Rich Campanella, an individual

December 6, 2023

To orient the reader with one of the main themes relevant to the discussion of generative AI in creative fields, consider the following hypothetical:

Imagine Mozart is in a coma that he will never come out of. He has lost sentience and will never be sentient again. Advanced technology exists, and a brain implant device is installed in his brain that allows people to query the music-related parts of his brain using prompts in written German. Mozart's brain responds with outputs of masterful musical compositions equal in quality to his usual work. Would we allow the people querying his mind to copyright the works produced by Mozart's brain? **Would we consider his brain simply another artistic "tool" like a paintbrush, or piano?**

"Hindsight may well prove that there is no hyperbole in saying that generative AI is the greatest risk to the human creative class that has ever existed."[1] This quote from the NMPA's public comment submitted to the U.S. Copyright Office is no exaggeration. As things currently stand, copyright is vital in protecting creators in this new age of AI.

As I have learned through many conversations about AI with various people in different fields, this is a challenging topic to discuss. Discussions often start with an exchange of short statements and quickly turn into lengthy back-and-forths since so much context is required to support points of view and get to the heart of the matter. This topic has a significant philosophical component, reaching down to the core of how we define 'creativity' (Context: *Nature of Creativity and Mass Delusion*).

From my prior discussions, it has become clear that I must provide as much context as possible to support any claims or suggestions I make thoroughly. One challenge is that arranging the flow of ideas most effectively is difficult since one section may require necessary context from a later section, or vice versa. To solve this in the best way I could manage, I have added context references using the format '(Context: *section*)' to let the reader know where a more detailed explanation of a specific idea exists later on or to remind the reader of where to return to find an earlier explanation if need be.

There are some points that I feel should be introduced first since they are the most significant and dangerous to creators. Rather than build up a wealth of supporting context before getting to those critical points, I have decided to cover those points first and provide relevant context later.

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[1] National Music Publishers' Association. "Comment from National Music Publishers' Association (NMPA)." *Regulations.Gov*, 1 Nov. 2023, www.regulations.gov/comment/COLC-2023-0006-8806.

Below I often reference that AI is currently capable of producing work equal in quality to that of the most talented human master artists that have ever lived. The best examples of AI being able to produce high-quality completed works rivaling those done by human masters are within the domain of visual art. For anyone who has yet to see examples of master-quality AI visual art, check out Midjourney, Stable Diffusion, and the AI art-sharing website Civitai. AI is not yet as competent in every artistic medium. However, its masterful abilities to produce visual art foreshadow what is to come to every artistic medium in the near future.

I have been a firm believer since 2017 in the ability of AI technology to help us make scientific discoveries that lead to curing diseases and solving major worldly issues. However, the process of making scientific discoveries is one of decoding the mysteries of our universe, which is external to us and vastly more complex. AI is perfect for this since many discoveries will rely on our ability to use machines that can process and find patterns within massive data sets that would be impossible for humans to perform. However, the arts are not external to us. They are activities we have engaged in since the dawn of our existence that directly utilize and engage our senses, representing our most fundamental interface to our life experience. There is no urgency or reason to set AI on the task of making human art, especially when it will devalue the work of humans who want to make human art. It will deprive us of meaningful experiences of making and sharing our human art with other humans. This is especially so since AI does not have a desire to create art, and if it did, it would want to make art for its own 'senses.' Art created by AI from its own desire to do so would likely take the form of some complex arrangements of data or algorithmic expressions that we would not be able to perceive.

Before getting into the specific policy suggestions and dangers, we must orient the discussion with a very brief analysis of what is at the heart of AI technology: the ability to 'learn.' The ability to learn is at the foundation of all human talent and skills. It is the primary feature of our nervous system that is universally responsible for our ability to acquire any and all skills.

I am aware that developments or changes to the law are heavily influenced by precedent. However, there has never been a technological advancement as significant as the ability for machines to learn in a simulated way to how humans learn. Due to this, I do not think it is possible to reference existing copyright law too much in evaluating how to proceed with regulations of this technology because existing law was not drafted with this pivotal technological advancement in mind.

The system of merit that we have had in place for quite some time - a system that rewards and compensates people for their work, skills, talents, and achievements - can easily be flipped on its head due to AI. This system has not been perfect, but AI has the potential to make it far worse.

The following contains replies to a few specific quotes from public comments made by big tech companies, responses to some quotes by people involved in copyright law that I have seen in articles, responses to general talking points surrounding this topic, as well as refined and edited versions of points from my initial public comment.

Some of the important points that will be covered are as follows:

- Issues related to training
    - A new form of personal and economic harassment has affected particular professional artists due to the ability for anyone to train AI models of their own using open-source AI software on their personal devices.
    - Why training is unethical and violates the fourth factor of fair use
    - Training should be opt-in only because opt-out would turn into a full-time job for creators with the number of different AI technologies and companies.
- The fundamentally anti-competitive nature of generative AI
- The reasons why all analogies to previous technological advancements do not apply to AI
- A re-examination of the term plagiarism in order to update it for the age of AI
    - Never in the past was there a non-sentient entity that could produce creative work to the degree of a human master.
    - The fact that AI is viewed as non-sentient creates a loophole for plagiarism to occur.
- The reductive classification of AI as simply a “tool” is contradicted by the simultaneous use of the term “collaborator” by tech companies.
    - A tool cannot **entirely** compensate for a lack of artistic experience, skill, or talent. Something that can is not simply a tool.
- Copyright on works generated entirely by AI or those including content generated by AI
- The issue of likeness
- Incentives by various groups to be able to use AI technology
- The nature of creativity
- Societal dangers of AI art taking over creative fields

Training:

Economic and Personal Harassment - SamDoesArts:

There are societal dangers in allowing AI models to be trained on an artist’s work without consent. One of these dangers is a new form of personal and economic harassment now available to anyone with a computer. This new form of harassment can be significantly amplified by social media communities where users can band together to direct collective harassment in this form toward one or more people.

Everyone involved in making decisions regarding AI regulation must be aware of an example of this form of harassment, which involves visual artist Sam Yang and the Stable Diffusion AI art community.

For those who may not know, Stable Diffusion is one of the prominent AI art generators and is unique because it is open-source, meaning users can download and modify the source code for the program to fit their use cases. As of today, the Stable Diffusion community on the social media platform Reddit has 425,338 members, ranking it within the top 1% of communities based on size on the entire website. Since Stable Diffusion is open-source, the ability for any user to train their own AI models on any work of their choosing has become available for free.

In the video titled "Why Artists are Fed Up with AI Art"[2] on Yang's YouTube channel SamDoesArts, at timestamp 8:32, he details his highly disturbing experience of harassment from this community. He shows numerous screenshots of particular interactions, comments, and even a screenshot of an email he received from the popular AI art website Civitai showing their support for this harassment of Yang and their plan to further encourage it in the Stable Diffusion online community by sponsoring a competition.

A brief explanation of the story is as follows: A user of the open-source Stable Diffusion AI system trained an AI model on 300 of Sam Yang's works without notifying him or getting his consent. This user shared this Sam Yang AI model with the Stable Diffusion community on Reddit, making it available for download by anyone who wanted to use it. Someone brought this to Yang's attention, and he took to his social media accounts to raise awareness and voice his discontent. In response to Yang, members of the Stable Diffusion community started harassing him on various social media platforms. They even started a competition within their community to see who could train the best AI model using even more of Yang's works without his consent. At this point, they explicitly knew that Yang did not want his works to be used for this purpose, and they disregarded his wishes entirely in order to harass him. This led to the popular AI art website Civitai emailing Yang. In the email, this representative for Civitai expressed no sympathy for Yang's situation, used taunting language, and told Yang that Civitai would be sponsoring a formal competition in the Stable Diffusion community to train the best model on his works.

Here are some notable comments that Yang shows screenshots of in his video:

The first one, which is from the email sent by someone who works at the popular AI art-sharing website Civitai, reads: "To celebrate the work of these fine creators, we're hosting a "Battle of the Sams!" where users of r/stablediffusion can vote on which of your models did it best." They go on to say that the first prize winner of the competition will receive an 8x10 print of one of Yang's works, stating that they "actually believe in supporting artists." However, their willingness to purchase a single 8x10 print does not come anywhere close to outweighing their blatant lack of empathy or concern for Yang in this situation.

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[2] Yang, Sam. "Why Artists Are Fed Up with AI Art." *YouTube*, 24 Dec. 2022, https://www.youtube.com/watch?v=5Viy3Cu3DLk&t=636s. Accessed 30 Nov. 2023.

Two other notable comments from random harassers are: “Sam failed to understand that we hold all the cards, and we can do whatever we want. An artist has no right to speak to gods.” “And as I said, you can expect even more Samdoesarts models. This is just the start. Probably a lesson to show that you can’t stop this even if you want, adapt and accept or keep crying.”

This issue represents more significant risks than simply some online harassment or cyberbullying. This can be viewed as economic harassment because people can band together to coordinate a market flood of work in another person’s style with the sole intent of devaluing their work and damaging their career. AI art models can generate images in seconds right now and things will only get faster. This means people could flood the market with thousands or hundreds of thousands of works in another artist’s style if they decide they want to harass a particular artist for whatever reason. Other AI systems already exist for automating inputs to AI models, so this could be a situation where people press a button and let the computer entirely automate the generation of hundreds of thousands of images that they then use against the artist they have chosen to target.

I imagine that many people involved in these online AI art communities are from a relatively wide range of ages (up to a point), but I am sure a decent amount of them are relatively young. A technology that allows anyone, including kids, to be able to personally and economically harass professional adult artists in this way is very dangerous.

The ability for anyone, including kids, to train AI models on anyone’s work puts far too much into the hands of the average people, giving them far too much leverage over creators.

Violation of Fair Use:

Before providing my explanation, I would like to quote former executive at Stability.ai and professional composer Ed Newton-Rex. He resigned from his role at Stability.ai specifically because he disagreed with the company’s, as well as the entire AI industry’s, stance on fair use.

> I disagree because one of the factors affecting whether the act of copying is fair use, according to Congress, is “the effect of the use upon the potential market for or value of the copyrighted work”. Today’s generative AI models can clearly be used to create works that compete with the copyrighted works they are trained on. So I don’t see how using copyrighted works to train generative AI models of this nature can be considered fair use.
>
> But setting aside the fair use argument for a moment—since ‘fair use’ wasn’t designed with generative AI in mind—training generative AI models in this way is, to me, wrong. 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. I don't see how this can be acceptable in a society that has set up the economics of the creative arts such that creators rely on copyright.[3]

Though I am not a legal expert, I believe that training AI models on copyrighted art clearly violates the fourth factor of fair use. Consider the combination of the following three factors:

- AI models can generate master-quality content orders of magnitude faster than humans and will only become faster and more capable over time.
- Access to these AI systems is already widely available to the general public, does not require any artistic talent, skill, or experience to use, and will only become more accessible to the overall population over time. This includes the ability for anyone to train their own AI models, currently available with open-sourced AI systems but likely available commercially in the future.
- Separate AI systems and other methods to automate inputs and the operation of generative AI systems already exist, allowing them to run and generate content without human interaction. These types of technologies will also grow over time.

Due to the combination of these three factors, the ability to flood the market with competing works that vastly outnumber the originals used to train AI models should be apparent. This ability to flood the market already exists today but will become exponentially more possible as development results in even faster and more powerful AI systems that are more widely accessible to the overall population. It certainly will not be long before AI has generated more high-quality art than that produced by all humans throughout history combined.

Consider the following potential scenario: I release an album containing a new significant stylistic innovation in guitar playing. Within the same day of release, numerous people hear the album, recognize the value of my stylistic innovation, and decide to train AI models on my work. Those who trained these AI models on my work share these trained models in various online AI communities, allowing anyone to download and use them. Literally within days or even hours of release, there could theoretically be hundreds or hundreds of thousands of people using AI to generate millions of competing tracks from the AI model trained on my work. This hypothetical situation needs to be avoided at all costs if creators are going to have any incentive to create. This is one example of why generative AI is fundamentally anti-competitive, which I address in more detail in a later section (Context: *AI is Fundamentally anti-competitive*).

Using somewhat loose numbers for a hypothetical, let's say the average digital painting takes 5 hours to complete. AI can produce competing images in seconds, but let's say an average time is 30 seconds. In the time it takes one person to finish a digital painting, a single AI model could produce 600 competing works. If 100 AI models were running simultaneously, they could produce 60,000 competing works in the time it takes a human to produce 1 digital painting. Now consider the fact that millions of generative AI models will be able to generate content at

[3] @ednewtonrex. *Twitter,* Nov 15, 2023, 4:28 PM, twitter.com/ednewtonrex/status/1724902327151452486

any given time since millions of people will have these AI systems installed on their personal devices.

It is relevant here to address a common talking point regarding AI training: the idea that training is like reading and, therefore, does not violate copyright. Here is one quote from an article on Wired.com:

> There are other objections too. The US Copyright Office is currently accepting comments for its study on AI, and many of those submitted reveal starkly different schools of thought on whether AI training violates copyright. The Copia Institute, a think tank founded by Techdirt founder Mike Masnick, argues bluntly that artists have no right to exclude their work from AI training, because it views said training as more akin to reading than copying. "Ultimately when we speak of training AI we are speaking about letting software 'read' or otherwise consume works on behalf of the people developing it. Copyright law does not prevent reading," its comment states. If the courts adopt this line of thinking—the training-as-consuming metaphor—it will be difficult to sway them with arguments founded on the idea of training as theft.[4]

Again, the fact that we are dealing with an entirely unprecedented technological advancement, one that has granted machines with no human limitation a simulated ability to learn as we do, should render comparisons to anything before AI, including the capacity to which we humans can interact with copyrighted material, to be nearly useless. There is a vast difference in the potential for unfair competition between a human consuming copyrighted works and a super-machine that can both consume and generate competing works orders of magnitude faster than any human or group of humans ever could.

If it were common in the past for people to amass slave armies the size of 1 million or more humans with the sole purpose of having them consume specific best-selling copyrighted works and then focusing them on the task of producing thousands of competing works heavily inspired by the works they consumed, copyright law would likely be different today. The point is that human limitations in the past offered some form of "natural protections" that no longer exist in the age of AI. Humans' ability to read copyrighted works did not pose anywhere near as much of a threat in terms of unfair competition, whereas AI that can 'read' in a simulated way to humans does.

Though AI models are capable of producing works that may not closely resemble specific works they were trained on, I believe that the ability to train AI on copyrighted work without authors' consent has **introduced new concepts of theft** that should now be defined: **instead of theft of individual works, the ability to train on an artist's life's work is like a theft of overall talent or theft of individuality, which can be considered a new type of identity theft**. I do not know exactly what to call them, but this new technology has introduced a new feeling or intuition that creators worldwide are dealing with, trying to make sense of, and trying to find ways to articulate right now. **There is some profound and disturbing violation, some form of theft.**

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[4] Knibbs, Kate. "Meet the Lawyer Leading the Human Resistance against AI." *Wired*, Conde Nast, 22 Nov. 2023, www.wired.com/story/matthew-butterick-ai-copyright-lawsuits-openai-meta/.

This technology effectively allows people with no talent, skill, or experience in a specific creative medium to 'download' the talent or style of other humans who have produced high-quality work in that medium and then generate innumerable competing works orders of magnitude faster. I believe we all have an intuitive sense of fairness and, for any honest and decent person, this should set off alarm bells as being wrong on numerous levels. **The ability to take someone's work or talent is an oppressive form of power that feels like it violates aspects of freedom itself.** Talent is a quality that is valued as part of our identity. The ability to take talent from other people is a step toward our loss of individuality. (Context:)

If one were to train AI solely on the work of one human artist, this would likely resonate with most people as unfair and unethical, like some form of theft. If, for some reason, AI models could only be trained on the work of a single artist, I do not think policy decisions would end up in favor of the AI companies. However, things get a bit more murky when AI is trained on the works of countless artists instead of one. This introduces a potential loophole for mass talent theft that AI companies seek to exploit. **The talent of an entire class of humans that pursue particular career paths purely out of passion is being taken and used to create products that will devalue all of our work in the market while also being able to compete with each of us specifically by replicating our individual styles.**

When humans consume content, we can understand and contextualize that content due to our experiences of the world through our senses. My understanding is that AI does not possess the ability to understand the content it consumes; it only creates statistical correlations that allow it to guess what decisions a human is likely to make. This lack of understanding on behalf of AI is evident in the fact that AI image generators notoriously have a problem with things like hands, fingers, and various aspects of the human body overall. They do not get these elements wrong all of the time, and AI developers are improving on this particular weakness regularly. However, the point is that a human artist would **never** make a mistake where they **accidentally** paint a human with four arms and six or seven fingers on each hand.

According to professor of AI Amelia Winger-Bearskin, "Generative artificial intelligence that's trained on billions of images scraped from the internet does not really understand what a "hand" is, at least not in the way it connects anatomically to a human body." Another quote of Winger-Bearskin from the same article reads: "In images, hands are rarely like this," Winger-Bearskin said, holding up her hands with fingers spread apart. "If they were like this in all images, the AI would be able to reproduce them perfectly." AI, she said, needs to understand what it is to have a human body, how exactly hands are connected to it, and what their constraints are."[5]

Though still functionally equivalent in ability to produce master-level artistic output, the potential for these mistakes demonstrates that AI does not possess a true ability to learn, which is defined by the ability to understand and contextualize information. This may be relevant for the legal interpretation that AI is 'learning' or 'reading' from copyrighted content as humans do.

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[5] Dixit, Pranav. "AI Image Generators Keep Messing up Hands. Here's Why." *BuzzFeed News*, BuzzFeed News, 31 Jan. 2023, www.buzzfeednews.com/article/pranavdixit/ai-generated-art-hands-fingers-messed-up.

Another quote from the same Wired.com article referenced earlier:

> Many copyright experts are skeptical too. Berkeley's Samuelson, for example, says it's "ridiculous" to claim everything an AI outputs is infringing by default because of how it is trained.[6]

If we recognize that the ability to train on the life's work of artists is a form of overall talent theft or some form of identity theft, then an AI model trained on copyrighted material without authors' consent would represent an infringing work. Even if the outputs of this system do not qualify as infringement themselves, they should be treated as such due to the process in which they were created.

Question 8.5

Question 8.5 reads: "Under the fourth factor of the fair use analysis, how should the effect on the potential market for or value of a copyrighted work used to train an AI model be measured? Should the inquiry be whether the outputs of the AI system incorporating the model compete with a particular copyrighted work, the body of works of the same author, or the market for that general class of works?

I believe the answer to question 8.5 is 'all of the above.' These AI systems can devalue individual works by flooding the market with highly similar works, devalue the body of work of particular authors by flooding the market with competing works in their style and devalue the entire market for general classes of works by flooding the market entirely.

Opt-In only

For all of the reasons stated above, **training should be opt-in only**. There also needs to be penalties for people who disregard creators' wishes and train AI models on their work anyway, which is entirely possible and accessible to the general public with open-source AI software.

I would also like to quote NMPA's public comment here: "An opt-out scheme that requires rights holders to opt-out on an AI company-by-AI company or application-by-application basis would not be feasible, given the sheer volume of AI companies and applications; it is nearly a full-time job to keep up with developments in the AI marketplace… Copyright owners, particularly

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[6] Knibbs, Kate. "Meet the Lawyer Leading the Human Resistance against AI." *Wired*, Conde Nast, 22 Nov. 2023, www.wired.com/story/matthew-butterick-ai-copyright-lawsuits-openai-meta/.

individual creators and small businesses could not possibly meet such a burden." There is not much to add here; NMPA is spot on.[7]

I do not fundamentally have an issue with AI models being trained on copyrighted data if those models are to be used strictly for research purposes and not for content generation. The issue, however, is that a model trained even for research purposes would represent a danger to authors of the works it was trained on if the model were to be stolen via a hack, leaked by an insider, or even transitioned into a generation model via some potential legal loophole. Freely allowing people to train models for research purposes still puts creators at risk, and, therefore, **all training should be opt-in only**.

Reply to Meta Platforms, Inc.:

Meta's introductory paragraph of their public comment reads:

> Imagine a world where language barriers evaporate and people can communicate seamlessly in real time; where governments, the private sector, and civil society can come together to find solutions to the challenges of climate change before it's too late; where vaccines can be developed and deployed before a pandemic takes grip of humanity. All of this—and so much more—is possible with the power of AI. And all of these opportunities could be squandered if the delicate balance between copyright, and innovation and competition is miscalibrated.[8]

I believe in the power of AI to help us solve many problems that would be unsolvable without such powerful technology. However, AI companies do not need access to copyrighted creative works in mediums such as visual art, music, film, literature, etc., to solve big problems in science and medicine.

I find this opening paragraph to feel highly manipulative, suggesting the idea that people are going to suffer if AI companies are not able to access copyrighted material freely. If AI has as much potential to make discoveries that will bring such tremendous benefit to humanity, which I genuinely believe it does, then investing in training material in a way that ethically compensates creators would likely be the best investment they ever make by far.

Issues with open-source:

[7] National Music Publishers' Association. "Comment from National Music Publishers' Association (NMPA)." *Regulations.Gov*, 1 Nov. 2023, www.regulations.gov/comment/COLC-2023-0006-8806.
[8] Meta Platforms, Inc. "Comment from Meta Platforms, Inc." *Regulations.Gov*, 1 Nov. 2023, www.regulations.gov/comment/COLC-2023-0006-9027.

Open-source AI generators pose significant risks. With the Stable Diffusion AI art model, it is very simple to disable any safeguards or transparency measures the original creator of the software has built into the program by modifying the program's source code. Simple Google searches lead to easy-to-follow guides explaining how to disable things like watermarking and adult content prevention, as well as modify the overall functionality of the program in other ways.

Therefore, it is not enough to ask AI companies to include watermarks, limit training to works they get consent to train on, or whatever other measures are proposed to offer protections. These measures will easily be circumvented by open-source AI programs. The ability for anyone to train their own AI models using free, open-source software is already available today. There should be laws in place that penalize those who would circumvent these protections in order to disincentivize these actions.

AI is Fundamentally anti-competitive:

Main points:

- Any new styles or forms of content created by human artists in an attempt to remain competitive by differentiating their work from what AI can do will simply be trained into, or learned by, AI models extremely quickly
- Since anyone can train their own AI models using open-source AI software, this means that it will be theoretically possible for the following scenario to occur:
    - I release an album with a new stylistic innovation, people recognize the significance of my work, thousands of people train AI models on my work within a few hours of its release and publicly share these models in various online AI communities, tens of thousands of people begin having these AI models generate millions of tracks containing the stylistic advancement I released to the world a few hours prior.

In order to understand why AI is fundamentally anti-competitive, let’s consider the idea of overlap.

Overlap:

The ability to learn is at the foundation of all human talent and skills. It is the primary feature of our nervous system that is universally responsible for our ability to acquire any and all skills. There have been numerous technological advancements since the dawn of humanity, but there has never been anything close to one that takes our ability to learn and grants it to a machine.

An advancement of this magnitude is **entirely unprecedented,** and, therefore, it is vital that we achieve complete clarity regarding the nature and implications of such an advancement so that we can make the wisest decisions regarding regulation.

In my discussions with others on AI, many people often make analogies to previous technological advancements. For example, concerning visual art, they will say things like "Visual artists were panicked when the camera was invented, but, look, the camera didn't replace visual artists." Analogies such as this are fundamentally flawed and reveal a concerning lack of clarity about the nature and implications of such a significant advancement. The reason why such analogies are flawed has to do with overlap.

At any given time, there exists an overall spectrum of skills humans utilize in order to "make the world go around." When new technologies are developed, the new technology generally covers, or blocks out, some slim part of this spectrum, either making certain tasks more convenient, requiring less skill, or removing the need for a human to perform that task altogether. In response to this alteration of the spectrum by the new technology, humans transition to focus on different skills and tasks that are not covered by the new technology or on new skills and tasks added to the spectrum related to utilizing the new technology. **Our ability to learn is what allows us this flexibility to transition to new skills and tasks.**

Since all previous technologies lacked the ability to "learn," their effect on the overall spectrum of skills and tasks was limited to the specific skills and/or tasks the technology covered. After a new technology came along and blocked out a slim part of the spectrum, it would usually take a long time before a new technology was developed to cover the areas of the spectrum that people transitioned to after the previous technological advancement. A machine that can "learn," however, can quickly overlap with massive parts of this spectrum. A machine that can learn can then follow humans wherever we go as we attempt to find things AI cannot do, learning those things instantly as we find them. AI is not limited to being able to do one specific thing or a narrow set of things like previous technologies are. **It has been given the ability to learn, which is the foundational aspect of our nervous system responsible for our ability to acquire any and all skills**. Eventually, AI's overlap with the spectrum of human skills and tasks will be complete and dominant.

Now let's re-examine the example about how the invention of the camera didn't replace artists. A significant part of the spectrum of work related to visual artists had to do with documentation: making a record in an artistic medium of someone or something as perceived by our sense of vision. The invention of the camera absolutely covered this part of the spectrum of visual artists' abilities, and they lost a lot of work because of it. However, since a camera can not learn, artists were free to lean into other parts of their abilities that a camera could not replicate nor learn to replicate. This meant pushing more into style as well as abstract and imaginative subject matter; both offered tons of ground to explore that was entirely unthreatened by the camera.

Interestingly, since a camera can only produce a 2D replication of physical reality in its objective state, there has even remained a market today for portrait and landscape art since humans

enjoy the aesthetic of paintings and drawings. **What is important to note is that this market has remained not because people want to support artists (though some do), but rather because the particular aesthetic of visual art is something people enjoy that cannot be obtained from a camera.**

If we compare this to the recent advances in AI, the differences should now be highly obvious. The capabilities of AI art generators **already** overlap with every part of the creative spectrum 2D visual artists engage in. AI can replicate and apply style (or even a synthesis of multiple styles) to any art it generates, produce highly abstract and imaginative content, and even generate images of people and places (existing or fabricated) that look like they were taken with a camera. **Most importantly, any new advancements human artists make to differentiate themselves from what AI can currently do will be able to be learned and replicated by AI instantly. This is the core of the reason why generative AI is fundamentally anti-competitive.**

Anti-Competitive:

Sam Altman, CEO of OpenAI, has stated that it is the goal of he and his colleagues to build Artificial General Intelligence. According to Wikipedia, “An artificial general intelligence (AGI) is a hypothetical type of intelligent agent. If realized, an AGI could learn to accomplish any intellectual task that humans or animals can perform.” While not yet AGI, the current generation of AI technologies that has prompted worldwide discussion about generative AI is a very strong step toward that ultimate goal and has already succeeded in learning how to accomplish specific creative intellectual tasks to the level of human masters and beyond.

Since this technology is fundamentally based upon giving machines the ability to learn as humans learn, yet at rates orders of magnitude faster than humans can, this technology will eventually have complete and dominant overlap with every cognitive, creative, and intellectual task a human being can possibly perform.

The reason why AI is fundamentally anti-competitive is that this means that any new styles or forms of content created by human artists in an attempt to remain competitive by differentiating their work from what AI can do will simply be trained into, or learned by, AI models extremely quickly. These new or updated AI models can then be instantly distributed for free to anyone who wants to be able to use AI to generate work incorporating those new styles or forms of content.

Consider the following scenario: I release an album that contains a new stylistic innovation in guitar playing. Within the same day of release, people notice the significance of my particular innovation. Thousands of people start training their own AI models on my work and then sharing them online with other people in AI art communities. Within hours of the release of my work, tens of thousands of people could be having AI generate millions of tracks utilizing the

stylistic innovation I contributed to the world hours prior. This would be an instant flood of the market with competing works.

The ability for members of the general public to train their own AI models is already available to people with visual art via the open-source AI system Stable Diffusion. The ability to train AI models on various other art forms will be available for members of the general public in the near future.

Hypotheticals:

Here are some hypotheticals I find useful for understanding why AI is fundamentally anti-competitive:

Imagine a future where highly advanced AI systems exist that can perform all tasks related to starting businesses. They can raise money via stock trading, create unique branding, find and rent necessary physical space, recruit other necessary AI systems, hire humans, etc. Imagine you start a business with a unique business model that starts taking off. After people realize that your business is doing really well and acknowledge your great idea, they simply say “Hey AI, start me a business to compete with X business.” Their AI system then analyzes all publicly available information related to your business and starts a competing business within days. Anyone can do this so within a few weeks of your business starting to boom you have thousands of competitors. Clearly, if AI reaches this level of sophistication I don’t know if people will even be working, but the point is that in this hypothetical world, there is literally no incentive whatsoever for anyone to think of a unique business idea and put time into starting that business.

The following hypotheticals approach the idea of AI being fundamentally anti-competitive in a more general sense.

If someone built a robot that was controlled by AI models trained on the games of the best basketball players of all time, would the records that the robot broke in the arena of competitive basketball be set in the name of the person who built the robot? Would we suddenly think of the person who built the robot as the greatest basketball player? In this case, I think we all intuitively understand that the person would get credit for building the machine but not credit for being a basketball player because they simply are not a basketball player.

Here is a variation of the basketball hypothetical. Imagine a future where brain implants exist that exert control over a person’s entire body to fully automate motor control. These brain implants contain AI models that are trained by ‘watching’ the games of the best basketball players of all time. This results in people who do not have athletic talent and have not played basketball or any other sport being able to let the brain implant take over and cause their body to play like one of the best basketball players of all time. If this were allowed in basketball

leagues - from leagues for kids up to professional leagues - basketball would no longer have any meaning.

What's worse is that the top-level athletes who reached the highest level of the sport out of their love and dedication for it all of a sudden have an influx of competitors who wouldn't be able to play at their level without the brain implant. Since videos of the greatest players were used to train the AI models, their outstanding gameplay was used against them to devalue their talent, flood their sport with an unnatural amount of competition, and ultimately ruin the sport they love.

Since the AI models in the brain implants are able to execute with higher consistency than a human, the top-level players have to use the brain implant themselves in order to remain competitive. This, however, kills their love for the game since the very thing that motivated them to reach the top level in the first place was the experience of using their own bodies and minds to compete at the top level.

While the arts are not focused on competition like sports, the reality is that the arts are still highly competitive. The necessity to consistently produce high-quality work as well as the race to innovate new styles, techniques, and forms of content makes creative fields extremely competitive. Artistic innovation is one of the main ways artists are able to make a name for themselves and build solid careers. If you find a new stylistic innovation, you have to get it out there before someone else finds it otherwise they will plant the flag in that innovation and the public will associate that innovation with their name and not yours. Losing out on a particular innovation could be the difference between having and not having a career.

Here is one final analogy that I think is very useful to further explore the anti-competitive nature of AI. In the YouTube comments on the video by SamDoesArts I referenced earlier (Context: *SamDoesArts*), one user commented saying: "Calling artists gatekeepers for not liking AI is like calling runners gatekeepers because they won't let you use your car in a foot race."[9] This is a very similar analogy to one I have used frequently in discussions with others. The reason I quoted this one and didn't just write out my own analogy, however, is because a particular reply by another user perfectly illustrates how so many people are failing to accurately analyze the way AI interacts with competition. This other user replied: "A more apt one would be a runner calling someone participating in NASCAR a fraud since they don't use their legs to race. It's not the same race!"[10]

Remember that this was an analogy to AI being used in visual art. What this user is failing to realize is that, with art, the 'races' cannot be separated. In the analogy, there are two separate races. One race has the goal of reaching the finish line first while piloting a car, the other has the goal of reaching the finish line first on foot. There is no ability to mix up the results, stats, records, accolades, etc. of these two races because we can clearly see that one race involves

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[9] @blacklight2888. Comment on "Why Artists Are Fed Up with AI Art." Yang, Sam. Uploaded by SamDoesArts *YouTube*, 24 Dec. 2022, https://www.youtube.com/watch?v=5Viy3Cu3DLk&t=636s. Accessed 30 Nov. 2023.

[10] @o_o474. Comment on "Why Artists Are Fed Up with AI Art." Yang, Sam. Uploaded by SamDoesArts *YouTube*, 24 Dec. 2022, https://www.youtube.com/watch?v=5Viy3Cu3DLk&t=636s. Accessed 30 Nov. 2023.

humans driving cars and another involves humans running on foot. It is not possible for someone to be secretly driving a car in a race against human runners.

With art, however, the end goal of the process for human artists or AI is the same: the creation of a high-quality piece of visual art. Other humans experience that end goal the same way whether the art was created by a human or AI. There is no apparent observable difference like seeing people drive cars and seeing other people running on foot.

This is why I use the analogy of a brain implant device controlling another person's body because that more accurately maps on to this situation. People in the same arena have access to technology that allows them to appear to perform like human masters even though they are not actually executing on their own. In the brain implant analogy, your average person wouldn't be able to tell if a particular basketball player was playing on their own or if an AI was controlling their body, because they would just see a human body playing basketball.

With the introduction of AI into creative fields, the 'results, stats, records, and accolades' are all now being mixed into our human arena whether we like it or not and there isn't much of a way to ever separate them. Even though we can push for full transparency to show when work was generated by AI, work done by AI still competes in the same exact arena that human artists do. **AI is now running in the same race as us whether we like it or not.**

To tie up one loose end on this analogy, there are some types of artistic work that AI can do that humans can't really do, and works such as that will be obvious to the average person as being created with AI. This would be like someone being able to see with their eyes a race car speeding down a track and intuitively understanding that it's not a human running. However, as stated earlier, a race car cannot somehow secretly pass for a human runner and fool people watching the human foot race, while AI has this capability with art.

There is one more interesting point related to the NASCAR vs. human runner analogy. I used basically the same analogy a while ago in a discussion with someone about AI art. They replied by saying that technology allows us to go farther than we ever could without it and even though Usain Bolt was the fastest man alive he would never be able to win in a race against a car. That is true, but what is interesting is that when we want to give advice about how to achieve good health, we usually tell people to engage in exercise such as running. We don't tell them to go drive a car.

An example of something within art that AI can do that humans cannot would be fractal art. People have been using computers to generate fractal art for a while now. I do not have an issue with this whatsoever because of the lack of overlap. Programs designed to generate fractal art can really only do that. They make art based on mathematical functions. This type of art isn't something humans can accurately replicate and usually isn't something we are interested in trying to replicate. Since these programs cannot automatically generate work that looks as though it was done by a human, I don't see them as being unfairly competitive, and celebrate their existence.

Nature of Creativity and Mass Delusion:

At this time in our technological history, it is important that we take pause to re-evaluate and achieve clarity on what it means to be able to create and protect those who possess this ability. Art forms such as music and visual art deeply utilize and engage our senses, which form the most fundamental aspect of our experience of life. To render human talent related to our own fundamental features of life meaningless, passing the torch of artistic creation to non-sentient AI, is, to me, anti-human.

The primary meaning for the word ‘create’ as defined by Merriam-Webster is “to bring into existence.” Some of the other relevant meanings shown in the definition are “to produce through imaginative skill” and “to produce or bring about by a course of action or behavior.” The etymology of the word ‘create’ is as follows: “Middle English *createn*, borrowed from Latin *creātus*, past participle of creāre "to bring into being, beget, give birth to, cause to grow."

I believe it is obvious that the word ‘create’ refers to the ability to manifest something into existence in the world. Advances in technology have gradually obfuscated the extent to which the definition **truly** applies to us in particular situations, blurring the line between tool and creator, but never in as significant a way as with the recent advancement of AI. The question that has to be asked is: How much is a specific technology responsible for the manifestation of a particular work? There is a threshold where the technology transcends being a simple tool and becomes a creator by possessing the equivalent potential to manifest to that of a human. AI certainly meets and far surpasses this threshold.

The fact that our current laws are such that one cannot copyright an idea, and can only copyright a particular manifestation of an idea, demonstrates that what we value is not an inner vision but rather the ability to manifest it. Consider the following analogy to sports: Right now I can envision myself catching a 30-yard pass and then running another 50 yards to score a touchdown, all along the way juking and jumping over numerous members of the opposing team. However, the mere fact that I can envision that is not grounds to recruit me to a professional team and allow me to play in the NFL. To play in the NFL, I would need to have the ability to execute, in a real-world environment, what I envision in my mind. The path to developing that top-level skill will also refine my internal visions so that they are more realistic after being shaped by knowledge of the task at hand I have gained through countless hours of experience. Even the internal vision of a novice compared to that of a pro is vastly different.

Master visual artists who work today in both traditional and digital mediums have the talent and skills to create, whether they are using traditional or digital artistic tools or not. Consider a master artist who digitally paints in Adobe Photoshop. The ability to paint, even digitally in Photoshop, requires the same artistic knowledge and skills as traditional art media - such as a deep understanding of composition, form, value (light and shadow), color, perspective, anatomy,

etc. - no matter the tool being used. The tools are the inconsequential part when we are talking about traditional media vs Photoshop because the artistic skill set of how to ‘see’ as an artist, and translate that to 2D form, is universal. Photoshop as a digital painting tool cannot compensate for a lack of mastery of the fundamentals of art.

If you were to take the master digital painter in our example, remove their computer from them, put a pencil and paper in front of them, and ask them to draw something, they would undoubtedly be able to produce something of high quality; confirming the fact that they possess artistic creative potential. Even if they had nothing but a flat stone in front of them, they would be able to prick their finger and paint something reflective of their artistic skill using nothing but their own blood.

A musician with musical skill doesn’t need instruments to demonstrate their musicality. We can sing with our voices or drum on things using our hands or sticks. The skill is inside of us, any tools are just there to give us different ways of utilizing our internal skill. This internal skill is what gives a person the ability to truly create and, therefore, be considered a creator.

An author of literary works does not need any tools whatsoever, as the crafting of language to express ideas happens primarily in the mind. This language can be spoken to transmit it to other people or carved into stone.

The point is that technology and tools are meant to give us ways to utilize our internal creative skills, not compensate for a lack of them while simultaneously punishing those that have them.

Photography:

I do not wish to make any enemies here. I respect photographers for their work and understand the value that photography brings to our lives. I enjoy taking creatively-oriented photos myself. However, photography is an example of a technology that blurs the lines between tool and creator. It is important to discuss photography because I have seen arguments that copyright will have to be extended to AI because of how copyright applies to photography. Again, the advancement of AI is a pivotal event that requires us to pause and re-evaluate what creativity means.

From my three decades of experience writing music and making visual art, I do not feel as though I am utilizing nearly as much creativity when I take photos as I do when I draw, paint, or write music (even though I do enjoy taking them). With visual art and music, I am tasked with making something of high quality from nothing. By virtue of that fact, visual art and music are art forms that require far higher levels of creative ability (barring certain practices in visual art and music where you take content already produced and manipulate or ‘remix’ it). This fact makes them more creative in nature.

Photography contains some of the same macro-level creative decisions that a visual artist makes in terms of subject, composition, lighting, etc. but, at the end of the day, a button is pressed and the work is manifested by the camera itself, not the individual using it. A visual artist needs to make the same exact macro considerations a photographer does as well as orders of magnitude more micro decisions in order to actually manifest the work. Getting all of those decisions right in order to have a work of very high quality at the end is truly an act of top-level creative ability that exemplifies the definition of the verb 'create.'

There exists a similarity between photography and AI. In the same way one cannot prove whether or not a person using AI to generate work started with a particular vision in mind, it cannot always be proven whether or not a photographer started with a particular vision in mind. Certainly not always, but sometimes photography ends up boiling down to exploring the world, taking a bunch of pictures, then looking through them and choosing which ones came out the best. There's a lot of chance involved in that process, whereas visual art (mostly) involves full intentionality. I understand that many competent photographers carefully plan out their photos, but I am pointing out that planning is not required with photography. With visual art, barring the small category of work where one does things such as splashing paint on a canvas, there is no way to engage without full control over all creative decisions at every step of the process.

As things currently stand, even though photography is not nearly as creatively intensive as visual art, there isn't an issue with allowing photos to be copyrighted because photography does not significantly overlap with what visual artists can do. However, if photographers were able to install some chip into their camera that allowed them to apply filters to their photos that made their photos look as though they were painted by particular artists, or even just apply a master-level painting aesthetic to them, I think we would then have to reconsider copyrightability on those types works.

At that point, we would have to ask ourselves who we want to protect. If our aim is to protect creators, then I believe we should orient our decision-making around aiming to protect those who are truly capable of engaging in the act of creation (See Merriam-Webster's definition at the beginning of this section).

Do we want to protect people who possess the highest levels of artistic talent and have the ability to manifest high-quality artistic works from nothing, or do we want to protect people who use technologies that allow them to make orders of magnitude less creative decisions and then offload the majority of the actual manifestation to a piece of technology?

In this instance, the protection of photographers would harm artists who have the most raw creative potential. On the other hand, if we did not protect photographers who used such chips to make their photos look as though they were painted, both talented artists and photographers would not be harmed. The reason why photographers would not be harmed is that they would still have the ability to develop their own artistic talents if they want to achieve the aesthetics that can be achieved by an artist.

AI threatens both artists and photographers since it overlaps with everything photographers and visual artists can do. The point of this section, however, is to demonstrate why we should not allow the way copyright law interacts with photography to pry open the door to copyright protection for AI. Again, this pivotal technological advancement requires us to re-evaluate many things.

Mass Delusion?

I feel as though I am witnessing some form of mass delusion with the way many people talk about AI and creativity; especially the marketing language being used by big tech companies. Marketing language such as "Unleash your creativity with AI," "Anyone can create with AI" (Adobe), and "What would **you** like to make?" (OpenAI) betrays some fundamental misunderstanding of creativity. What would be even worse is if tech companies are aware of this delusion but are intentionally exploiting consumers by encouraging them to accept it due to the massive incentives they have to access such a large demographic. (Context: *Incentives*)

As stated above, anyone can have some internal vision of some artistic work. What makes someone an artist or creator is the ability to actually manifest that vision. In the case of AI, AI is the thing that possesses that creative potential, not the vast majority of people using it. OpenAI's language should read "What would you like AI to **make for you**?" instead of "What would **you** like to make?"

As mentioned in my football analogy earlier, there is also a vast difference in the clarity of an internal vision between that of someone who doesn't have talent, skill, or experience and a professional. A professional artist's internal vision about a potential work they'd like to create is going to be shaped by their vast amount of fundamental art knowledge and experience manifesting artistic visions into reality. Someone who doesn't have talent, skill, or experience however is likely to have very vague or inaccurate visions, lacking all of the detail and nuance that would be required to understand how that vision would translate to reality.

When someone with no talent, skill, or experience goes about attempting to manifest an artistic vision, reality instantly sets in as they experience the extreme resistance pushing against them from their lack of ability to create. One quickly realizes that they aren't truly 'seeing' or 'hearing' in their mind when they envision ideas. Studying and practicing art or music is mostly about truly learning to truly 'see' or 'hear,' which refers to the development of a comprehensive understanding related to how our senses work and the ways in which our senses are stimulated by art.

Beyond that, one realizes that there are orders of magnitude more creative decisions, on the micro and macro levels and between, to make and execute to manifest a work of high quality compared to the amount related to the vague conception of the idea in one's mind. Being able to make and execute innumerable amounts of creative decisions is definitive of creators.

I have experimented extensively with AI visual art generators such as Midjourney and Stable Diffusion. With Stable Diffusion specifically, I have experimented with text-to-image generation, image-to-image generation, and various techniques and plugins such as inpainting and controlnet. When I use AI to generate artwork, even when I spend a lot of time manipulating parameters, tweaking prompts, and using different techniques and plugins, I simply do not feel as though I am creating the art that comes out because my experience of making art for the past 30 years makes me unable to entertain that delusion. When one has decades of experience doing a particular thing, they certainly know when they are not doing that thing.

If you remove the tool from a creator, they can still create with nothing but their own body and mind or with the most basic things available to them like a flat stone and blood from their pricked finger as used in the example from earlier. However, if you take a tool away from someone and they can no longer create anything of value, it's clear that the tool wasn't actually a tool and was, in fact, the creator itself in that particular situation.

Copyright on works generated by AI

Main points:

- Generative AI models have achieved an effective equivalence in creative potential (the ability to output high-quality work) to human masters. They are effectively non-sentient artists and should be treated as such
- Prompts should not be able to be copyrighted
- The essence of the concept of plagiarism has to be re-examined since no technology has ever existed that could produce creative work to the level of a human master. Plagiarism at its core is based on the idea that people shouldn't be able to take credit and benefit from work they did not do themselves; whether that work was done by a human or something effective in creative potential to one
- AI companies have used the term "collaborator" to describe AI, which shows that even they understand that AI models are far more sophisticated than what we normally consider to be tools. This supports thinking of AI as non-sentient artists so that we can avoid a potential loophole to plagiarism
- There are ways to automate all inputs to AI, resulting in someone being able to press a button and cause AI to continually generate works on its own.
- AI allows people to benefit from ideas that they would have never come up with on their own, as evidenced in the quote below. This is the opposite of creativity
    - "I've already started using AI tools in my daily work. For example, while writing this script. I can use AI to summarize or reword portions, **or give me creative ideas that I would have probably not ever come with on my own**."

Is AI really as simple as a "tool"?

The "Mozart in a coma" hypothetical: Imagine Mozart is in a coma that he will never come out of. He has lost sentience and will never be sentient again. Advanced technology exists and a brain implant device is installed in his brain that allows people to query the music-related parts of his brain using prompts in written German language. Mozart's brain responds with outputs of masterful musical compositions equal in quality to his usual work. Would we allow the people querying his mind to copyright the works produced by Mozart's brain? **Would we consider his brain to be simply another artistic "tool" like a piano or paintbrush?**

I believe tech companies have already conceded half of this argument by the fact that they have openly referred to generative AI as a "collaborator." A "collaborator" is a term we have, until now, reserved for other humans. We certainly do not feel comfortable considering other humans to be tools; we understand other humans to be collaborators. Tech companies have used contradictory marketing language when using both "tool" and "collaborator" to describe their technology. The fact of the matter is that AI is much more like a "collaborator" since it can, through a simulated version of what a human does, learn and create work at the level of the most talented human artists that have ever lived. AI is technically a non-sentient creator, and people in favor of generative AI are looking to try to classify it as a tool so that they can slip through a loophole that will allow for plagiarism.

When someone uses AI to generate content, they are **not** the creator; they are commissioning work from another "artist" - that "artist" being the AI model (I'll address "collaboration" with AI later). **All inputs a human controls when generating content using AI (writing prompts, various other parameters, software plugins, etc.) are simply ways of communicating a vague commission request to the AI model in a language that the AI model will *respond to*.** The key phrase there is 'respond to,' since AI doesn't have an understanding of any request it receives (Context: *Training*). This is also one of the reasons why people are often highly exaggerating when they attempt to claim that they are "collaborating" with AI (Context: *"Tool" vs. "Collaborator"* and *"Collaboration" and "Brainstorming" with AI*).

Though not a 1-to-1 analogy, it is a bit like learning to write in French to commission work from a French artist. If a person becomes fluent in French, would we then allow them to copyright and take credit for (without consent) work done by the French artists they commission work from? Would we allow them to copyright the French words that they wrote in their commission request?

Some may try to argue that commissioning work from an artist is a form of collaboration, but there is a reason we have two separate words. Collaboration generally refers to people who are able to contribute in significant ways relevant to the particular art form. In the case of a painting, that would mean performing some significant amount of the overall painting required to complete that particular work.

Looking back on history, we know Pope Julius II to be the one who commissioned the painting of the Sistine Chapel from Michelangelo, who we know to be the artist and creator of the work. We do not consider Pope Julius II to be the artist or creator in that interaction.

In the interaction of a person commissioning another human artist for work, and then getting consent to own the copyright, there is some transaction there. An artist was able to benefit from the interaction by charging a fee for their service. The person commissioning the work now holds the copyright of work they didn't manifest themselves. We intuitively understand this, generally, to be fair considering the person obtaining the copyright of a particular work paid the artist who created it for that work and the ability to own the copyright.

Generative AI models are basically simulated versions of the cognitive repository of skills and talent an artist would utilize in order to manifest some idea into a work of art in a particular artistic medium. These AI models should be conceptually thought of as non-sentient artists since they possess a simulated ability to learn as humans do and, through that learning, develop a simulated version of the skills and talents a human artist develops in order to be able to produce high-quality artwork. These AI models develop an effectively equivalent amount of creative potential to that of humans; far greater creative potential if you consider the speed with which they can create work and the fact that they have no human limitation of time or energy.

For all intents and purposes, AI models can operate as a functionally equivalent substitute for a human in the interaction of a person commissioning work from an artist and even do so without human limitations of time, energy, or speed. Imagine taking a human master artist's brain and removing the parts involved in consciousness and any other cognitive processing unrelated to art. You would then have something functionally similar to these AI models in their current form, and these AI models are only going to become far more sophisticated over time.

Plagiarism re-examined:

Since we don't currently consider these AI models to be sentient, people are trying to get away with taking credit for work they did not do. People using AI to generate art are effectively commissioning work from a synthetic super-artist that is not sentient and therefore will not defend its own work. Once we understand that an AI model is essentially a synthetic, non-sentient artist, we should then apply the same standard regarding copyright that we would to people commissioning work from a human artist. One cannot copyright work done by another person without that person's consent. Depending on how things play out in terms of regulation, the following loophole may become available: If a person creates or uses a machine that emulates the human ability to learn and create art, then there is no "person" in the equation that needs to give consent to allow copyright. If this loophole is not closed, a person who had little to no participation in the actual creation of a work would be able to copyright and profit from that work.

We must ask ourselves, if we did regard AI to be sentient (which we may in the future), how would that affect our views regarding copyright?

I believe that the answers to these questions revolve around the essence of the concept of plagiarism. I say the 'concept' here because, though the definition of plagiarism refers specifically to the use of another person's work without authorization, I believe the essence of the concept is based on the protection against the ability of someone to be able to take credit for work they haven't done. Our definition is framed around protecting a person's work from another using and taking credit for it, but this is due, in part, to the fact that there has never in history been technology that can learn and create in a simulated way to humans.

There was never anything else that could produce work anywhere close to the level of quality equal to that of human masters that another person could attempt to take credit for. The introduction of this technology, however, illuminates what is at the core of the concept of plagiarism; the fact that one should not be able to take credit and profit off of work that is not one's own.

With AI, there is no other human in the equation, but I think we all intuitively understand that it is not fair for a person to be able to take credit for work they have not done. **It is for this reason that I believe much of the use of generative AI actually qualifies as plagiarism**. Those in favor of generative AI, however, are hoping to evade this qualification of plagiarism by slipping through the many philosophical and legal loopholes that currently exist with such a new, entirely unprecedented, and revolutionary technology.

When viewed through the lens of this core concept of plagiarism, I think it makes evident the following loophole: A person can take credit for work that was done by an AI model equivalent in creative potential to that of a human master simply because the AI is not considered sentient.

I feel as though AI is revealing how many people feel entitled to be able to benefit from the work of others. I posed the "Mozart in a coma hypothetical" to a middle-aged man who claimed to be a programmer in the comments on a recent YouTube video about AI. He responded by saying that, if he built the machine to query Mozart's brain, he should own the rights to everything Mozart's brain creates. I only mention the man's age here to show that this was not a young individual, this was an adult who believes this.

"Tool" vs. "Collaborator"

Notice that there is some contradiction between the marketing language used by tech companies when talking about generative AI. You will often see generative AI referred to as "AI tools" but you will also see it referred to as a "collaborator." Which is it? Is it a tool or a collaborator? The term "collaborator" is actually far more accurate since, as discussed earlier, AI models have the functional potential of superhuman master artists and can substitute for a human as an artist one can commission master-quality work.

Until now, the term "collaborator" has meant another human who is capable of contributing significant amounts of work to a project, while the term "tool" has generally referred to lifeless

objects through which a person expresses their skills and talents in order to create something. A “tool” in the hands of someone without artistic skill, talent, and experience would expectedly yield a result of very low quality. However, generative AI in the hands of someone with no artistic skill, talent, or experience - even someone who has only started learning to use generative AI minutes, hours, or days prior - can yield a result that looks like it was done by a top-talent master human artist. **I believe it to be evident that, if a person with no experience can start using something and obtain results that look as though they were done by a human master within hours, the person with no experience must not be doing anything at all in that interaction.**

Some compare generative AI to tools such as a paintbrush, or hammer. If one were to try to compare it to a paintbrush it would be more like a magical, enchanted paintbrush that anyone with no prior artistic experience or artistic skill can ask using spoken language to paint something; to which the magical paintbrush will respond by levitating and painting something on its own that looks like it was done by a master artist.

Due to the possession of equivalent or greater amounts of creative potential to the most talented humans, it should be obvious that this technology is not simply a “tool” like a paintbrush, hammer, or guitar. While it doesn’t have the sentience and free will to have a desire to create, it has all of the ability to create master-level creations simply when poked by a human to create. When something contains the potential to learn and create at the level of the most talented humans and beyond, it is clearly no longer simply a “tool” and this is why I believe the tech companies have possibly blundered a bit when referring to AI as a “collaborator.” It has the potential to contribute significant amounts of work to a project, or even just manifest the whole project on its own as a human would. Therefore, the tech companies have proven by their own language of “collaborator” that this is not simply a tool, and therefore should be viewed as a non-sentient creator in terms of plagiarism and copyright.

I used Mozart in the hypothetical from earlier since he is known for being a musical genius. These AI models, however, are like a fusion of every master artist that has ever existed (that they were trained on). 99% of people do not possess a level of talent anywhere near that, so if someone is able to collaborate with a super artist, the contributions of the super artist are likely going to be the prominent reason for the overall quality of the resulting work. If someone who had no musical talent or experience “collaborated” with Mozart, who would be the one doing the heavy lifting that results in a work of high quality?

Happy Accidents:

Commission requests to AI can be extremely vague and/or abstract, with people experimenting just to see what the AI model comes up with. In cases such as this, there is no particular vision that a person using AI is even trying to achieve with AI, they are just ‘poking’ the AI in different

experimental ways and seeing what comes out. This can then result in them making tweaks to the work produced by AI and then trying to copyright it as their own.

There is also an abundance of “happy accidents” that happen when interacting with AI where the AI can produce something of high quality or that has potential but doesn’t at all reflect the vision you had when you typed out your prompt and chose your settings. The issue is that there is no way to know what artistic vision, if any, a person had when they started using AI to generate work for them, and any vision they could claim to have had could have just been given to them by AI anyway.

Prompts should not be copyrightable:

Content creation is a process reflective of skills and talents related to the medium of the content in question. Writing English words in some particular order or syntactical configuration to cause an **AI model that interprets those English words in its own arbitrary way** to generate work in a different medium (visual art for example) should not be copyright protected in any capacity.

There are no skills or talents relevant to the output medium being utilized by the person writing a prompt and controlling other input parameters. They are also not communicating their request to another human who understands English in the same way that humans do, so their request in English is a dice roll in terms of how it will be interpreted by an AI model.

In addition to that, there exist numerous websites where users can copy and paste prompts other users have made, technologies to automatically generate prompts, and CLIP interrogators that take an image as input and provide a prompt to recreate that image in an AI model.

Automated Inputs:

There are already other technologies that exist to automate the inputs to other generative AI models. There are AI models that generate prompts to be fed into generative AI art models. AI to generate inputs to other generative AI will inevitably continue to grow alongside generative AI itself.

One such example is Deepmind's Promptbreeder, which automates prompt engineering. One particular article explains how PromptBreeder “automates prompt engineering by generating better prompts in successive generations using an evolutionary algorithm.”[11]

[11] Schreiner, Maximilian. “Deepmind’s Promptbreeder Automates Prompt Engineering.” *THE DECODER*, 4 Oct. 2023, the-decoder.com/deepminds-promptbreeder-automates-prompt-engineering/.

Exercise of Taste:

Using generative AI is essentially just an exercise of taste. One can repeatedly ask AI to generate works until the user likes one of the outputs, then tweak input parameters to try to get the AI to generate variations on that work until the person finds something they like better.

If we allow copyright of AI-generated works, we are allowing people simply to copyright what they've chosen that they like, not what they have actually created.

Consider the act of listening to songs on Spotify, choosing which ones you like best, and adding them to a playlist. Would you then try to take credit for the works you selected for the playlist? Or consider the act of searching Google with a search describing some idea, and then claiming that the pieces of art that Google returns as a result of that search are your own artwork. This is essentially what people are doing when they use generative AI. They are choosing which works that were generated by AI that they like the best and then trying to say they are their own.

While artists also decide what they want to incorporate into their style by finding what suits their taste, there is a significant difference between an artist and someone using AI who does not possess artistic talent. People hear music every day and have a good sense of their personal taste, but most people are not master musicians. If being creative was simply about choosing what you like, then far more people would have high levels of creative talent. This makes evident the fact that there is something much deeper involved in creative talent.

"Collaboration" and "Brainstorming" with AI:

Main points:

- The best course of action is to deny copyright on AI-generated work altogether until tech companies design robust transparency measures that cannot be tampered with or circumvented by the general public. Denying copyright on AI-generated work until such transparency measures are developed will incentivize tech companies to design required transparency measures. Once they do, then this issue can be revisited.

If someone who does not have musical talent, skill, or experience sat down with Mozart for a musical collaboration or brainstorming session, it is likely that 100% of the highest-quality content and ideas generated in that session would have come from Mozart and not the individual without musical aptitude. AI has the capability of generating master-quality content, however, the vast majority of the population does not possess master-level ability in a particular art form. Therefore the vast majority of people using AI to collaborate or brainstorm will likely be taking content and ideas from AI that are of far higher quality than they would be able to

produce on their own and trying to benefit from them. This feels like a loophole for plagiarism. Since AI is not sentient, there is no one to call out people who try to take credit for work they have not done or ideas they didn't come up with on their own.

Since people can use AI to generate ideas and then AI to manifest those ideas, the ability exists for people to obtain unique work to which they have made no contribution. Work such as this should absolutely not be able to be copyrighted and used for a person's benefit. The challenge, however, is in being able to know how much a person contributed to a particular work.

As stated earlier, all inputs human controls when generating content using AI (writing prompts, various other parameters, software plugins, etc.) are simply ways of communicating a vague commission request to the AI model in a language that the AI model will *respond to*. Some may try to argue that commissioning work from an artist is a form of collaboration, but there is a reason we have two separate words. Collaboration generally refers to people who are able to contribute in significant ways relevant to the particular art form. In the case of a painting, that would mean performing some significant amount of the overall painting required to complete that particular work.

To elaborate on this, there is one way of providing input to an AI system that could sometimes be closer to collaboration, however in most cases it still wouldn't be considered collaboration. This method involves using another image as input to an AI system. If someone were to draw their own image and then use that as input to an AI system, that would almost seem like collaboration, but again the important distinction to draw here is the contribution to the actual resulting work. If someone uses their own drawing as input, the AI outputs a work, and then the person doesn't do anything significant to modify the output of the AI, I would still consider this a commission request.

Most of the time when people use their own drawings as input to AI they are drawing things of very low quality and then having AI turn them into masterful works. A perfect example is a drawing of a green dragon that a user on the Stable Diffusion subreddit drew and used as input to an AI model[12]. The image looks like it was scribbled by a child, but then the output by AI looks like it was painted by a master artist.

Even when people modify the outputs of an AI system, I believe there has to be a highly transformative amount of work done on behalf of the human to be able to be copyrighted. Otherwise, there will be too many situations that qualify as plagiarism as discussed earlier. A person should not be able to use AI to obtain work far beyond what they would be able to produce without AI.

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[12] *low-quality green dragon scribbled by a human and turned into masterful art by AI*. 2 Sep. 2022. *Reddit.Com*, https://i.redd.it/jbkv1pz1qgl91.png. Accessed 6 Dec. 2023.

Something helpful to consider is, at what threshold would you start to feel like someone contributed enough work to be able to copyright the overall work? If someone only contributed 10% of the work, I don't think we would feel comfortable

The solution to the issue of collaboration and copyright comes down to transparency. We need transparency systems that can show some percentage of work done by a human compared to an AI. Issues will also arise with these transparency systems as users of open-source AI software will inevitably find ways to circumvent these measures (Context: *Issues with open source*). If we do not wait to allow copyright on works of that nature we will be giving people who do not possess artistic talent a competitive edge over those that do, which is unfair.

I believe the best course of action is to deny copyright on AI-generated work altogether until tech companies design robust transparency measures that cannot be tampered with or circumvented by the general public. Denying copyright on AI-generated work until such transparency measures are developed will incentivize tech companies to design required transparency measures. Once they do, then this issue can be revisited.

"Natural Protections" and Style:

Laws generally reflect the state of the world (of which technology is highly relevant) at the time they were created. As far as I understand, the laws related to copyright were not drafted with a technology that can learn as humans do and completely overlaps the full spectrum of human creativity in mind.

While it's true that you can't currently copyright style, there were some incredibly strong "protections" already "in place" that weren't even regarded as protections because they were just worldly realities. These "natural protections" were: talent, number of artists, time, social stigma, and the desire to be unique.

There aren't that many people who pursue careers as artists relative to the overall population and there simply are not that many people talented and dedicated enough to develop the skill to rip off some other highly talented artist's style to begin with. There was also a buffer of time before other people started to replicate an artist's style or integrate elements of it well enough to be significant because they would have to actually learn how to replicate the style first. Then there is the societal protection of being labeled a "rip-off," which encourages people to differentiate themselves. With all of these natural "protections" in place, the law was written to address needed protections to the degree in which they were required while maintaining a healthy balance in order to not stifle artists and competition in the realm of artistic IP.

The entrance of AI removes all of those natural "protections" that were in place. Now people who have no artistic talent or experience can use the style of any master artist for whatever purpose they want, including to make money. Since the talent requirement is now non-existent, the number of people in a position to be able to access another artist's style is theoretically the entire population that has internet access. It no longer requires time for anyone to learn how to replicate an artist's style and integrate elements of it into their own style because AI can learn the style in no time and then anyone can use it. Due to these natural protections being eliminated, protections now need to be reconsidered.

Being able to copyright style would be severely damaging to actual creators, however, allowing AI to replicate style is also severely damaging to creators. People who use AI to access another artist's style are not putting in any significant amount of work themselves, they are utilizing a loophole to access an artist's hard work and therefore they should have no avenue to benefit from an actual artist's hard work. However, humans who learn from the styles of others absorb concepts or aspects of style and filter them into their own variations (Context: *"Every mathematical combination has already occurred"*).

The only fair solution in my view is to heavily restrict copyright on AI-generated work in order to disincentivize it. This would still allow artists to naturally absorb elements of style while still making them their own, but prevent people who don't have artistic talent from using AI to access the styles of others.

Likeness:

This particular issue related to AI is so simple that it shouldn't really even be a question. Another person being able to use any aspect of another person's likeness, including their physical appearance, the sound of their voice, etc., without the consent of that individual should be strictly prohibited at all costs. If this is allowed, the world devolves into pure chaos.

Incentives:

Now that we've engaged in a thorough analysis of the nature and implications of this technology, it is important to understand the various incentives for different groups of people to push for little regulation around generative AI. Popular support does not equate to sound ethics, so reaching clarity on the incentives, and groups of people those incentives apply to is a key aspect of reaching ethical solutions related to AI.

Master-level artistic talent is rare among the overall population. This means that the vast majority of the population would certainly benefit from being able to commission work from or "collaborate" with a master-level artist if they can claim ownership of and benefit from that work. This would allow people to compete far higher than their level of talent, skill, or experience. Thus, there exists a very large incentive for the vast majority of the population to push for little to no regulation in terms of training and copyrightability with AI.

Since the segment of the population that does not possess master-level artistic talent represents the vast majority, the incentive for this demographic is rolled into a massive incentive for AI companies to push for little AI regulation so they can market their products to the vast majority of the population. Though I don't want to believe this, I think it is very likely that AI companies understand how unethical their technology is for artists, but are more than willing to throw us under the bus to be able to access this massive demographic, and will legally pursue every avenue possible to do so.

As a result, they engage in marketing campaigns that involve delusional messaging such as "anyone can create with AI," or "unleash your creativity with AI," despite the fact that using AI is actually a process of commissioning work from another creator - the AI model.

There is also a large incentive for companies involved in content creation to push for as little regulation as possible regarding AI. This will allow these companies to maximize their content output, while simultaneously downsizing their departments of artists.

There is a large incentive for America to allow our large industries to take advantage of AI in order to retain our lead on the world stage.

Again, popular support does not equate to sound ethics. I sincerely hope that the creative class of people is not crushed due to the major incentives that exist related to AI for the vast majority of the population.

Replies:

Reply to Internet Archive:

Here is an excerpt from Internet Archive's public comment that I would like to respond to:

> Second, any new copyright regulation of AI should not negatively impact the public's right and ability to access information, knowledge, and culture. A primary purpose of copyright is to expand access to knowledge. See Authors Guild v. Google, 804 F.3d 202, 212 (2d Cir. 2015) ("Thus, while authors are undoubtedly important intended

> beneficiaries of copyright, the ultimate, primary intended beneficiary is the public, whose access to knowledge copyright seeks to advance . . . .”). Proposals to amend the Copyright Act to address AI should be evaluated by the impact such new regulations would have on the public’s access to information, knowledge, and culture. In cases where proposals would have the effect of reducing public access, they should be rejected or balanced out with appropriate exceptions and limitations.

At this time in history, the greatest amount of information, knowledge, and culture that has ever been available is available to the largest number of people **by far**. Even so, most people don’t take advantage of this unprecedented access to information.

Regulation surrounding AI, such as preventing people from copyrighting works generated by AI or preventing the training of AI on content that is copyrighted without consent from the author would not restrict the public’s access to information at all. It would make it a bit more costly for websites such as Internet Archive to develop new services that utilize AI, however, which is why I don’t believe their main concern is “the public’s access to information, knowledge, and culture.”

It seems as though every company in the tech field feels entirely entitled to all creative works produced by humans and is pushing to be able to access such works without concern for the people who created them. They too often try to present it through some noble guise of having the concerns of people in mind, but the fact they are more than willing to throw creators under the bus proves otherwise. Creators are the only reason they have any content with which to fill an online library in the first place.

“Copyright isn’t a jobs program” - Societal Concerns:

> [Berkeley’s Samuelson] also has minimal patience for arguments that copyright law is meant to shield creative fields from change. “Copyright isn't a jobs program.”[13]

I don’t know the full context of this quote or Samuelson’s full viewpoint, but I’ll provide my criticism of this specific quote. I understand that copyright is not a jobs program. This issue, however, is far deeper than that. There are a large number of prominent and highly successful creatives who have explicitly voiced their distaste for this technology. **These individuals are clearly not worried about their jobs, so it should be obvious that there is something beyond that about this technology that is fundamentally disturbing to actual artists.**

This is not simply a normal change for “normal” fields. Creative fields are abnormal in that 100% of people who pursue careers as professional artists do so purely out of passion for engaging directly in a particular art form (similar to athletes). In many ways, AI is fundamentally in opposition to the psychological characteristics that drive people to pursue professional careers as artists in the first place (again, similar to athletes). For artists, work is not just a job, we have a massive attachment to the actual activity of the work itself; as evidenced by spending hours per day of our free time for years practicing to develop the skills required to be

[13] Knibbs, Kate. “Meet the Lawyer Leading the Human Resistance against AI.” *Wired*, Conde Nast, 22 Nov. 2023, www.wired.com/story/matthew-butterick-ai-copyright-lawsuits-openai-meta/.

professionals. As a result, AI has the potential to do much harm to creative fields as well as the human creative spirit overall.

To summarize before providing exposition:

- Generative AI sidelines people who pursue a particular artistic career out of a passion for a particular activity from directly engaging in that activity.
    - Imagine expecting professional athletes to be okay with robots playing in place of them and telling them it's just "normal industry change."
    - Though creative fields naturally change as new tools are developed, we have already examined why AI is far more complicated than a simple tool. It is effectively a creator in-and-of itself and the use of AI is an outsourcing of creative work; hence being sidelined.
- Engaging in artistic disciplines has many cognitive benefits for children and adults due to the direct engagement and stimulation of our minds, bodies, and senses. Since using AI offloads creative decision-making to AI models, this will deprive people of the benefits of actually making art.
- Learning is something that we have a neurochemical incentive to do. We experience feel-good chemicals from learning. Rendering certain practices fundamental to our human experiences far less meaningful will deprive us of a lot of these neurochemicals we love.
- Generative AI represents a major step toward the loss of individuality and identity. This is happening as a result of this delusional idea of being able to "democratize creativity" (Context: *Mass Delusion?*).

Before providing my own explanation, here are some quotes from just a few high-profile creators who feel negatively toward AI. There are so many more high-profile creators that feel the same way. Remember, none of the people quoted below have any reason whatsoever to worry about their jobs.

In an infamous clip from a documentary about Japanese animation legend Hayao Miyazaki, after being shown a demonstration of an AI-generated animation, Miyazaki famously says "I would never wish to incorporate this technology into my work." He then says "I strongly feel that this is an insult to life itself." This was in response to a specific AI animation demonstration, but after that, he goes on to say "I feel like we are nearing the end of times. We humans are losing faith in ourselves."[14]

A quote from Tim Burton:

> "I can't describe the feeling it gives you. It reminded me of when other cultures say, 'Don't take my picture because it is taking away your soul," Burton told The Independent, "What it does is it sucks something from you. It takes something from your soul or

[14] NHK. (2016). *Never-Ending Man: Hayao Miyazaki*. Japan. Retrieved November 29, 2023, from https://www.youtube.com/watch?v=7EvnKYOuvWo.

> psyche; that is very disturbing, especially if it has to do with you. It's like a robot taking your humanity, your soul."[15]

A quote from Guillermo del Toro:

> "I consume and love art made by humans. I am completely moved by that. And I am not interested in illustrations made by machines and the extrapolation of information. I talked to Dave MacKean, [who] is a great artist, and he told me his greatest hope is that AI cannot draw. It can interpolate information but it cannot draw. It can never capture a feeling or a countenance or the softness of a human face. Certainly, if that conversation was being had about film it would hurt deeply and I would think it, as Miyazaki says, "an insult to life itself."[16]

Let's think about deep fakes for a second. The idea of someone being able to generate a convincing video of you doing or saying things you have never done or said, including illegal and disturbing acts or statements, makes most of our skin crawl. There is something fundamentally violating about another person being able to use your likeness for their own purpose.

While this is a bit different from AI art generators, it resonates in a similar way with artists. The work of an artist is something that is a major part of our lives and identities. In many ways, it is an encapsulation of our experiences, talents, skills, hard work, thoughts, emotions, beliefs, etc. **The fact that anyone can now essentially download what we have spent so much of our time and energy working to develop - our blood, sweat, and tears, if you will - and, not only use it for their own purposes, but use it to actually damage our own careers is just fundamentally violating, sinister, and cruel.**

The arts represent one of the **few fields** where 100% of the people involved - meaning those who work professionally as artists - have pursued their careers purely out of passion. While it is unfortunate for people working in any field if automation takes their job, most of the time the worst part is just that the person loses their security and has to transition to a new job or even a new field entirely. Obviously, that is very stressful but, in most cases, I don't think the attachment to the job itself is anywhere near the worst part of that experience for most people.

I am not saying that most people don't enjoy or take pride in what they do, but artists notoriously devote hours a day for years of their lives to practicing, studying, and making art in spite of the fact that pursuing a career in art is an exceptionally financially risky decision. Before becoming professionals, this practice time is taken out of our free time. For an entire group of people to spend so much of their free time working incredibly hard on something, it should be evident that artists have an unusually deep connection to, and derive an unusually deep sense of meaning and purpose from, whatever artistic discipline they are involved in. The ability to deeply pursue

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[15] Tenore, Haley. "Tim Burton Says AI Imitations of His Art Style Are Missing 'humanity' and 'Soul' - Even If the Results Are 'Pretty Good.'" *Business Insider*, Business Insider, www.businessinsider.com/tim-burton-comments-ai-artwork-lacks-soul-humanity-2023-9. Accessed 28 Nov. 2023.

[16] Decider. "On the Subject of #AIart, Guillermo Del Toro (@realgdt) Says He Will Always 'Consume, and Love, Art Made by Humans.' PIC.TWITTER.COM/3Z4XOQXF0Q." *Twitter*, Twitter, 9 Dec. 2022, twitter.com/decider/status/1601321285807742976.

an art form, develop our talent, and grow our artistic skill, is extremely rewarding and provides an incredible amount of value to the human experience.

In this way, artists are very much like athletes. Athletes train very hard in a similar way that artists do. At the core of this similarity between athletes and artists is a deep attachment to the process of developing talent and skills involving our bodies, minds, and senses and then engaging in activities that allow us to use, perform, or execute the skills we have developed. **As a living being that has a body, brain, and senses, this is one of the most rewarding things to engage in because our bodies, brains, and senses represent the most fundamental aspects of our existence and are the very interface through which we experience the physical reality we inhabit.**

It is for this reason that most top talent artists do not have an interest in using AI. For an athlete, it would be like sending a robot in to play in your place instead of playing yourself. **If robots such as these were invented and allowed to play in professional sports, would anyone be surprised if athletes revolted against these robots? I don't believe so.** Even the idea of "collaborating" with a robot instead of substituting it for yourself entirely, as is pushed by those in the AI field such as the CEO of OpenAI Sam Altman, is something athletes and artists generally have no interest in. If athletes were expected to let a robot play for them half the time, they would still revolt against this. **Letting something else do the work for you is fundamentally in opposition to the personality of the type of person motivated to reach the top level of talent in a particular arena.**

We are at a point where the incentives by **those who benefit most** from bringing AI into arenas defined by human excellence is that these arenas or activities, in general, will be rendered pointless to engage in for **everyone**. It is very sad to imagine a future where humans have little or no motivation to develop our talents involving our bodies, minds, and senses because AI has dominated the arenas that were once defined by our human bodies, brains, and senses. **It is for this reason that I believe bringing AI into arenas defined by human excellence is anti-human**. The incentives are strong for people who cannot compete at the top level to want to try to use AI to allow them to do so, but they will ruin it for everyone present and future.

The cognitive benefits people, especially children due to heightened neuroplasticity, derive from engaging in visual art and music have been thoroughly scientifically documented. Therefore, creative practices that directly engage the use of a person's brain, senses, and body should be understood to be highly valuable in general, but especially highly valuable for the developing brains of children. However, when people use AI they are outsourcing the creative cognitive work to AI, thereby removing their opportunity to work out their own brains and reap the rewards.

Here are some quotes from studies and articles showing the cognitive benefits of playing music and making visual art.

Studies have shown that the arts, in general, provide benefits in the following areas: cognitive skills, social skills, spoken and written language, focus, self-control, empathy, academic performance, higher scores on state writing tests, better-behaved students, and more engaged

students in school. Studies have shown that music training (playing an instrument) provides benefits in the following areas: general intelligence, academic performance, attention and focus, language and literacy skills, memory, executive functions, spatial-temporal reasoning, concentration, self-discipline, empathy, self-esteem, and protection against age-related decline. Studies have shown that visual art provides benefits in spatial reasoning as well as a dramatic increase in memory.[17] [18] [19] [20] [21] [22] [23] [24] [25]

Studying and practicing various arts is highly stimulating and beneficial to the mind. In the age of AI, kids could still engage in art as a hobby but it is very sad to imagine a future where the kids who realize they have a high level of talent for art will also have to accept the fact that their talent is basically meaningless and there isn't really a point to develop their artistic talent as far as they can. Most professional artists pursue art professionally because they deeply feel they cannot spend their time doing anything else; it is a strong compulsion. I imagine there will be psychological friction for people with artistic inclination as both the opportunity to use one's talent to secure unconventional careers as well as the value of their rare gifts are lost.

There are many quotes I was tempted to include here from the studies and articles I cited above, but I decided they would have taken up too much space. There are a few, however, that I believe are highly relevant to my last point.

"Learning to play an instrument offers a child the opportunity for creative self-expression and the development of an identity." Simply, those opportunities will likely be lost due to being rendered meaningless. People can still play music, but the creative aspect of composing original music will eventually be lost. Music is a limited language, and AI will have the power to eventually generate every possible combination of notes, rhythms, style, tone, etc. so that there is nothing new to be made by humans.

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[17] Miendlarzewska, Ewa A, and Wiebke J Trost. "How Musical Training Affects Cognitive Development: Rhythm, Reward and Other Modulating Variables." *Frontiers in Neuroscience*, U.S. National Library of Medicine, 20 Jan. 2014, www.ncbi.nlm.nih.gov/pmc/articles/PMC3957486/.

[18] Moreno, Sylvain, et al. "Short-Term Music Training Enhances Verbal Intelligence and Executive Function." *Psychological Science*, U.S. National Library of Medicine, Nov. 2011, www.ncbi.nlm.nih.gov/pmc/articles/PMC3449320/.

[19] Tyler, Christopher W, and Lora T Likova. "The Role of the Visual Arts in Enhancing the Learning Process." *Frontiers*, Frontiers, 20 Jan. 2012, www.frontiersin.org/articles/10.3389/fnhum.2012.00008/full.

[20] Lee, Christine. "Documenting Children's Spatial Reasoning through Art: A Case Study on Play-Based Steam Education." *MDPI*, Multidisciplinary Digital Publishing Institute, 22 Sept. 2023,

[21]www.mdpi.com/2071-1050/15/19/14051#:~:text=Therefore%2C%20it%20is%20important%20to,opportunities%20to%20learn%20from%20art.

[22] "Investigating Causal Effects of Arts Education Experiences Final_0.Pdf: Powered by Box." *Box*, rice.app.box.com/s/nyrlcfjogvnkzmjo2tk49kdpckhvj3hi. Accessed 7 Dec. 2023.

[23] Zelazo, Philip David, et al. "Executive Function: Implications for Education. NCER 2017-2000." *National Center for Education Research*, National Center for Education Research. Available from: ED Pubs. P.O. Box 1398, Jessup, MD 20794. Tel: 877-433-7826; Fax: 301-470-1244; Web site: http://ies.ed.gov/ncer/, 30 Nov. 2015, eric.ed.gov/?id=ED570880.

[24] *The Surprisingly Powerful Influence of Drawing on Memory*, journals.sagepub.com/doi/abs/10.1177/0963721418755385. Accessed 7 Dec. 2023.

[25] *Combined Arhgef6 and Tumor Mutational Burden May Serve as ... - Cell Press*, www.cell.com/heliyon/fulltext/S2405-8440(23)05709-2. Accessed 7 Dec. 2023.

“Another key aspect of learning that can be facilitated by the arts is the emotional inspiration to be involved in the learning process.” “One such form of inspiration is the opportunity to go beyond the predigested material that is presented to develop original insights and contributions to the domain of interest. This form of creativity can be highly motivating to the learner, who feels part of the enterprise of accumulating the knowledge, rather than a passive recipient of the structured material.”

The second quote above speaks to me deeply as a musician. What has always inspired me, what has driven me to practice, study, and play music for hours a day since I was young, is the ability to explore unexplored musical terrain and make discoveries of things yet to be done. Finding new interesting ways of playing, ways of writing, and new stylistic elements has always been what drives me. **I am certainly not alone in that feeling and source of inspiration, as every artistic innovator throughout history who has made significant contributions to their particular art form was motivated by the same force**. There exists an artistic frontier and I fear that AI is going to take over in that process of exploration that should be left to us humans. AI will eventually have the power to exhaust the artistic frontier, leaving nothing new to be found; and it doesn’t even have ears or eyes with which to experience music or visual art.

Beyond that, generative AI represents a major step toward the loss of individuality and identity. In a strange way, it feels like a loss of an aspect of freedom. Generative AI represents the beginning of the ability to download or extract talent from the people who possess it and make it available to anyone for free or without compensation to the person it was stolen from.

Though the following may seem like farfetched sci-fi conjecture, I don’t think the following examples are out of the realm of possibility in the future; especially with AI greatly facilitating our progress toward such possibilities. Some of the most coveted traits are physical appearance, talent, and aspects of personality. To the reader, what are some of your strongest assets in terms of your identity? What if the things that set you out from other people were able to be extracted from you and made available to anyone who wanted them? Especially without your consent or compensation to you.

Imagine a future where people can drastically and convincingly change their physical appearance easily. As an example, imagine this technology existed in 1995 when Brad Pitt was named “sexiest man alive” by People magazine. All of a sudden there would have been a ton of Brad Pitts walking around (or subtle variations of Brad Pitt’s likeness). It would be deeply disturbing to witness, but imagine being Brad Pitt in that scenario.

The implications of being able to ‘download’ or extract aspects of a person’s identity and make them available to others are highly disturbing. Though the other examples I gave may seem far-fetched, generative AI is currently able to extract talent and likeness and make it available to others in digital form.

“Every mathematical combination has already occurred”:

Here is a quote from Justin Blau, taken from an article on The Verge:

> "At the core of music is math, and every mathematical combination has already occurred in some way, shape, or form. It's the performance of that math that changes depending on the singer or the song style," Justin Blau, co-founder of Royal and a DJ under the name 3LAU, tells The Verge. "Saying something is derivative is a pretty hard argument for copyright owners to make because we all borrow ideas from things that we've heard before. AI just does it at a way faster speed."[26]

As a musician who plays 3 instruments and has a degree in jazz guitar performance from one of the top university jazz programs in the world, this quote is ridiculous. It is true that math is at the core of music, but every mathematical combination has certainly not occurred within music!

While artists do 'borrow' ideas in a very loose sense of the word, what we do is absorb concepts from work we like. We then apply those concepts to our own internal repository of musical knowledge and skills in order to create something unique. The most talented artists throughout history have been the best at doing this.

Everyone who speaks English natively grew up hearing English every single day of their lives. We all 'borrow' ideas from how we hear others use language but most of us don't end up being the next Shakespeare.

If an artist is not talented, they are not going to be able to 'borrow' any concept from something they've heard, filter it through their own musical brain, and make something good out of it. AI certainly has the ability to do this like the most talented humans. This represents what I consider to be a sneaky aspect of a lot of these arguments. The speed at which something can 'borrow,' filter through its own musical brain, and then output something of quality **is not the relevant factor there**. This **quality** of this process is what separates people who are non-artists and mediocre artists from great artists.

Also highly relevant is the quality of the 'musical brain' that the 'borrowed' concept is filtered through. A great artist will have built up a very high-quality 'musical brain' to filter concepts through over time by virtue of the fact that they have always been good at this overall process (borrow, filter, output) and have been building up their musical brain by engaging in that process with high quality for years.

Using technology like this gives the vast majority of people access to a 'musical brain' that likely far exceeds their own ability.

I find quotes such as this to be highly frustrating because this may sound convincing to someone who is not a creator when, in reality, what is happening is this person is just trying to justify being able to commission work from an AI model and then plagiarizing it for their own benefit. They are trying to make it sound like they would be able to get the same quality result without AI, and that the AI is just helping them achieve it faster. If someone does not have

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[26] David, Emilia. "Musicians Are Eyeing a Legal Shortcut to Fight AI Voice Clones." *The Verge*, 21 Sept. 2023, www.theverge.com/2023/9/21/23836337/music-generative-ai-voice-likeness-regulation.

top-level talent, spending more time on a particular work will not give them something of top quality.

“AI is everywhere, including your Gmail inbox”

One common talking point I’ve heard used by many people is the idea that AI is everywhere and we’ve been using it for a long time. People often say that AI is even being used in our Gmail inboxes. Neil deGrasse Tyson even used this talking point during his recent appearance on The Colbert Report.[27] He also goes on to talk about how we’ve always been using machines and brings up the calculator as a comparison for why creative people should not be angry about generative AI.

However, it should be readily understood that this talking point is completely irrelevant to the current technological advancement of **generative** AI. Generative AI has not been the type of AI operating within our Gmail inboxes. Generative AI is not what is running inside a calculator or our computers (though it is being gradually integrated into our computers now). The point is that a technology that can create as a human can create has never existed. This one is so obvious to me it’s strange to hear high-profile individuals bringing this up publicly.

I don’t think people generally care if AI is running in the background to optimize the functionality of their device or the website they are viewing. A human can’t interface with a computer and manually control the algorithms operating in real time in order to optimize them. Generative AI taking over fields humans participate in out of passion is an entirely different story.

My Background and Overall Sentiment:

I have a B.M. in Jazz Guitar Performance from William Paterson University. Guitar is my second instrument, with drums being my first and piano my third. I have been a visual artist for as long as I can remember, and that is the first artistic discipline I got involved in.

Personally, I very much admire AI technology itself and commend the people who work on it for being able to make such incredible achievements. However, I have next to no interest in using it in my work. I have experimented extensively with AI for visual art and I simply cannot force myself to accept the delusion that I am doing anything creative when I use AI.

I can think of numerous ways to use the technology to achieve some unique artistic experiences beyond just 2D images and music, and I will likely pursue those if AI ends up taking over 2D art and music, but I don’t think the pros outweigh the cons with bringing AI into creative fields.

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[27] The Late Show with Stephen Colbert, director. *“AI Is All Around Us” - Neil deGrasse Tyson Says We Shouldn’t Worry About Artificial Intelligence*. *YouTube*, YouTube, 3 Oct. 2023, https://www.youtube.com/watch?v=5Qon72VKH30. Accessed 6 Dec. 2023.

Even if I ended up working on those experiences, I know it wouldn't feel like I am contributing much to the project. It will be me directing an AI to make art.

I believe that the loss of meaning that will occur with the art forms that are entwined with our basic senses is not worth what AI can bring to art. It's not worth passing the torch of art-making to AI. I am also concerned about the fact that the 'artistic frontier' will be exhausted by AI relatively quickly since it already has the power to do so and will only gain more power as time goes on.

Nearly a decade ago I developed severe musculoskeletal issues that derailed my career as a musician. Instead of abandoning music and getting on with life, I put everything on hold as I worked for the past decade to rehabilitate myself to get back to doing what I do.

Musculoskeletal issues that derailed my career for a decade could not put a dent in my inspiration for music and visual art in the slightest. However, generative AI has dented my inspiration quite a bit. If generative AI takes over creative industries I may very well just find something else to do with my life.

I represent the class of individuals that are most passionate about creativity. Generative AI will likely drive us away from creative fields.

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