training data is the first set of copyright-relevant activities in the process of developing a machine learning model that is capable of generating new text, art, or new music. Most of the time, it is also the last. Once the training data has been gathered and pre-processed, the process of training language models like GPT-4 and LLaMA, or image models like Stable Diffusion shouldn't create additional copies of the training data or any kind of derivative work based on the training data. Despite this, the fact that training is almost inevitably preceded by copying is enough to trigger colorable claims of copyright infringement. Additionally, there are some notable exceptions to the above general description—sometimes machine learning models do in fact copy the training data and reproduce objects arguably similar to the training data in output. For both these reasons, recent lawsuits alleging copyright infringement by generative AI must be taken seriously. There are some key differences between these lawsuits, and they raise several causes of action beyond copyright, but each one argues (or implies) that fair use is insufficient justification for the massive amount of unauthorized copying required to assemble the training data for generative AI.

A vast majority of LLMs massively violate copyright

Ben **Guarino**, associate technology editor at Scientific American, **and** Ed **Newton-Rex**, founder of Fairly Trained, March 11, **2024**
"This Computer Scientist Seeks a Future Where AI Development Values Copyright," Scientific American, https://www.scientificamerican.com/article/artificial-intelligence-copyright-fairly-trained/ (accessed 3/31/24)

There are plenty of generative AI models out there, and some of them are made by the largest tech corporations in the world. You've certified nine of them—all from relatively small companies. Why is that? I intentionally went with smaller AI companies because, in general, for this kind of thing, they can move faster. You don't have the kind of red tape that you have at some of the bigger companies. Having said that, of course, clearly, many of the largest generative AI companies out there today couldn't get certified because they don't live up to this standard. All of the first models you've certified involve music, audio or images. None generate text. Is there something inherent in the process of developing an AI chatbot that makes it more difficult to certify? I don't know of any large language model right now that could get certified. No one has even come close to releasing a model where all of the text is licensed or public domain or under the right sort of open license. There is a school of thought among generative AI proponents that this is all fair use, and they should get as much data as they can. And that involves scraping the Internet and getting all the text they can. Unfortunately, in the past year and a half or couple of years, that has been the way that text generation and much generative AI has gone—partly because it's been a race to develop the biggest and best models as quickly as possible, to get as much funding as possible, to become the big player in the space. And frankly, it's because people feel they can get away with it.

Inherency Extensions

AI generative text and art is 100% derivative from original works

Ian **Krietzberg**, reporter for The Street, December 23, **2023**
"Human creativity persists in the era of generative AI," The Street, https://www.thestreet.com/technology/human-creativity-persists-era-of-generative-artificial-intelligence (accessed 4/5/24)

Large Language Models (LLMs) — like ChatGPT — are, at their core, predictive models. Trained on an enormous quantity of data (the first "L" in "LLM") that includes books, newspaper articles, social media content, photos and videos, the output of any generative AI model is tied directly to its input, something that cannot quite be said for humans. The Atlantic reported in September that a dataset called "Books3" was used to train models by Meta, Bloomberg and others. The dataset included more than 191,000 books, the basis of a July lawsuit filed against Meta by writers Sarah Silverman, Richard Kadrey and Christopher Golden. Generative text models, according to AI researcher Dr. John Licato, essentially output a "probability distribution that's defined over a set of possible tokens." "There's a very specific mathematical function that it's trying to optimize when it's doing that training process," he told TheStreet. "It's trying to make it so that the probability distribution best reflects the training data." Though Licato noted some similarities between the creative processes of humans and AI models, he said that there is an "inherent limit" to what LLMs can actually output. Stability diffusion and high-quality datasets When it comes to diffusion image generation — a method employed by Stability AI — models learn the base construction of an image by removing the noise from images in a given dataset so they can produce variations of each image. The artist lawsuit against Stability and its peers notes that "the primary objective of a diffusion model is to reconstruct copies of its training images with maximum accuracy and fidelity."

AI image products are "copyright laundering" designed to give consumers cheap copies of original art, guaranteeing exploitation of artists

Ian **Krietzberg**, reporter for The Street, December 23, **2023**
"Human creativity persists in the era of generative AI," The Street, https://www.thestreet.com/technology/human-creativity-persists-era-of-generative-artificial-intelligence (accessed 4/5/24)

Another case, brought by a group of visual artists against Stability AI, Midjourney and other companies, argues a similar premise: "AI image products are primarily valued as copyright-laundering devices, promising customers the benefits of art without the costs of artists." The companies involved have argued that the content they train their models on is "fair use," a claim that could, if true, supersede copyright violations. The U.S. Copyright Office said in August that it had undertaken a study of copyright law as it relates to generative AI to determine how best to treat the sector. "Training generative AI models in this way is, to me, wrong," Ed Newton-Rex, a composer and technologist, wrote in a Nov. 15 op-ed. "Companies worth billions of dollars are, without permission, training generative AI models on creators' works, which are then being used to create new content that in many cases can compete with the original works." Newton-Rex in November resigned from his position leading Stability AI's Audio team, based, he said, on a disagreement over the company's impression that copyrighted work is fair use. Saying that the act of training on copyrighted work amounts to the exploitation of creators, Newton-Rex questioned the model as an unjust disruptor of existing copyright practices in the arts. He has instead supported generative models that are trained only on licensed content and are further transparent about the content in their training sets.

Solvency Extensions

Copyright and author protections are key to creative industry growth

Velibor **Božić**, research scientist in Croatia, January **2024**
"Creative Industries: The Future of Innovation and Impact," Research Gate, https://www.researchgate.net/publication/377768310_Creative_Industries_The_Future_of_Innovation_and_Impact (accessed 3/22/24)
Property rights and legal protection are crucial for creative industries as they help to ensure that creators are fairly compensated for their work (25). Intellectual property (IP) rights protect original works of authorship, such as music, literature, art, and software. These rights give creators exclusive control over their creations, allowing them to decide how and when their work is used. IP rights also provide creators with the legal tools to protect their work from unauthorized copying, distribution, or use. Copyright is the most important IP right for creative professionals. It protects original works of authorship, including books, songs, paintings, films, and computer programs. Copyright gives creators the exclusive right to reproduce, distribute, publicly perform, and display their work.

Plan creates coexistence guaranteeing the best development of AI tech for creativity

Ben **Guarino**, associate technology editor at Scientific American, **and** Ed **Newton-Rex**, founder of Fairly Trained, March 11, **2024**
"This Computer Scientist Seeks a Future Where AI Development Values Copyright," Scientific American, https://www.scientificamerican.com/article/artificial-intelligence-copyright-fairly-trained/ (accessed 3/31/24)
I should say: I am a proponent of generative AI. I think generative AI is a great thing. I would probably use it for one of the things that I think it's very useful for, which is as a creative spark, as inspiration. Describe to me the future of generative AI in which it can peacefully coexist alongside human artists and acts of creation. There's a big part of the world that got very excited about creating material from scratch—all of the people using Midjourney on Twitter [now known as X] to, you know, reimagine some painting in the style of Grand Theft Auto. I think that's all a waste of time. The exciting future is in this technology's functionality as an assistive technology.... You actually can democratize creativity when you start to imagine the applications of this tech within the education system, if you can start to give people essentially personalized tutors—scalable, cheap, personalized tutors to teach them how to make things—especially in fields like music while music education has been on the decline in terms of funding in the U.K., where I come from. But I think this should be done in a way that respects the creators behind the training data. Training data are one of the key three resources you need to build these systems: you need training data, you need GPUs [graphics processing units, chips that excel at running multiple computations simultaneously], and you need AI talent. People are coming in and spending millions of dollars on the latter two. I don't see how it can be justified trying to get for free the other key resource, without which these systems would not work.

Solvency Extensions

Only the plan stops a massive loss of creativity that will disrupt human adaptation and problem-solving

Brian **Uzzi**, Professor of Leadership and Organizational Change at Northwestern University, May 26, **2023** "Will AI Kill Human Creativity?" Kellogg Insight, https://insight.kellogg.northwestern.edu/article/will-ai-kill-human-creativity (accessed 4/4/24)
So <u>the long game in understanding AI's impact on jobs and innovation shouldn't be just about money and power, but the potential death of human creativity</u>, one AI neural network at a time. If consumers just want immediate gratification, and businesspeople want profits, Fake Drake and its ilk are the logical future across creative fields. And if that's the case, <u>what will be the motivation for the next Mozart, Faulkner, or Curie to step forward? If innovators and artists come to realize that their future exists only as long as it take to copy them, why bother trying at all? Ironically, the faster AI changes things, the faster we will be coming to a creativity halt. This problem is not trivial. Innovation is what keeps the human race ahead of its own problems. If humans don't exercise their creativity or fail to be rewarded for it, creativity will be lost</u> – we lose what we don't use, just like with muscle. So what do we do about it? Stemming this creativity crisis will require thoughtful leadership. Patent law was created to protect the little guy and incentivize innovation. As a start, <u>the legal profession needs to update our conceptions of intellectual property, along with the rules and restrictions for using someone else's intellectual property – others' creative work can't just be "fair game" for AI,</u> as the Writers' Strike is arguing.

Informed consent solves artist buy-in

Anna-Maria **Piskopani**, Research Fellow, Faculty of Science, University of Nottingham, et al, July **2023** "Responsible AI and the Arts: The Ethical and Legal Implications of AI in the Arts and Creative Industries," Trustworthy Autonomous Systems Hub conference, https://ora.ox.ac.uk/objects/uuid:a803ecc0-c8cc-42a0-be17-848334dc3cf5/files/r5d86p1015 (accessed 3/22/24)
In recent years, agencies have sought to regulate AI – in the UK, policymakers are not currently considering regulation beyond the Online Safety Bill, but have not excluded the possibility.6 The EU, USA and China have all proposed new AI regulation. <u>Artists' associations are suggesting a specific section in the EU AI Act dedicated to the creative arts, including safeguards requiring that rights-holders give explicit, informed consent before their work is used by AI tools.</u>

Creativity Loss Extensions

AI derivations destroy artistic creativity for two reasons: economic impoverishment and atrophying skills and forms of art

Anna-Maria **Piskopani**, Research Fellow, Faculty of Science, University of Nottingham, et al, July **2023** "Responsible AI and the Arts: The Ethical and Legal Implications of AI in the Arts and Creative Industries," Trustworthy Autonomous Systems Hub conference, https://ora.ox.ac.uk/objects/uuid:a803ecc0-c8cc-42a0-be17-848334dc3cf5/files/r5d86p1015 (accessed 3/22/24)

AI platforms' supporters claim that these platforms can 'democratise' the creative process, as such tools put the power of creativity into the hands of more people, enabling them to participate in high-value content creation.[14] Artists question whether this 'democratisation' will benefit society as whole or just a few private companies who can monetise the "essence" of living artists' work and appropriate humanity's collective imagination and knowledge.[9] As artists are not compensated, they fear that these technologies may have a detrimental impact on their income. Furthermore, upand-coming artists could lose assignments for small projects, which they often rely on to build up their portfolio. There is also a risk of artistic skills and forms of art atrophying.

Artists are being mass-robbed by data-scraping that creates artificial derivatives that compete with and drive down the artists themselves

Anna-Maria **Piskopani**, Research Fellow, Faculty of Science, University of Nottingham, et al, July **2023** "Responsible AI and the Arts: The Ethical and Legal Implications of AI in the Arts and Creative Industries," Trustworthy Autonomous Systems Hub conference, https://ora.ox.ac.uk/objects/uuid:a803ecc0-c8cc-42a0-be17-848334dc3cf5/files/r5d86p1015 (accessed 3/22/24)

Many artists and illustrators say that AI generators are often trained not only by public domain images but also by copyrighted images scraped from their portfolios on sites like Pinterest and Artstation without their knowledge or license. For example Greg Rutkowski, an established Poland-based digital creator, uses classical painting styles to create dreamy fantasy landscapes. Rutkowski's name has been used as a prompt around 93,000 times and when he discovered this, he realised the risks these systems posed.[3] On January 2023 three artists (Sarah Andersen, Kelley McKernan, and Karla Ortiz) filed a class action against three companies offering AI image generators (Stability AI, Midjourney, DeviantArt). In their complaint, the artists argue that the companies obtained access to their copyrighted works through web scraping. The outputs are derivative works of the images it draws from as they permit users to create works "in the style of…" . They also claim that the AI-created works could compete against their own existing work in the marketplace. In the following weeks, Getty Images initiated copyright infringement legal proceedings against Stability AI both in a US and an UK court, with similar claims.

Creativity Loss Extensions

AI proliferation increases search costs, locking in the dominance of a small number of elite artists

David **De Cremer**, professor of management and technology at Northeastern University, **et al, 2023**
"How Generative AI Could Disrupt Creative Work," Harvard Business Review, https://hbr.org/2023/04/how-generative-ai-could-disrupt-creative-work (accessed 4/4/24)
Yet even in this relative dystopia, there remains a significant role for humans to make recommendations of existing content in this ecosystem. As in other very large content markets, like music streaming services, curation will become more valuable relative to creation as search costs rise. At the same time, however, high search costs will lock-in existing artists at the expense of new ones, concentrate and bifurcate the market. This will then result in a small handful of established artists dominating the market with a long tail of creators retaining minimal market share.

Creativity Impacts

Creative arts decrease violence and criminality

Jessica K. **Bone**, researcher in Behavioural Science and Health, Institute of Epidemiology & Health Care, University College London, **et al, 2022**
"Arts and Cultural Engagement, Reportedly Antisocial or Criminalized Behaviors, and Potential Mediators in Two Longitudinal Cohorts of Adolescents," Journal of Youth and Adolescence, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8940513/ (accessed 3/23/24)
<u>Arts and cultural engagement is a potential strategy for reducing or preventing reportedly antisocial or criminalized behaviors</u> (those previously and problematically termed as "delinquent") in adolescence. However, most research to date has focused on arts-based interventions and has not tested arts and cultural engagement in large population-based longitudinal studies. This study investigated whether arts and cultural engagement reduced reportedly antisocial or criminalized behaviors in two large nationally representative cohorts, the National Longitudinal Study of Adolescent to Adult Health (n = 10,610; 50% female, 72% White, age range = 11–21 mean = 15.07) and the National Education Longitudinal Study of 1988 (n = 15,214; 50% female, 73% White, age range = 13–16 mean = 14.38). Structural equation modelling also allowed exploration of two potential mechanisms that might link arts and cultural engagement to reportedly antisocial or criminalized behaviors (self-control and attitudes towards these behaviors). <u>More arts and cultural engagement was associated with fewer reportedly antisocial or criminalized behaviors, better self-control scores, and fewer positive perceptions of reportedly antisocial or criminalized behaviors concurrently and one to two years later. Arts and cultural engagement may provide opportunities for adolescents to realize positive developmental outcomes, reducing their risk of reportedly antisocial or criminalized behaviors.</u>

Creativity Loss: Political Violence Scenario

AI proliferation will increase politically divisive content and worsen filter bubbles

David **De Cremer**, professor of management and technology at Northeastern University, **et al, 2023**
"How Generative AI Could Disrupt Creative Work," Harvard Business Review, https://hbr.org/2023/04/how-generative-ai-could-disrupt-creative-work (accessed 4/4/24)

In fact, we expect the pressure to personalize to go up fast as generative AI carries such great potential to satisfy the need to create content that is increasingly representative of the specific consumer. As a case in point, Buzzfeed recently announced it will personalize their content such as quizzes and tailor-made rom-com pitches with OpenAI's tools. (They don't plan to use generative AI in their newsroom, however.) If the practice of enhanced personalized experiences is applied broadly, then we run the risk to lose the shared experience of watching the same film, reading the same book, and consuming the same news. In that case, it will be easier to create politically divisive viral content, and significant volumes of mis/disinformation, as the average quality of content declines alongside the share of authentic human content. Both would likely worsen filter bubble effects.

This increases political violence and undermines democracy

Ipsos, March 21, **2023**
"Violence in democracies: The role of fake news, disinformation and social media," Ipsos, https://www.ipsos.com/en/violence-democracies-role-fake-news-disinformation-and-social-media (accessed 4/4/24)

In this Ipsos analysis for Les Entretiens de New York, we show how violence, although opposed by most US and French citizens, is still seen by a not-insignificant minority in both countries as a legitimate course of action to achieve political objectives. A quarter of French people consider politically motivated violence acceptable under some circumstances, while 15% of Americans refuse to condemn it. Support for democracy as a political system remains strong in both countries – but over a quarter of people say they are open to experimenting other political regimes or ready to side-line some key democratic principles. There is a desire for more direct democracy, and heavy criticism and suspicion vis-à-vis politicians. A positive note is that, while the feeling that "the system is broken" remains strong in many of the world's largest countries, including the US and France, this sentiment has receded in all the places where major elections have recently taken place. Evidence that democracy works? Do fake news and disinformation, amplified by social media, play a role in feeding this neo-violent climate? Our polls show that, for large sections of the population, fake news are often difficult to untangle from facts. There is also a surprising degree of scepticism vis-à-vis science: for 50% of French people, the fact that a scientist specialising in a given area demonstrates a fact does not mean this fact is correct. 40% say they trust their own personal experience more than explanations from scientists to decide whether a fact is scientifically correct or not. This impacts the political sphere.

Arts Industries Harms Extensions

Apparent popularity of AI is really artists being forced to compromise their art in order to compete in the market

Jingyu **Shi**, Ph.D. Candidate in Electrical and Computer Engineering, Purdue University, et al, **2023** "Understanding Generative AI in Art: An Interview Study with Artists on G-AI from an HCI Perspective," Woodstock ACM Symposium on Neural Gaze Detection, https://arxiv.org/pdf/2310.13149.pdf (accessed 3/21/24)

As was aforementioned, success in the competition induced by G-AI is not necessarily determined by one's artistic skills and talents. Nevertheless, according to our deeper investigation, it is rather dominated by the usage of G-AI, i.e., artistic works with G-AI overwhelm those without it, regardless of the artistic attributes or aesthetics they may contain. Conveyed in the competition, this counter-intuitive rationale has compelled artists to yield to the usage of G-AI. On their motivations for using G-AI, eighteen of the participants said that they were using G-AI mostly in order not to fail in competing against their peers, four posited G-AI as merely a fun tool to obtain ideation, inspiration, or to create with, and only two collaborated with G-AI in pursuit of higher quality of artwork in their disciplines.

GenAI hurts artists in multiple genres and destroys industry sustainability

Jingyu **Shi**, Ph.D. Candidate in Electrical and Computer Engineering, Purdue University, et al, **2023** "Understanding Generative AI in Art: An Interview Study with Artists on G-AI from an HCI Perspective," Woodstock ACM Symposium on Neural Gaze Detection, https://arxiv.org/pdf/2310.13149.pdf (accessed 3/21/24)

For P10, they faced the conflict between his pursuit of realistic photographs and consumers' tastes for different styles. P10 did not and will not have the same bandwidth as G-AI to experiment with different styles of the same photograph in a short time. Nevertheless, the chance is either his at that very moment or an easy grasp of other competing photographers who would give in to G-AI. Under this circumstance, P10 compromised his experience as a user of the G-AI in order to survive the competition with other photographers, regardless of the quality of the photograph generated by the G-AI. Showcases of similar compromises emerged among other participants. Painters (P13, P15, and P16) and Mangakas (P1-P5) in our interviews expressed their concerns about possible plagiarism from appropriations of their products as the training data of G-AI models. P5 brought up their experience of their work being plagiarized by style-transferring G-AI. An AI-generated drawing is accused by him of "copying directly my painting in a different style". P7, a music producer, reported that he used G-AI to generate variations of soundtracks with a poorly designed interface with non-intuitive interactions and incomprehensible terminologies. Yet, they had no other choice because it was the only software available for the variations they needed. Moreover, P10 and P2, although from different domains, highlighted the similar differences they experienced between using G-AI with (1) rigorous terms (henceforth, rigorous G-AI) where artists' data will not be shared to train the AI and (2) lenient terms (henceforth, lenient G-AI) where artists' data will be shared. According to P2, rigorous G-AI "does not have variations in styles in the Mangaka [as much as]" lenient G-AI, which they used eventually. P10 also noted their tendency to lenient G-AI because they can "...iterate my work referencing others photographs... [and] transfer the light and shadow to my shots...". We conclude that despite the efficiency brought into the artistic workflows, G-AI has left at least one negative impact on the artists' community - It forced the artists into an N-person prisoner's dilemma, where the artists are left with two choices: either equip themselves with G-AI in the workflow or decline it. Due to its incomparable capabilities in some procedures of artistic workflows, G-AI puts the decliners in an unfavorable position in their peer competition, where their chances and profits are deprived. Such consequences are insufferable for any individual who wishes to sustain themselves in the art industry. Subsequently, the outcome of this dilemma is suboptimal - all artists resort to the usage of G-AI, compromising their user experience or data copyright to survive in the peer competition. This outcome eliminates the comparisons between current G-AI and human factors through an intrusive deployment of G-AI in the artistic workflows. It also conceals part of the discussions on the comparisons between different designs and applications of G-AI due to the overwhelming capabilities of G-AI in art. To this end, we further conclude that this suboptimal outcome is negative towards motivating research in Human-GAI symbiosis, posing obstacles and difficulties on the path of developing better interaction techniques and investigating the potential ethical problems within the scope.

Music Industry Harms Extensons

Music industry is crashing now, causing a steep decline in sustainable human creativity

Justine **Magowan**, J.D. Candidate at University of California College of the Law and Executive Articles Editor of the UC Law Journal, **2023**
“'It’s Like I’ve Got This Music in My Mind': Protecting Human Authorship in the Age of Generative Artificial Intelligence,” Hastings Law Journal,
https://repository.uclawsf.edu/cgi/viewcontent.cgi?article=4058&context=hastings_law_journal (accessed 3/21/24)
The music industry stands on the brink of a crisis. With unpredictable judicial standards that are inconsistent across the country, plaintiffs seeking to protect their musical works against copyright infringement face a heavy burden of proof, especially when facing defendants who are more well-known and more well-funded. Not only that, but plaintiffs may not receive their day in court given that powerhouse artists like Taylor Swift, Sam Smith, and Bruno Mars have chosen to settle rather than defend their musical works in court. Now, Generative Artificial Intelligence (“Generative A.I.”) and A.I.-generated music will inevitably send the music industry into a tailspin—and the law is not ready to grapple with the complexities that will arise. To wit, Generative A.I. is poised to threaten the very principles on which copyright law is founded: To encourage (human) creativity by protecting original works of expression.

AI generated music infringes on artists’ exclusive rights

Justine **Magowan**, J.D. Candidate at University of California College of the Law and Executive Articles Editor of the UC Law Journal, **2023**
“'It’s Like I’ve Got This Music in My Mind': Protecting Human Authorship in the Age of Generative Artificial Intelligence,” Hastings Law Journal,
https://repository.uclawsf.edu/cgi/viewcontent.cgi?article=4058&context=hastings_law_journal (accessed 3/21/24)
In October 2022, the Recording Industry Associated of America (“RIAA”) responded to a submission request from the Office of the U.S. Trade Representative, listing A.I.-generated music platforms as threats to the music industry.115 The RIAA wrote that training A.I. music generators on their members’ works is an authorized use that “infringes [their] members’ rights by making unauthorized copies of [their] work.”116 In effect, to the RIAA, “the files these [A.I.] services disseminate are either unauthorized copies or unauthorized derivative works of [their] members’ music.”117 In other words, A.I.-generated music infringes upon a copyright owner’s statutorily guaranteed exclusive rights “to reproduce the copyrighted work”118 and “to prepare derivative works.”

Economic Growth Extensions

Creatives are key to economic growth—overcoming challenges and uncertainties is key

Velibor **Božić**, research scientist in Croatia, January **2024**
"Creative Industries: The Future of Innovation and Impact," Research Gate, https://www.researchgate.net/publication/377768310_Creative_Industries_The_Future_of_Innovation_and_Impact (accessed 3/22/24)

Creative industries, encompassing a diverse range of activities that involve the creation, production, and distribution of cultural goods and services, have long been recognized for their significant role in economic growth, social progress, and cultural vibrancy. From the artistic expressions of musicians, writers, and filmmakers to the innovative products and services developed by designers, engineers, and entrepreneurs, creative industries contribute to the overall well-being of societies by stimulating innovation, fostering entrepreneurship, and promoting cultural diversity. However, the creative industries are not without their challenges. In the ever-evolving digital landscape, they face the onslaught of technological disruptions, the complexities of copyright and piracy, and the fragmentation of audiences. Additionally, the creative workforce is confronted with a skills gap, requiring continuous upskilling and adaptability to thrive in the digital age. Additionally, the global economic landscape is subject to uncertainty, posing potential risks to the financial stability of creative industries. Despite these challenges, the future of creative industries holds immense promise. The growing demand for creative content, coupled with technological advancements in fields like artificial intelligence, virtual reality, and augmented reality, opens up unprecedented opportunities for innovation and impact. The rise of entrepreneurship within the creative realm further empowers individuals and organizations to explore new business models and reach a global audience. Globalization, in turn, facilitates collaboration and knowledge exchange across borders, fostering cross-cultural innovation and the emergence of global creative hubs.

Economic Growth Impacts

Growth is prerequisite for tech advances to solve climate – low growth guarantees mass poverty and starvation

Victor **Hill**, Financial Economist with the International Finance Corporation at the World Bank, November 3, **2020**
"Only capitalism will save the planet," Master Investor, https://masterinvestor.co.uk/economics/only-capitalism-will-save-the-planet/ (accessed 3/23/24)

Rapid advances in technology, facilitated by the free market, have transformed the climate conversation. Whatever Mr Trump's rhetoric on the issue (and he may well be in the departure lounge by the time you read this), the big energy companies, backed by a raft of environmentally conscious investors, are already transitioning towards renewable and zero-fossil fuel energy precisely because it is now economically viable to do so. And in that process, they are making money. Win-win.Outright climate change denial was always a marginal school of thought. Thinking people – of which the business and investment community – understand well that manmade carbon emissions increase the concentration of CO_2 in the atmosphere and thus precipitate a greenhouse effect by which the Earth's atmosphere and seas warm up. That said, there is a respectable scientific debate about how quickly that process is taking place and how quickly it will cause irreversible results such as desertification. And it is perfectly legitimate to question the climate models which climate scientists construct to estimate these outcomes, since many have questionable inputs and methodologies. Claims that we have ten years left to save the planet can and should be challenged, though that should not be an argument for further delay in taking action. The global policy framework has been constructed by the ongoing work of the Intergovernmental Panel on Climate Change (IPCC), an agency of the United Nations (UN). This body laid down two years ago that our target should be to limit the rise in ambient temperature to no more than 1.5 Celsius above pre-industrial levels. That said, there are many climate rebels who believe that this level will itself be disastrous to human and animal life; and still others who claim that even this target is entirely unrealistic given the direction of travel. Ms Thunberg and her disciples would have us shut down the carbon-based economy forthwith. That would cause unparalleled economic disruption, mass unemployment, poverty, adverse health outcomes and – let us be honest – starvation. No mainstream politician is going to get behind that. Zion Lights is a writer who has been an environmental campaigner all her adult life. She doesn't drive, fly or eat meat. In April 2018 she joined XR because she thought it was evidence-based. She soon found that many of its claims were indefensible. She wrote recently: That is the single biggest problem with most environmental groups: they don't offer realistic solutions to the very real climate change threat. What they offer, if you follow their arguments to their logical conclusion, is eco-austerity: that we should all use less energy, stop going on holiday, live in colder homes, and so on[i]. In the latest papal encyclical published on 04 October (the feast day of St. Francis of Assisi), Fratelli Tutti (Brothers All), Papa Francisco wrote that the Covid-19 pandemic had proven that the "magical theories" of market capitalism have failed and that the world needs a new type of politics that promotes dialogue and solidarity. (Perhaps the unjustified restrictionism pursued by First Minister Drakeford in Wales?) In fact, much as I respect Catholic social teaching (having been brought up with it), the best chance we have to solve the immense challenge of climate change and other environmental problems (such as plastic waste in the oceans) is to harness market forces. In this way, the profit motives of finance and technology will re-engineer the global economy completely.

Economic Growth Impacts

Growth-induced tech is the only feasible mechanism to solve the climate—all non-growth alternatives fail

Eric **Levitz**, Senior Writer at New York Magazine, May 17, **2021**
"We'll Innovate Our Way Out of the Climate Crisis or Die Trying," Intelligencer, https://nymag.com/intelligencer/2021/05/climate-biden-green-tech-innovation.html (accessed 3/23/24)

There is also the delusion of "de-growth's" viability. The fact that there is no plausible path for global economic expansion that won't entail climate-induced death and displacement has led some environmentalists to insist on global stagnation. Yet there is neither a mass constituency for this project, nor any reason to believe that there will be any time soon. Freeze the status-quo economy in amber, and you'll condemn nearly half of humanity to permanent poverty. Divide existing GDP into perfectly even slices, and every person on the planet will live on about $5,500 a year. American voters may express a generalized concern about the climate in surveys, but they don't seem willing to accept even a modest rise in gas prices — let alone a total collapse in living standards — to address the issue. Meanwhile, any Chinese or Indian leader who attempted to stymy income growth in the name of sustainability would be ousted in short order. It's conceivable that one could radically reorder advanced economies in a manner that enabled living standards to rise even as GDP fell; Americans might well find themselves happier and more secure in an ultra-low-carbon communal economy in which individual car ownership is heavily restricted, and housing, healthcare, and myriad low-carbon leisure activities are social rights. But nothing short of an absolute dictatorship could affect such a transformation at the necessary speed. And the specter of eco-Bolshevism does not haunt the Global North. Humanity is going to find a way to get rich sustainably, or die trying. Thus, the chasm between the ecologically necessary and the politically possible can only be bridged by technological advance. And on that front, the U.S. actually has the resources to make a decisive contribution to global decarbonization — and some political will to leverage those resources. Unfortunately, due to some combination of fiscal superstitions and misplaced priorities, the Biden administration's proposed investments in green innovation remain paltry. An American Jobs Plan with much higher funding for green R&D is both imminently winnable and environmentally imperative. U.S. climate hawks should make securing such legislation a top priority. The choice before us is techno-optimism or barbarism. If governments are forced to choose between increasing income growth in the present, and mitigating temperature rise in the future, they are going to pick the former. We'll get cheap, lab-grown Kobe beef before we get a U.S. Senate willing to tax meat, and steel plants powered by "green hydrogen" before we get anarcho-primitivism with Chinese characteristics. The question is whether we'll get such breakthroughs before it's too late. Techno-optimism has its hazards, but the progress we've made toward decarbonization has come largely through technological innovation. When India canceled plans to construct 14 gigawatts of new coal-fired power stations in 2019, it did not do so in deference to international pressure or domestic environmental movements, but rather to the cost-competitiveness of solar energy. The same story holds across Asia's developing countries: Thanks to a ninefold reduction in the cost of solar energy over the past decade, the number of new coal plants slated for construction in the region has fallen by 80 percent. Meanwhile, the road to an electric-car revolution was cleared by a collapse in the cost of lithium batteries, the challenge of powering cities with solar energy on cloudy days was eased by a 70 percent drop in the price of utility-scale batteries, and wind power grew 40 percent cheaper.

Economic Growth Impacts

Growth increases life expectancy

Goran **Miladinov**, researcher in Demography, Quantitative Social Research, Population Economics and Development Economics, **2020**
"Socioeconomic development and life expectancy relationship: evidence from the EU accession candidate countries," Genus, https://genus.springeropen.com/articles/10.1186/s41118-019-0071-0 (accessed 3/29/24)
It shows that the life expectancy at birth is largely affected by the population health and socioeconomic development in the country; in other words, when population health and socioeconomic development in a country are getting better, infant mortality rate has decreased; accordingly, the life expectancy at birth appears to have increased. GDP per capita increases the life expectancy at birth through increasing economic growth and development in a country and thus leads to the prolongation of longevity. It can be concluded that the increase in the rate of GDP per capita as well as the reduction in the infant mortality rate has the same effect on the life expectancy in all five countries. Causality that runs one-way from life expectancy at birth to infant mortality rate was found. Both lower level of infant mortality and higher GDP per capita in these five countries have valuable meaning for their longevity.

The best and most research supports the relationship between growth and life expectancy

Goran **Miladinov**, researcher in Demography, Quantitative Social Research, Population Economics and Development Economics, **2020**
"Socioeconomic development and life expectancy relationship: evidence from the EU accession candidate countries," Genus, https://genus.springeropen.com/articles/10.1186/s41118-019-0071-0 (accessed 3/29/24)
The correlation between GDP and life expectancy seems well established (+ 0.67). However, from our results, it is not difficult to indicate that the socioeconomic development (the standard of living, economic conditions, poverty and inequality levels, and health conditions) play a major role in the rise of life expectancy and longevity. The increased economic development, higher living standard, and improved health remain as relevant factors for rise of life expectancy and prolongation in longevity. These findings are valid and relevant in our research study for all five countries. Especially, it is most relevant for Albania, Bosnia and Herzegovina, Serbia, and Macedonia, to some extent for Montenegro as well. The direct effect of the level of the economic development and material standards of living as measured through the GDP per capita has a strong direct effect to the life expectancy and longevity. The dominant feature of the estimated model is the straight line of positive influence that runs from economic conditions and the economic development and exerts influence over the life expectancy within these countries. This path is much stronger than any other direct or indirect connection. In other words, the economic conditions provide the explanatory power, and as a result, the direct path from economic conditions to the demographic event, in this case, life expectancy and longevity, could not be ignored. Although the findings on the relation of life expectancy and GDP per capita do not add anything new to the previous literature, this study clearly confirmed the findings from Cutler et al. (2006) which pointed out that life expectancy is profoundly lower for countries with lower levels of per capita income and that there was existed also a positive relationship between income and longevity within countries. Further, also Sickles and Taubman (1997) found evidence that life expectancy increased as a country improved its standard of living, and the results of our study showed the same findings. The results are also in line with the points and findings of Avdeev et al. (2011) regarding the relationship between GDP per capita and life expectancy.

Climate Impacts

Climate crisis threatens the survival of 1 billion children in marginalized communities

UNICEF, August 19, **2021**
"One billion children at 'extremely high risk' of the impacts of the climate crisis," UNICEF, https://www.unicef.org/press-releases/one-billion-children-extremely-high-risk-impacts-climate-crisis-unicef (accessed 3/23/24)
Launched in collaboration with Fridays for Future on the third anniversary of the youth-led global climate strike movement, the report finds approximately 1 billion children – nearly half the world's 2.2 billion children – live in one of the 33 countries classified as "extremely high-risk". These children face a deadly combination of exposure to multiple climate and environmental shocks with a high vulnerability due to inadequate essential services, such as water and sanitation, healthcare and education. The findings reflect the number of children impacted today – figures likely to get worse as the impacts of climate change accelerate. "For the first time, we have a complete picture of where and how children are vulnerable to climate change, and that picture is almost unimaginably dire. Climate and environmental shocks are undermining the complete spectrum of children's rights, from access to clean air, food and safe water; to education, housing, freedom from exploitation, and even their right to survive. Virtually no child's life will be unaffected," said Henrietta Fore, UNICEF Executive Director.

It's an imperative to act because of disproportionality and vulnerability

UNICEF, August 19, **2021**
"One billion children at 'extremely high risk' of the impacts of the climate crisis," UNICEF, https://www.unicef.org/press-releases/one-billion-children-extremely-high-risk-impacts-climate-crisis-unicef (accessed 3/23/24)
"Climate change is deeply inequitable. While no child is responsible for rising global temperatures, they will pay the highest costs. The children from countries least responsible will suffer most of all," said Fore. "But there is still time to act. Improving children's access to essential services, such as water and sanitation, health, and education, can significantly increase their ability to survive these climate hazards. UNICEF urges governments and businesses to listen to children and prioritise actions that protect them from impacts, while accelerating work to dramatically reduce greenhouse gas emissions." Without the urgent action required to reduce greenhouse gas emissions, children will continue to suffer the most. Compared to adults, children require more food and water per unit of their body weight, are less able to survive extreme weather events, and are more susceptible to toxic chemicals, temperature changes and diseases, among other factors.

Science Education Scenario

Creative arts are key to science and education

Velibor **Božić**, research scientist in Croatia, January **2024**
"Creative Industries: The Future of Innovation and Impact," Research Gate, https://www.researchgate.net/publication/377768310_Creative_Industries_The_Future_of_Innovation_and_Impact (accessed 3/22/24)

Creative industries have a significant impact on science and education, playing a vital role in enhancing knowledge dissemination and making learning more engaging and accessible. They leverage storytelling, visual arts, and other creative mediums to communicate complex scientific concepts and educational ideas in an engaging and relatable manner (27). In science, creative industries • Visualize complex data and concepts: Visuals like infographics, animations, and interactive charts can effectively convey abstract scientific concepts to a wider audience, making them more understandable and memorable. • Promote scientific literacy and public understanding of science: Creative storytelling through documentaries, docuseries, and educational films can spark curiosity and encourage critical thinking about scientific topics. • Create educational games and simulations: Interactive games and simulations can provide immersive learning experiences that allow students to apply scientific principles in a hands-on manner. • Develop immersive learning environments: Augmented reality (AR) and virtual reality (VR) technologies can create immersive learning experiences that allow students to explore scientific phenomena in a virtual world.

Creative arts increase scientific literacy and critical thinking

Velibor **Božić**, research scientist in Croatia, January **2024**
"Creative Industries: The Future of Innovation and Impact," Research Gate, https://www.researchgate.net/publication/377768310_Creative_Industries_The_Future_of_Innovation_and_Impact (accessed 3/22/24)

In education, creative industries • Personalize learning experiences: Creative tools and resources can enable educators to create personalized learning experiences that cater to different learning styles and preferences. • Engage students in creative learning activities: Creative activities like storytelling, art projects, and design challenges can motivate students and make learning more enjoyable. • Develop digital learning platforms: Creative industries can help design and develop engaging digital learning platforms that combine multimedia content, interactive exercises, and personalized feedback. • Promote creativity and critical thinking skills: Creative learning approaches can foster innovation, problem-solving, and critical thinking skills in students. The integration of creative industries into science and education has the potential to revolutionize the way we learn and understand the world around us. By making scientific concepts and educational ideas more engaging and relatable, creative industries can empower individuals to become lifelong learners and critical thinkers.

Science Education Scenario

Creative arts are a prerequisite for effective science education

Verónica A. **Segarra**, Professor of Biology, High Point University, **2018**
"STEAM: Using the Arts to Train Well-Rounded and Creative Scientists," Journal of Microbiology Education, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5969448/ (accessed 3/23/24)
STEM disciplines, as both professions and practices, are functionally dependent on visual modes of problem solving and communication, including schematics, symbolic logic, scientific illustration, and photography (1, 3). STEAM projects recognize the value of art as not simply a vehicle for scientific content, but as a complementary contribution. For example, many STEAM projects recalibrate the typical relationship between science and illustration, resulting in images of scientific phenomena that mutually exalt STEM and artistic merit (4–6). Similarly, the proliferation of STEAM scientific image contests speaks to the power of art as a pathway to attract participation and interest in STEM (7–10). Although scientific illustration is a familiar platform for STEAM, it is not the only model for productive scientific–artistic collaborations. Visual, spatial, and graphic arts have the potential to reveal science and culture in distinct ways that are complementary to our traditional ways of understanding science (2, 11). Fostered through artist residencies as well as individual initiatives, STEAM efforts are yielding visual and spatial art that turns a new lens on the structure of scientific work (2, 12, 13). For example, art can reinterpret scientific themes, providing us with new ways to look at our understanding of the natural universe—from finding new ways to visualize oceanic data that reveal the impact of climate change on marine life (14) to new points of view on the microscopic from artists shadowing scientists at the lab bench (15). Art can also make scientific thought and culture relevant to a broad audience. The arresting visual depiction of the intersection of synthetic biology with urban design and human reproduction (16) or of research life in the arctic provides a "hook," to both scientists and nonscientists, to pause, look closer, and reflect (16, 17). For these reasons, STEAM among scientists and visual/spatial artists has been particularly fruitful in three domains: helping science become accessible and inclusive; clarifying the meaning of scientific concepts and culture; and fostering collaborative works in which scientific and esthetic components are mutually enhanced.

Scientific literacy key to solve climate crisis

Carolyn **Parker**, director of the Master of Arts in Teaching Program in the School of Education at American University, May 13, **2020**
"STEM education is the key to raising a generation of climate change leaders," The Hill, https://thehill.com/changing-america/opinion/497609-stem-education-is-the-key-to-raising-a-generation-of-climate-change/ (accessed 3/23/24)
There is a scientific consensus that climate change is impacting our planet, and with vulnerable communities often being the worst hit, we need to discover more ways to mitigate it. As an educator who specializes in science education, I believe that one of the best ways we can equip our society to address climate change is to raise our overall level of scientific literacy, and we do that by promoting and improving STEM education. America is changing faster than ever. Add Changing America to your Facebook or Twitter feeds to stay top of the most important news. In the past few years, there has been an influx of media commentary about how to raise children to become stewards of the environment. Suggestions include instilling a love of the natural world in them or showing them how to be politically active. This is all well and good, but we also need to encourage and support our kids to be scientifically literate. Unfortunately, this isn't just a luxury that would be nice to have; it is a necessity that we can no longer afford to be without. For our climate change-related actions, whatever they may be, to be truly effective they need to be informed by accurate scientific knowledge. Again, the aim is to increase scientific literacy in society as a whole.

Science Education Scenario

Tech progress is key to curbing emissions and solving climate crisis

Eric **Levitz**, Senior Writer at New York Magazine, May 17, **2021**
"We'll Innovate Our Way Out of the Climate Crisis or Die Trying," Intelligencer, https://nymag.com/intelligencer/2021/05/climate-biden-green-tech-innovation.html (accessed 3/23/24)

The preconditions for green industrialization can be made in America. The United States has more fiscal capacity and better-financed research universities than any nation on the planet. And, for all the pathologies of our politics, public investment in green tech inspires far weaker opposition than many less-indispensable climate policies. In fact, late last year, with Republicans controlling the Senate and Donald Trump in the White House, the U.S. increased funding for zero-emission technology R&D by $35 billion. America does not have sovereignty over enough humans to save the planet by slashing our domestic emissions. But we just might have the resources and political economy necessary to help the developing world save us all. Although progress on renewables has exceeded optimistic expectations, the technical obstacles to global decarbonization remain immense. In the most optimistic scenario, scaling up existing, cost-competitive technologies can get us about 16 percent of the emissions reductions necessary for achieving net-zero by 2050, according to the International Energy Agency. Driving down the price of tech we already have will get us another 39 percent. The rest must come from technologies that have yet to be fully developed. We need electrified cement, hydrogen-powered steel plants, and evaporative cooling. We need utility-scale energy storage, electric airplanes, and ultra-high voltage transmission lines.