## SciencesPo CHAIR DIGITAL, GOVERNANCE AND

SOVEREIGNTY

## LIFE IN COAUTHORSHIP

### Copyright Regulation in Collaborative Works Between Humans and Al

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#### **Executive Summary**

The increasing use of artificial intelligence (AI) in creative processes is raising multidisciplinary issues regarding the use of copyrighted material for the training of AI systems and the uncertainties related to the products generated from these systems. This paper explores the regulatory, ethical, and social challenges posed by the collaborative creation between humans and AI, referred to metaphorically as "coauthorship."

The term "coauthorship" used in this text's title doesn't imply that AI systems can be literal co-authors. As explained below, only humans can hold authorship. The anticipated trajectory is that AI tools will become as integral to our creative endeavors as computers and software have been in recent decades. Here, the "coauthorship" is metaphorical, indicating that humans will increasingly benefit from the capabilities provided by AI systems, enhancing the effectiveness of our creative works.

The paper explores the definitions and possibilities of generative AI, illustrating its potential to create content like text, images, and music. It offers a brief historical context of technological advancements and their impact on creative industries.

Four main axes of regulation are proposed: legal norms, social norms and ethics, market dynamics, and architectural considerations. The paper emphasizes the importance of distinguishing between passive and active uses of AI, the need for transparency in AI-assisted works, and the possibilities offered by personalized AI systems to reshape copyright ownership.

Legal uncertainties may persist, as the law is always trying to regulate, *a posteriori*, what is already a reality. For this reason, the legality of use of copyrighted material for training AI and the attribution of authorship to AI-generated content remain uncertain. Ethical concerns focus on the challenges faced by human artists and the integrity of their creative works. Market dynamics

reflect the emergence of new business models that could benefit creators and AI developers alike.

Finally, architectural considerations analyze the development of open-source AI platforms to promote innovation and collaboration while addressing security and ethical risks. The paper concludes that the challenges of AI in creative industries require a multidisciplinary approach to develop the necessary innovative regulatory frameworks.

#### Life in Coauthorship

Regulating the collaborative creation between humans and Al<sup>1</sup>



Figure 1: Dall-E AI illustration prompted by the author

<sup>&</sup>lt;sup>1</sup> The image below was generated by Chat-GPT 4 based on the analysis of this text.

#### INTRODUCTION

The most important literary award in Brazil is the Jabuti Prize. Established in 1959, it annually recognizes distinctions in various categories, such as best novel, best short story collection, best poetry book, and best comic book, among many others.

In November 2023, the nominees for that year's award were announced. However, what caught the attention of the publishing market was not the literary quality of the nominated texts. Almost all the attention turned to the disqualification of illustrator Vicente Pessôa for using an AI tool (entitled Midjourney) to illustrate a new version of Mary Shelley's book *Frankenstein*<sup>2</sup>, which, curiously, talks about bringing an AI to life.

Vicente Pessôa<sup>3</sup> had disclosed in the bibliographic entry of the book the use of the Midjourney<sup>4</sup> tool:

<sup>&</sup>lt;sup>2</sup> Frankenstein, by May Shelley, published by Clube da Literatura Clássica. Brazil: 2022.

<sup>&</sup>lt;sup>3</sup> Personal website: <u>https://www.vicentepessoa.com/</u>

<sup>&</sup>lt;sup>4</sup> Available at <u>https://www.midjourney.com/explore</u>

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 Figure 2: publishing information of Frankenstein, by Clube da Literatura Clássica.

 Brazil:
 2022.

 https://pt.m.wikipedia.org/wiki/Ficheiro:Ficha\_catalogr%C3%A1fica\_do\_Frankenstein

 \_do\_Clube\_da\_Literatura\_Cl%C3%A1ssica.png

He also participated in live online events to explain how AI had been used in his creative process. According to the illustrator, numerous tests were conducted before arriving at the 50 images that make up the book, such as the ones shown below:



However, it seems that the award jurors either did not notice the mention of Midjourney or were unable to associate the name with the AI tool. In response to the controversy, the organization of the award chose to disqualify the illustrator without providing a direct explanation. They merely informed that "unforeseen cases in the regulations are deliberated by the curators, and the evaluation of works that use AI in their production was not contemplated in these rules"<sup>5</sup>. In other words, their decision was based on a loophole in the regulations.

Despite being upset, Pessôa celebrated. He said that "new is always received with hatred and criticism" and added: "when photography appeared, painters said it was a lesser art, that they would be out of work. When someone is ahead, the ones lagging behind complain (...) I think it's a waste for my colleagues not to use AI. Or maybe they use it and don't admit it?" <sup>6</sup>.

In the beginning of 2024, Japanese writer Rie Kudan confessed that her prizewinning book, "The Tokyo Tower of Sympathy", had 5% of its content generated word-by-word by ChatGPT<sup>7</sup>. The jury of the prestigious Akutagawa Prize qualified that work as "practically flawless" and one of its members said, "the selection committee did not see Kudan's use of AI as a problem". People on social media, however, considered it "disrespectful" to authors whose books were written without the assistance of AI systems. Unlike the Brazilian case, however, her award was not withdrawn.

Despite their differences, both cases point to the same dilemmas related to the "coauthorship" between humans and AI tools. And they include two regulatory categories we will further examine: copyrights regulation and social norms/ethics.

<sup>&</sup>lt;sup>5</sup> Available at <u>https://www1.folha.uol.com.br/ilustrada/2023/11/jabuti-desclassifica-de-premio-ilustracao-feita-com-inteligencia-artificial.shtml</u>

<sup>&</sup>lt;sup>6</sup> Available at <u>https://oglobo.globo.com/cultura/livros/noticia/2023/11/10/ilustrador-diz-que-</u> <u>desclassificacao-do-jabuti-foi-melhor-coisa-e-quer-inspirar-premio-para-ia.ghtml</u>

<sup>&</sup>lt;sup>7</sup> Available at <u>https://edition.cnn.com/2024/01/19/style/rie-kudan-akutagawa-prize-</u> <u>chatgpt/index.html</u>

The aim of this paper is to look at creations arising from the use of generative AI tools and explore the possible regulation of eventual copyright ownership and ethical measures to be observed in public use of such works.

#### 1. What is generative AI and what can it do?

By now, anyone who follows daily news has heard of generative AI. There is no consensual definition of "artificial intelligence", though we can extract some common elements from the various attempts to delineate its contours.

The term was first coined at the Dartmouth Summer Research Project of 1956, which is often taken as the event that initiated AI as a research discipline<sup>8</sup>. John McCarthy, a mathematics professor at Dartmouth at the time, is credited for coining the expression "artificial intelligence" and solidifying the orientation of the field. Marvin Minsky, a researcher at Carnegie-Mellon University and another participant of the Dartmouth event, defined "artificial intelligence" as "the construction of computer programs that engage in tasks that are currently more satisfactorily performed by human beings because they require high-level mental processes such as: perceptual learning, memory organization and critical reasoning"<sup>9</sup>.

Since then, many definitions have been proposed without a consensus being reached. For example, the Organisation for Economic Co-operation and Development (OECD) defines an AI System as "a machine-based system that can, for a given set of human defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments"<sup>10</sup>.

The European Union (EU) has been making efforts to develop a plan for regulating AI, known as the AI Act<sup>11</sup>. The AI Act was published in the Official

at

<sup>&</sup>lt;sup>8</sup> Moor, James, The Dartmouth College Artificial Intelligence Conference: the Next Fifty Years, Al Magazine Volume 27 Number 4 (2006) (© AAAI)

<sup>&</sup>lt;sup>9</sup> Available at https://ulb-dok.uibk.ac.at/ulbtirolhs/content/pagetext/10121279

<sup>&</sup>lt;sup>10</sup> Available at https://mneguidelines.oecd.org/RBC-and-artificial-intelligence.pdf <sup>11</sup> For a historical development of the AI Act and analysis of its main topics, see G'sell, Florence, An Overview of the European Union Framework Governing Generative AI Models and Systems (March 17, 2024). Available

SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=4762804

Journal of the European Union in 2024<sup>12</sup>. It has entered into force twenty days after its publication and will be fully applicable on August 2, 2026, although some exceptions may apply.

In Article 3 of the AI Act, we find the following definition of an "AI system": "A machine-based system designed to operate with varying levels of autonomy, that may exhibit adaptiveness after deployment and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments."

Generative AI, in turn, refers to the use of AI to create new content, like text, images, music, audio, and videos. According to the Ada Lovelace Institute<sup>13</sup>, generative AI *"refers to AI systems that can generate content based on user inputs such as text prompts. The content types (also known as modalities) that can be generated include like images, video, text and audio"*<sup>14</sup> So, simply put, Generative AI involves the use of advanced AI to produce new content, such as text, images, and audio, through models that learn from large datasets and can adapt to various tasks.

Generative AI systems are usually powered foundation models, or generalpurpose AI models. According to the authors of "On the Opportunities and Risks of Foundation Models", a foundation model is "*any model that is trained on broad data (generally using self-supervision at scale) that can be adapted (e.g., finetuned) to a wide range of downstream tasks*" <sup>15</sup>.

These are AI models that typically uses deep learning and are trained on large datasets. They are characterized in part by their ability to adapt to a wide range of tasks. In addition (and closely related to this),<sup>16</sup> To sum up, these models can multi-task and perform out-of-the-box tasks, including summarization, Q&A,

<sup>&</sup>lt;sup>12</sup> Available at <u>https://www.europarl.europa.eu/doceo/document/TA-9-2024-0138\_EN.html</u>.

<sup>13</sup> https://www.adalovelaceinstitute.org/

<sup>&</sup>lt;sup>14</sup> Available at https://www.adalovelaceinstitute.org/resource/foundation-models-explainer/

<sup>&</sup>lt;sup>15</sup> The full paper can be found here: <u>https://crfm.stanford.edu/report.html</u>

<sup>&</sup>lt;sup>16</sup> Available at https://publications.parliament.uk/pa/ld5804/ldselect/ldcomm/54/5405.htm

classification, and more. Plus, with minimal training required, foundation models can be adapted for targeted use cases with very little example data" <sup>17</sup>.

Generative AI can write texts from a few commands, improve the wording of a business email, translate, and create drawings and illustrations, among other applications. It is possible that through generative AI, new medications may be produced from the recombination of molecules. Well-trained chatbots can reduce costs, time, and improve efficiency in customer service. Areas like marketing, finance, and logistics can benefit from data analysis derived from generative AI systems. It is also possible to create programming code, as well as complement or improve pre-existing code.

The popularization of chatbots such as OpenAI's ChatGPT,<sup>18</sup>, has triggered a race to release applications of generative AI. In recent months, various intelligent systems have been made available to the public, offering a wide range of functionalities<sup>19</sup>.

In general, the results obtained with these tools can be impressive, as can the challenges that will follow. Historically, humans have taken advantage of technological improvements that have become part of our daily lives, either enhancing our experiences or reducing the effort required to complete ordinary tasks. Writing by hand, on a typewriter, computer, or cell phone has become indispensable for social advancement. Calculators, architectural design software, running shoes, and highly technological fabric and design swimwear for swimming competitions are examples of tools that do not replace human skills but enhance them.

<sup>&</sup>lt;sup>17</sup> Available at <u>https://cloud.google.com/use-cases/generative-ai</u>. "Generative AI works by using an ML model to learn the patterns and relationships in a dataset of human-created content. It then uses the learned patterns to generate new content. The most common way to train a generative AI model is to use supervised learning - the model is given a set of human-created content and corresponding labels. It then learns to generate content that is similar to the human-created content and labeled with the same labels".

<sup>18</sup> https://openai.com/

<sup>&</sup>lt;sup>19</sup> For example, Bard (Google), Copilot (Microsoft), Midjourney and Human Generator. <u>https://seo.ai/blog/generative-ai-applications</u> and <u>https://www.eweek.com/artificial-intelligence/generative-ai-apps-tools/</u> present some examples of tools, but they are becoming more omnipresent and specialized.

The dilemma of the technical use of generative AI tools will occur in all professions. What is the correct, ethical, fair, and acceptable limit of their use as a tool for enhancement, rather than a replacement for human work? Perhaps some measures need to be taken. Is it necessary to make explicit to what extent generative AI tools were used in a particular task? <sup>20</sup> Moreover, how can we use the technological structures themselves to ensure economic and social benefits, without leaving behind key factors such as transparency for the adoption of such tools?

#### 2. A historical challenge

Technological advances cause amazement. The phrase attributed to Arthur C. Clarke is famous: "any sufficiently advanced technology is indistinguishable from magic"<sup>21</sup>. The magic of the moment is ChatGPT and other generative AI tools.

The problem with a new magic trick is knowing when and how to regulate it. It is reported that in 1929, in the Brazilian state of Minas Gerais, one of the most economically developed states in the country, a court "annulled a criminal sentence because it had been typewritten, considering that the use of the typewriter could anticipate its publicity."<sup>22</sup> In the 1990s, judicial sentences prepared using microcomputers were annulled, for fear that the reproducibility of the text might hinder the thorough study of the process to which judges must dedicate themselves to.

With the emergence of the commercial internet in the 1990s, new waves of doubts arose. How could works covered by copyright, such as music, be protected when they were no longer tied to physical formats and could be downloaded for free? After all, the control of copies has always been essential to the economic circulation of intellectual work, such as books, music, films, and

 <sup>&</sup>lt;sup>20</sup> Google is testing technological watermarks in works generated by AI systems: <u>https://www.bbc.com/news/technology-66618852</u>
 <sup>21</sup> Available at <u>https://lab.cccb.org/en/arthur-c-clarke-any-sufficiently-advanced-technology-is-</u>

indistinguishable-from-magic/

<sup>&</sup>lt;sup>22</sup> COELHO, Fábio Ulhoa. O *Judiciário e a tecnologia*. Available at <u>https://www.migalhas.com.br/depeso/298546/o-judiciario-e-a-tecnologia</u>

paintings. However, what do we do when the protected good (the creation) is definitively separated from the copies to which it has always been bound?

What the world has witnessed over the last 30 years is the dematerialization of cultural goods. Consumers no longer depend on physical copies, like printed books, LPs or CDs, VCR tapes or DVDs. Anyone can now directly access texts, music and movies in digital platforms. Business models changed from selling physical copies to subscription-based services, such as Spotify and Netflix. Consequently, copyright rules, that were primarily developed between the end of the 19<sup>th</sup> century and before the widespread dissemination of the internet, no longer fit the system they once helped to create.

As a secondary consequence, the increasing offer of digital cultural goods, either with legal or illegal access (as will be mentioned below), has been indispensable to the development of powerful AI tools, since they need large databases to be trained.

Another challenge that has arisen in the last decades is the enforcement of ethical use of copyrighted works. Digital versions are easily accessed and manipulated. The more content that was offered on the internet, the easier it became to appropriate third-parties content. The academic world had to discuss more often and more deeply the use of digital sources in papers, essays, reports, and other research material. Plagiarism detection software became common ground in educational institutions and all serious researchers became more attentive to the ethical use of internet sources.

However, the challenge we must face when AI is involved is much greater, as we will see in more details below. As a rule, generative AI tools can, many times, effectively create something that did not exist before. This result may, from an objective point of view, be considered a new work and, therefore, at least in theory, the creation is outside the scope of plagiarism analysis. Not that this always happens. In many cases, generative AI tools create images or texts that are very similar to previous material on which it was trained, like the ones shown

below (Figure 2)<sup>23</sup>. In this case, we are not dealing with original, copyrightable work. In fact, it seems to be the opposite: we are dealing with a possible copyright infringement.



Figure 2: Midjourney creation

Nicolas Carlini (et. al.) claim that "large language models (LMs) have been shown to memorize parts of their training data, and when prompted appropriately, they will emit the memorized training data verbatim. This is undesirable because memorization violates privacy (exposing user data), degrades utility (repeated

<sup>&</sup>lt;sup>23</sup> Available at https://spectrum.ieee.org/midjourney-copyright

easy-to-memorize text is often low quality), and hurts fairness (some texts are memorized over others)"<sup>24</sup>.

In one of the most debated cases concerning the training of AI technology with copyrighted material, The New York Times is suing Open AI and Microsoft because "the *Times* alleges OpenAI and Microsoft's large language models (LLMs), which power ChatGPT and Copilot, 'can generate output that recites Times content verbatim, closely summarizes it, and mimics its expressive style"<sup>25</sup>.

According to the lawsuit, "Defendants also use Microsoft's Bing search index, which copies and categorizes The Times's online content, to generate responses that contain verbatim excerpts and detailed summaries of Times articles that are significantly longer and more detailed than those returned by traditional search engines". For this reason, by providing Times content without The Times's permission or authorization, Defendants' tools would undermine and damage The Times's relationship with its readers, depriving The Times of subscription, licensing, advertising, and affiliate revenue<sup>26</sup>.

In another lawsuit, the Authors Guild and several authors, such as Jonathan Franzen and John Grisham, sue Open AI and Microsoft alleging that "*Open AI*'s *LLMs can spit out derivative works: material that is based on, mimics, summarizes, or paraphrases Plaintiffs' works, and harms the market for them*"<sup>27</sup>.

For all those reasons, a new moment of regulation has come, both legal and social. It will not be just uninspired students who will use generative AI tools in their daily tasks. The scope of use of such tools is so vast that their emergence

<sup>&</sup>lt;sup>24</sup> CARLINI, N.; IPPOLITO, D.; JAGIELSKI, M.; LEE, K.; TRAMÈR, F.; ZHANG, C. Quantifying Memorization Across Neural Language Models. Published as a conference paper at ICLR 2023. Available at https://arxiv.org/pdf/2202.07646.pdf

<sup>&</sup>lt;sup>25</sup> Available at <u>https://www.theverge.com/2023/12/27/24016212/new-york-times-openai-microsoft-lawsuit-copyright-infringement</u>

<sup>&</sup>lt;sup>26</sup> Available at <u>https://nytco-assets.nytimes.com/2023/12/NYT\_Complaint\_Dec2023.pdf</u>

<sup>&</sup>lt;sup>27</sup> Available at <u>https://authorsguild.org/app/uploads/2023/12/Authors-Guild-OpenAI-Microsoft-Class-Action-Complaint-Dec-2023.pdf</u>

and dissemination are probably comparable to the spread of the internet itself, about 30 years ago.

#### 3. To use, or not to use, does not seem to be the question

A dilemma like Shakespeare's Hamlet does not apply where there is no alternative. Of course, individual choices are possible, but collectively it seems that we will follow a single path: the adoption of Al tools that promise to deeply impact our daily lives. In March 2023, a letter containing 1,800 signatures, including those of the controversial Elon Musk, cognitive scientist Gary Marcus, Apple co-founder Steve Wozniak, and historian Yuval Noah Harari, called for a pause the training of Al systems that were, by that time, more powerful than GPT-4 for at least six months<sup>28</sup>. Sam Altman, Open Al's CEO, argued that the letter "lacked technical nuance about where we need the pause" And added: *"there's parts of the thrust that I really agree with (…) We spent more than six months after we finished training GPT-4 before we released it, so taking the time to really study the safety of the model … to really try to understand what's going on and mitigate as much as you can is important<sup>29</sup>. However, as we all know by now, not only was the pause not implemented, but the pace of research was not even slowed down<sup>30</sup>.* 

Throughout the last few years, experts have warned that no one knows exactly how AI works (nor what consequences may arise from it) <sup>31 32</sup>. Therefore, many

 <sup>&</sup>lt;sup>28</sup> Available at <u>https://futureoflife.org/open-letter/pause-giant-ai-experiments/</u>
 <sup>29</sup> Available at

https://www.businessinsider.com/openai-ceo-sam-altman-responds-letter-elon-musk-ai-pause-2023-4

<sup>&</sup>lt;sup>30</sup> Available at <u>https://www.wired.com/story/fast-forward-elon-musk-letter-pause-ai-development/?redirectURL=https%3A%2F%2Fwww.wired.com%2Fstory%2Ffast-forward-elon-musk-letter-pause-ai-development%2F</u>

musk-letter-pause-ai-development%2F <sup>31</sup> Available at <u>https://www.bbc.com/future/article/20230405-why-ai-is-becoming-impossible-for-humans-to-understand</u> and at <u>https://www.technologyreview.com/2017/04/11/5113/the-dark-secret-at-the-heart-of-ai/</u>.

<sup>&</sup>lt;sup>32</sup> An article from MIT Technology Review dated March, 2024, called "Nobody knows how Al works" mentions that "Tech companies are rushing Al-powered products to launch, despite extensive evidence that they are hard to control and often behave in unpredictable ways. This weird behavior happens because nobody knows exactly how—or why—deep learning, the fundamental technology behind today's Al boom, works". Being so, more glitches and fails should be expected as Al becomes a part of real-world products. Available at <u>https://www.technologyreview.com/2024/03/05/1089449/nobody-knows-how-ai-works/</u>

risks are envisaged when we discuss AI regulation, such as bias, (lack of) transparency or explainability, spread of disinformation, fraud, scams, impersonation, and the creation of child abuse images. Not to mention risks to political systems and societies. According to a report published by the UK Government, *"the aggregate risk is significant. The preparedness of countries, industries and society to mitigate these risks varies. Globally regulation is incomplete and highly likely failing to anticipate future developments."*<sup>33</sup>

From another perspective, the "International Scientific Report on the Safety of Advanced AI" published in May, 2024 and chaired by Professor Yoshua Bengio, divides risks into (*i*) malicious use risk; (*ii*) risks from malfunctions; (*iii*) systemic risks and (*iv*) cross-cutting technical risk factors. In which concerns copyright risks, the report affirms that the issue includes "*the questions of whether datasets are assembled specifically for machine learning or originally for other purposes, whether the infringement analysis applies to model inputs or model outputs, and issues of jurisdiction, among others. <i>This also presents questions on who is liable for infringement or harmful model outputs*. While there are technical strategies for mitigating the risks of copyright infringement from model outputs, these risks are difficult to eliminate entirely" <sup>34</sup> (emphasis added).

When it comes to the connection between generative AI and intellectual property and related rights, the World Intellectual Property Organization (WIPO) states that the risks encompass: (*i*) confidentiality concerns, if users include confidential information in prompts, since the AI provider may retain a copy of the information and, further, the information may become part of the model and the output shared publicly with other users; (*ii*) copyright infringement due to the use of copyrighted material for the training of AI models; (*iii*) breach of obligations if AI models are trained on code subject to open-source requirements and those requirements are not observed; (*iv*) unauthorized use of voice and image to create deep fakes, in

 <sup>&</sup>lt;sup>33</sup> Safety and Security Risks of Generative Artificial Intelligence to 2025. Available at https://assets.publishing.service.gov.uk/media/653932db80884d0013f71b15/generative-ai-safety-security-risks-2025-annex-b.pdf
 <sup>34</sup> Available at

https://assets.publishing.service.gov.uk/media/6655982fdc15efdddf1a842f/international\_scientific\_report\_on\_the\_safety\_of\_advanced\_ai\_interim\_report.pdf

violation of personhood rights; (v) uncertainty over whether there can be IP in AI outputs and who would own any such rights<sup>35</sup>.

However, we can also claim that the quality of generative AI represents a great opportunity for the enhancement of creative and labor activities. Of course, there are social risks, including those resulting from the creative use of such tools<sup>36</sup>, such as the potential economic loss for artists, actors, writers. This danger cannot be disregarded.

Technological advancement has always implied changes in the workforce. Professions ceased to exist due to the mechanization of activities. Carriage drivers, lamp lighters, and telephone operators became obsolete activities due to new scientific enterprises. However, the transition from an agrarian economy to an industrial economy and, then, to a digital economy, was made progressively. As certain functions were extinguished, others emerged to accommodate a contingent of new workers. The question now is whether the speed of evolution that will lead us to the economy of AI (if we may express it this way) will be able to accommodate the various classes of unemployed individuals that are expected to emerge in the coming decades. Among them are the artists.

According to Ronaldo Lemos, one of Brazil's leading technology experts, there are three forces that regulate AI: data protection, labor relations, and copyright law<sup>37</sup>.

<sup>&</sup>lt;sup>35</sup> Generative AI Navigating Intellectual Property. Available at <u>https://www.wipo.int/about-ip/en/frontier\_technologies/news/2024/news\_0002.html</u>.

<sup>&</sup>lt;sup>36</sup> In this regard, will there be an unfair competition between generative AI systems and authors, individuals, who create their works in human time, not in machine time, and who, therefore, need a long process of learning and testing before creation? How many people might lose their sources of income if they have to compete with automated systems that do not require incentives to create? Regarding the effects of AI on the job market, see, for example, HARARI, Yuval Noah. **Homo Deus**.

<sup>&</sup>lt;sup>37</sup> However, three unexpected regulatory forces emerged during this period to govern artificial intelligence: copyright law, data protection, and labor relations. None of them are new or have dazzling names like the charter envisioned. Yet, these three forces are the ones putting artificial intelligence platforms in check. Data protection is now (alongside consumer rights) one of the regulatory tools enabling public authorities to hold AI companies accountable. All companies have the legal obligation to protect personal data and consumers. If they step out of line, they face the consequences. Copyright law, in turn, has become a regulatory lever. Can AI companies train their intelligent models using works protected by copyright? Currently, there are four major lawsuits in the United States filed by intellectual creators against AI platforms. The most notable

At the end of the 20<sup>th</sup> century, when downloading music through the internet became technically possible for many people, we had the beginning of a long (and unfinished) discussion on how to regulate copyright online. The reason is simple. While the creation and diffusion of cultural goods (books, CDs and DVDs, among others) was under the control of companies, copyright was a subject that would interest only those directly involved with the production chain of such intellectual goods. However, when anybody with access to the internet became able to access, download, remix and disseminate their work online, copyright was brought to the center of internet regulation. Social solutions (like creative commons licenses<sup>38</sup>) were developed, business models were discussed<sup>39</sup>, and copyright infringement online became a universal concern.

Nowadays, the situation has become much more complex. Humans can collaborate with AI tools to generate entirely new content, not merely derivative works. While it's true that generative AI also builds upon pre-existing data, the landscape has fundamentally changed. Previously, individuals relied on available sources and their own skills to create derivative works. However, today, anyone, irrespective of their artistic ability, can produce entirely new images or texts. These creations are informed by vast databases, making the creative output largely independent of the creator's personal talent or skill level.

Assuming that people will increasingly integrate AI tools into their daily lives, both professionally and personally, to develop new creative works, it becomes crucial to examine the regulatory frameworks surrounding these activities. While copyright often stands at the forefront of discussions on generative AI, it is surrounded by regulatory considerations that affect not just the realm of intellectual property, but also the broader regulation of generative AI as a whole.

was signed by writers like John Grisham and George R.R. Martin, author of *Game of Thrones*. The outcome of these cases will have a global impact on AI platforms. Finally, labor relations have achieved the most immediate regulatory limits. The strike by writers and creative professionals in the United States yielded real results. It limited the expansion of AI in the creative industries where they work. This has been the card that has worked so far.

Available at https://www1.folha.uol.com.br/colunas/ronaldolemos/2023/10/as-tres-forcas-que-regulam-a-ia.shtml

<sup>&</sup>lt;sup>38</sup> See https://creativecommons.org/

<sup>&</sup>lt;sup>39</sup> For example, <u>https://businessmodelanalyst.com/netflix-business-model/</u>

# 4. Four modalities of regulation of collaborative creation between humans and AI

In his classic text "The Law of the Horse: What Cyberlaw Might Teach", Lawrence Lessig famously stated that regulation is the result of four forces: law, social norms, market, and architecture<sup>40</sup>:



Figure 3: Four modalities of regulation<sup>41</sup>

Lessig mentions that "behavior, we might say, is regulated by four kinds of constraints.16 Law is just one of those constraints". The others would be social norms, the market and "architecture".Lessig also mentions that "these four constraints — both in real space and in cyberspace — operate together. For any given policy, their interaction may be cooperative, or competitive. Thus, to understand how a regulation might succeed, we must view these four modalities as acting on the same field, and understand how they interact"<sup>42</sup>.

However, it is important to note the effect that "architecture" has on law. Lessig states that "where architectures of code change the constraints of law, they in effect displace values in the law. Lawmakers will then have to decide whether to

<sup>&</sup>lt;sup>40</sup> LESSIG, Lawrence. The Law of the Horse: What Cyberlaw Might Teach. Available at: <u>https://cyber.harvard.edu/works/lessig/LNC\_Q\_D2.PDF</u>

<sup>&</sup>lt;sup>41</sup> Available at https://en.wikipedia.org/wiki/Pathetic\_dot\_theory

<sup>&</sup>lt;sup>42</sup> LESSIG, Lawrence. The Law of the Horse: What Cyberlaw Might Teach. Available at: <u>https://cyber.harvard.edu/works/lessig/LNC\_Q\_D2.PDF</u>

*reinforce these existing values, or to allow the change to occur*<sup>, 43</sup>. In an automated world, governed by algorithmic rules and decisions made by machines, facing the tension between laws and architecture becomes paramount.

Because of the importance of Lessig's theory and its atemporality, we decided to frame this study as a reinterpretation of his original theory and as an homage. Moreover, this four-dimensional analysis covers all relevant aspects of the Human-Machine collaboration in Al-generated creations.

#### 4.1. Law

The central points in the analysis of AI-generated products, when considering copyright legal regulation, focus on two specific moments: the input into the AI tool (the use of copyrighted works to train AI models) and the output (the legal status of an AI generated work).

(a) The input - the use of copyrighted works to train AI models

At the input stage, the question is: can we use copyrighted works to train Al tools? To answer this question, we need to examine the copyright regulatory tradition of a given country, whether it aligns with the Copyright tradition (as in England, the United States, and Australia) or the Author's Right tradition (as in European and Latin American countries, for example). It is based on this division and how each historical tradition addresses the protection of others' works that we can answer the first question.

In the United States, due to its Copyright tradition, the concept of *fair use* applies. This means there are broad and flexible criteria that must be interpreted to determine whether a particular use of a work can be made without constituting copyright infringement. However, as previously seen, some lawsuits are discussing this very aspect. It is quite possible that countries with a Copyright tradition will interpret AI training as falling under *fair use*. Without passing

<sup>&</sup>lt;sup>43</sup> LESSIG, Lawrence. The Law of the Horse: What Cyberlaw Might Teach. Available at: <u>https://cyber.harvard.edu/works/lessig/LNC\_Q\_D2.PDF</u>

judgment on the consequences of such a decision, this would certainly place these countries ahead (in terms of AI training) of those with an Author's Right tradition, which generally adheres to stricter limitations on copyright.

In relation to European Union, its copyright law grants rights holders the exclusive right to allow or prohibit the reproduction of their works under the Copyright Directive 2001/29. Databases may also receive protection under the Database Directive 96/9/EC if they exhibit originality or involve substantial investment.

However, the Text and Data Mining (TDM) exception in the Directive (EU) 2019/790 provides a potential pathway for legally using copyrighted material for AI training, as pointed out by Séverine Dusollier<sup>44</sup>:

Text and data mining (TDM) consists of automatized and electronic analysis of large amounts of data in order to extract information and patterns that cannot be processed or detected by human reading. Such data processing and knowledge management tools are now pervasive in many fields, from scientific research, pharmaceutical and medical domains, to journalism, information search and processing, so as to satisfy requests of consumer and internet users. Artificial intelligence, based on machine-learning, is also deeply reliant on data mining and analysing.

(...)

(iii) Article 4 (...) allows for text and data mining of lawfully accessible works and other subject matter for any undefined purpose, regardless of its possible commercial or for-profit motive. This could benefit text and data mining for commercial research, investigative journalism, consumer information provision, statistical analysis, or any process of artificial intelligence.

<sup>&</sup>lt;sup>44</sup> Dusollier, S. (2020). The 2019 Directive on Copyright in the Digital Single Market: Some progress, a few bad choices, and an overall failed ambition. *Common Market Law Review, 57*(4), 979–1030.

#### The same conclusion is reached by Florence G'sell, when she affirms that<sup>45</sup>:

Article 4(1) of the New Copyright Directive permits the "reproductions and extractions of lawfully accessible works and other subject matter for text and data mining purposes." The provision thus permits TDM for all imaginable purposes. Until now, there was a general consensus that the Text and Data Mining (TDM) exception covers the use of copyrighted works for training AI models. (...)

Article 4(2) of the Directive states that the reproductions and extractions of content made under Article 4(1) may be retained "for as long as is necessary for the purposes of text and data mining." This seems to imply that copyrighted content used during training should be deleted immediately after training. To avoid such a problematic consequence, some scholars promote "a broad normative interpretation of 'text and data mining,' encompassing not only the training activity in the strict sense but also the validation and testing" of the model.

The AI Act does not bring any new explicit regulatory rules concerning copyright, However, the topic is mentioned in Recitals 105-109 and in article 53 (1,c), that states that "Providers of general-purpose AI models shall: (...) (*c*) put in place a policy to comply with Union law on copyright and related rights, and in particular to identify and comply with, including through state-of-the-art technologies, a reservation of rights expressed pursuant to Article 4(3) of Directive (EU) 2019/790; (...)"

#### (b) The output - the legal status of an AI generated work

Regarding outputs, the situation is more uncertain. Would the rights belong to the person who created the prompt? Would there be any sharing with the tool

<sup>&</sup>lt;sup>45</sup> G'sell, Florence, An Overview of the European Union Framework Governing Generative Al Models and Systems (May 20, 2024). Available at SSRN: <u>https://ssrn.com/abstract=4762804</u> or <u>http://dx.doi.org/10.2139/ssrn.4762804</u>

developer? Would the product be considered in the public domain? Would content management software need to be developed? Practical (non-legislative) suggestions are already being discussed<sup>46</sup>.

Lawrence Lessig argues that under some circumstances it would be possible to attribute authorship to the person who defined and introduced the commands (prompts) for the system to create the desired work<sup>47</sup>.

However, the many possibilities of regulation lie in a sea of uncertainties. In 2022, graphic artist Jason M. Allen won an art competition in Colorado with an image titled "Théâtre D'Opéra Spatial".

<sup>&</sup>lt;sup>46</sup> For example, here: <u>https://arxiv.org/abs/2406.11857</u>

<sup>&</sup>lt;sup>47</sup> Available at <u>https://lessig.medium.com/for-ai-copyright-for-ai-artists-ca6221932811</u> and at https://www.theverge.com/23929233/lawrence-lessig-free-speech-first-amendment-ai-contentmoderation-decoder-interview, where Lessig states in an interview: "I have two strong views, and one is very surprising. The not surprising view I have is that, whether you call it fair use or not, using creative work to learn something, whether you're a machine or not, should not be a copyright event. Now, maybe we should regulate in another way. Maybe we should have a compulsory license-like structure or some structure for compensation. I'm all for that, but the idea that we try to regulate AI through copyright law is crazy talk." And also: "And, "Now, the tweak I would make, which I think is really critical, is I would say you get a copyright with these AI systems if and only if the AI system itself registers the work and includes in the registration provenance so that I know exactly who created it and when, and it's registered so it's easy for me to identify it because the biggest hole in copyright law, a so-called property system, is that it's the most inefficient property system known to man. We have no way to know who owns what. We have no way to know with whom to negotiate. Certain entities love that, like the collecting rights societies. They love the fact that it's impossible to know because then you've got to have these huge collective rights societies. The reality is we could have a much more efficient system for identifying "ownership," and I think AI could help us to get there. I would say let's have a system where you get a copyright immediately and — (...) Here's how it was made, when it was made and what fed into it." Whatever the provenance has to be to make it useful, I'm not sure of that exactly, but if you began to do that, you would begin to build an infrastructure of registries that would make it easier for us to begin to navigate in this context. The other reason to push for this is that artists in the next 10 years are going to increasingly move to AI generation for their art. If you don't get copyright from that, then basically, these people have almost no way to make any living."



Figure 4: Théâtre D'Opéra Spatial<sup>48</sup>

The artist attributed the authorship of the work to a partnership with Midjourney<sup>49</sup>. Moreover, the category in which the work was entered was "digital art/digitally manipulated photography." His victory generated discontent, with people saying "I can see how A.I. art can be beneficial, but claiming you're an artist by generating one? Absolutely not". Allen tried to register the work at the United States Copyright Office, but the response was negative<sup>50</sup>.

Therefore, it is essential to make a distinction regarding the use of generative AI. Is it a lazy (passive) use, substituting human efforts, or a technical, instrumental, intermediary (active) use, which highlights creativity, originality, and the aesthetic elements of creation? When you see the work "Théâtre D'Opéra Spatial", do you think you would be able to reproduce it, even using generative AI? According to

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https://fr.wikip	bedia.org/w	<u>/iki/Th%C3%A9%C</u>	C3%A2tre	d%27op%C3%A9ra	a spatial#/media/Fichier		
:Th%C3%A9%C3%A2tre D%E2%80%99op%C3%A9ra Spatial.jpg							
49 Availabl	e at	https://www.nytime	es.com/20	22/09/02/technology	/ai-artificial-intelligence-		
artists.html							
50	Available	at	ht	tps://news.artnet.com	m/news/ai-art-copyright-		
2367590#:~:t	text=artists	%20claiming%20c	opyright%	20for%20their%20c	reations.&text=Jason%		
20Allen%20T	<u>h%C3%A9</u>	<u>9%C3%A2tre%20E</u>	)'op%C3%	A9ra,not%20eligible	20for%20copyright%		
20protection.							

the author, what he did went beyond just giving a command and pressing a button. It took about 600 prompts to arrive at the final result. The definition of these prompts would be the new creative element in the artistic process.

For several years now, scholars dedicated to the study of the relationship between copyright and AI have warned that works created entirely by AI should be in the public domain (i.e., there would be no economic protection for them)<sup>51</sup> due to the absence of one of the central elements for conferring copyright on a work: the existence of human authorship<sup>52</sup>. This theory agrees with the US Copyright Office (USCO), that has denied the registration of generative AI artwork at least four times<sup>53</sup>. As stated in the "Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence," published in 2023 by the USCO, "it is well-established that copyright can protect only material that is the product of human creativity"<sup>54</sup>.

<sup>&</sup>lt;sup>51</sup> Some authors have dedicated to the analysis of such matter: Guadamuz, Andres, *Do Androids Dream of Electric Copyright? Comparative Analysis of Originality in Artificial Intelligence Generated Works* (June 5, 2020). Intellectual Property Quarterly, 2017 (2), Available at SSRN: <u>https://ssrn.com/abstract=2981304</u>; Craig, Carys J. and Kerr, Ian R., *The Death of the AI Author* (March 25, 2019). Osgoode Legal Studies Research Paper (March 25, 2019), (2021) 52(1) Ottawa Law Review 31 (https://rdo-olr.org/2021/the-death-of-the-ai-author/).

<sup>&</sup>lt;sup>52</sup> For example: Ramalho, Ana, Will Robots Rule the (Artistic) World? A Proposed Model for the Legal Status of Creations by Artificial Intelligence Systems (June 13, 2017). Available at SSRN: <u>https://ssrn.com/abstract=2987757</u>

 <sup>&</sup>lt;sup>53</sup> Available at <u>https://ipwatchdog.com/2023/12/12/copyright-office-affirms-fourth-refusal-register-generative-ai-work/id=170564/</u>
 <sup>54</sup> Available at <u>https://copyright.gov/ai/ai\_policy\_guidance.pdf</u> "*If a work's traditional elements of*

authorship were produced by a machine, the work lacks human authorship and the Office will not register it For example, when an AI technology receives solely a prompt from a human and produces complex written, visual, or musical works in response, the "traditional elements of authorship" are determined and executed by the technology-not the human user. Based on the Office's understanding of the generative AI technologies currently available, users do not exercise ultimate creative control over how such systems interpret prompts and generate material. Instead, these prompts function more like instructions to a commissioned artist-they identify what the prompter wishes to have depicted, but the machine determines how those instructions are implemented in its output. For example, if a user instructs a text-generating technology to "write a poem about copyright law in the style of William Shakespeare," she can expect the system to generate text that is recognizable as a poem, mentions copyright, and resembles Shakespeare's style. But the technology will decide the rhyming pattern, the words in each line, and the structure of the text. When an AI technology determines the expressive elements of its output, the generated material is not the product of human authorship. As a result, that material is not protected by copyright and must be disclaimed in a registration application. In other cases, however, a work containing AI-generated material will also contain sufficient human authorship to support a copyright claim. For example, a human may select or arrange Al-generated material in a sufficiently creative way that "the resulting work as a whole constitutes an original work of authorship." Or an artist may modify material originally generated by AI technology to such a degree that the modifications meet the standard for copyright protection. In these cases, copyright will only protect the human-authored aspects of the work, which are "independent of" and do "not affect" the copyright status of the AI-generated material itself".

However, wouldn't 600 prompts be enough to characterize the use of the tool as a creative instrument *by a human*? Wouldn't Lawrence Lessig be right in stating that active (and not passive) use of the tool would suffice to confer copyright on the work to whoever uses it?

In Europe, the legislation "does not explicitly state that the 'author' must be human. For a work to be eligible for protection, it must be original —that is, it must constitute the author's intellectual creation"<sup>55</sup>. Copyright theory in Europe is more connected to the author's personality rights. "This seems to imply that such input must be from a human. Certainly, it is possible to produce copyright-protected works with the assistance of an AI device. However, even if works can be AI-assisted, they must meet the criteria of originality and creativity through human contribution"<sup>56</sup>.

Legal solutions will depend on each country and how their legislation deals with the use of copyrighted material as source of training AI systems (if it can be considered fair use or not) and whether the output can be protected. This is essential to understand, for example, when determining whether Vicente Pessôa and Rie Kudan, who were mentioned in the introduction of this paper, can be considered the sole authors of the works they sign. Nevertheless, being legally considered authors would be insufficient if social (not legal) aspects are taken into consideration.

Over time, it has become evident that although the questions regarding input and output are relevant, their answers address the micromanagement of intellectual creations. With millions of products being created every day, it is essential to also focus on the global system instead of dwelling solely on specific moments. Otherwise, it would be akin to trying to regulate the internet by attempting to control each fake news shared on a social network. These must be considered, but regulation cannot be so granular that it loses sight of the primary objective:

 <sup>&</sup>lt;sup>55</sup> G'sell, Florence, An Overview of the European Union Framework Governing Generative AI Models and Systems (March 17, 2024). Available at SSRN: <u>https://ssrn.com/abstract=</u>
 <sup>56</sup> Ibid.

making the system work. This is why it is essential to look at other regulatory forces.

#### 4.2. Social norms

We can try to divide the use of generative AI into two types. The first concerns the use of technology as a tool. The logic is the same as that used for the typewriter, the computer, even software that helps the user improve their work quality, such as spell checkers, grammar checkers, and translators. The creativity lies in the human who operates the machine. The instrumental function of AI is a resource that will add speed and quality to the result. We must always remember that, as a rule, the recipient of a work of art is not its author, but someone else. For daily activities, like writing or reviewing a recommendation letter or translating an e-mail, if an AI tool helps to produce a better-written, clearer, and more accessible text, there seems to be no reason to ban or restrict its use. Especially since it will aid communication between the author and the recipient of the message. Moreover, efforts in this direction seem futile as generative AI systems will increasingly become present in our daily lives.

On the other hand, the use of generative AI as a substitute for creative work can be a problem. A student who uses ChatGPT to improve and revise their essay doesn't seem to be doing anything different from using text, grammar, and translation correctors. Only the scale is different. However, a student who inputs a prompt for ChatGPT to do their work and considers the task completed certainly deserves some type of sanction. Artists will need to worry about the inadvertent use of voice and image, and perhaps union agreements will be necessary to impose a ban on contractual clauses that allow the outright substitution of artists by generative AI systems.

In summary, the use of generative AI as a collaborative tool needs to be treated differently from the use of generative AI as a replacement for human work, both in terms of copyrights and ethical aspects.

In a pre-internet era, it might have been relevant for a jurist to know sections of the law by heart. After all, it was not guaranteed that they would have the law at hand, at any moment, to find the necessary answer to a particular question. Thus, it might have made sense for law courses to demand more objective knowledge that involved the memorization of norms and concepts.

In today's world, a test that asked what the law says would be counterproductive. What's far more important is knowing how to interpret or extract original ideas from the text of the law – this, yes, because information is abundantly available on the internet.

Similarly, in recent years it has become inadvisable to demand that university students present merely informative or descriptive research. With all the information available on the internet, such content is easy to find and copy without much effort. Therefore, tasks needed to be directed much more towards the interpretation and analysis of data and facts, than in the search for data and facts themselves.

Therefore, if we recently moved from presenting information to its analysis and interpretation, we now take another leap that is even more challenging. We are moving from analysis and interpretation (which generative AI tools have done quite well) to the creative and even unexpected use of these tools, to improve human work and access by those to whom they are intended.

We also remember that generative AI has done what is conventionally called "hallucination" <sup>57</sup>, i.e., the inclusion of fictitious and false information when something merely factual was expected. This has already led to situations where lawyers and judges have been caught in the lazy use of ChatGPT by including

<sup>&</sup>lt;sup>57</sup> See <u>https://www.ibm.com/topics/ai-hallucinations</u>. "AI hallucination is a phenomenon wherein a large language model (LLM)—often a generative AI <u>chatbot</u> or <u>computer vision</u> tool—perceives patterns or objects that are nonexistent or imperceptible to human observers, creating outputs that are nonsensical or altogether inaccurate."

judicial decisions in their texts that never occurred but were invented by generative AI<sup>58</sup>.

Therefore, what is necessary (and this will certainly take time) is to understand what the advantages, or risks, are of using generative AI tools in all fields of knowledge and direct our efforts as a society so that their use is ethical, responsible, and as useful as possible.

Some of the most important and respected universities in the world, like Harvard<sup>59</sup>, Stanford<sup>60</sup> and SciencesPo<sup>61</sup>, are facing this challenge by publishing guidelines on how to use ChatGPT (and similar tools) in an ethical way.

But is it necessary to disclose the use of AI tools in all cases, purely for compliance? It appears that disclosure becomes pertinent when authorship is crucial, such as in the creation of articles, papers, essays, or final exams, where understanding the extent of AI tool involvement is important. However, in contexts where communication's accuracy takes precedence over authorship, like in business emails or when improving a self-written text for further human review, the disclosure of AI tool usage might be considered unnecessary.

#### 4.3. Market

Numerous professionals, especially in the US, have been taking legal action in response to companies using their original works without a license to train AI systems algorithms. They claim that "defendants are using copies of the training images (...) to generate digital images and other output that are derived exclusively from the Training Images, and that add nothing new." Consequently,

<sup>&</sup>lt;sup>58</sup> Available at <u>https://g1.globo.com/tecnologia/noticia/2023/05/29/advogado-usa-casos-inventados-pelo-chatgpt-em-processo-judicial-e-leva-puxao-de-orelha-de-juiz.ghtml</u> and at <u>https://g1.globo.com/politica/blog/daniela-lima/post/2023/11/13/juiz-usa-inteligencia-artificial-para-fazer-decisao-e-cita-jurisprudencia-falsa-cnj-investiga-caso.ghtml</u>

<sup>&</sup>lt;sup>59</sup> See https://provost.harvard.edu/guidelines-using-chatgpt-and-other-generative-ai-toolsharvard

<sup>&</sup>lt;sup>60</sup> See https://communitystandards.stanford.edu/generative-ai-policy-guidance

<sup>&</sup>lt;sup>61</sup> See https://www.sciencespo.fr/en/news/sciences-po-implements-strict-rules-about-the-use-of-chatgpt-by-students/

such images would "substantially negatively impact the market for the work of plaintiffs and the class" <sup>62</sup>.

There is a real concern from artists that may face real competition from AI tools. It will certainly be easier and less expensive to use an AI model to replace the workforce of voice actors and extras.

One possibility that has been discussed is the creation of personalized AI systems<sup>63</sup> that would allow the use of works protected by copyright in the creation of derivative works. Thus, for example, singers could have their own AI, allowing their fans to use, within the limits permitted by them, their songs, image, and voice, in the creation of new works. These works could circulate digitally and collect royalties, to be distributed in agreed-upon portions, to both the fan who created a new work and the singer/composer, for licensing the original works.

This strategy could address a possible solution for the "Heart on my Sleeve" song, which was published in April 2023 with the voices of Drake and The Weekend, but fully created by Al<sup>64</sup>.

<sup>&</sup>lt;sup>62</sup> Available at https://news.artnet.com/art-world/class-action-lawsuit-ai-generators-deviantart-midjourney-stable-diffusion-2246770

<sup>&</sup>lt;sup>63</sup> Raive (https://raive.com/) is a company developing such projects. "Raive is a Foundation AI company for people to create, exchange, and access information like never before. We are building the future infrastructure of the information economy, where AI is both a new medium of expression, and a new asset class with clear IP rights and AI royalties. Our multimedia foundation AI models are pushing the frontier of image and video generation, enabling large-scale personalization, composition, and attribution, so that everyone can create, own, and distribute their personalized AI models." Available at <u>https://www.linkedin.com/company/raive/</u>.

<sup>&</sup>lt;sup>64</sup> Available at <u>https://www.nytimes.com/2023/04/19/arts/music/ai-drake-the-weeknd-fake.html</u>. "For Drake and the Weeknd, two of the most popular musicians on the planet, the existence of "Heart on My Sleeve," a track that claimed to use A.I. versions of their voices to create a passable mimicry, may have qualified as a minor nuisance — a short-lived novelty that was easily stamped out by their powerful record company. But for others in the industry, the song — which became <u>a</u> <u>viral curio on social media</u>, racking up millions of plays across TikTok, Spotify, YouTube and more before it was removed this week — represented something more serious: a harbinger of the headaches that can occur when a new technology crosses over into the mainstream consciousness of creators and consumers before the necessary rules are in place."

The question of "how to compensate artists" could be addressed by answering "who owns this?" Instead of focusing on ownership of previous content (and pay-to-train solution), the focus would be on the ownership of the output<sup>65</sup>.

A possible solution would be that artists own the software (the AI models) as a new format of creative expression, and automatically all the outputs from the software would also be owned by the artist. In other words, if Drake wants to own the AI generated Drake song, a possibility would be that Drake should own the AI model itself.<sup>66</sup>

The question then is how do artists own the AI software? The natural answer is that AI publishers share ownership. "*This is in the direct continuity with the past, where each new format for creative expression (medium) has seen the emergence of the creative and the editor/publisher working hand-in-hand and sharing the ownership of the creative work. Just as we had writer/press-publisher, music-artist/record-label, movie-star/film-producer, we could soon have creative/AI publisher. Essentially, software (AI in particular) is a new means of creative expression for artists".<sup>67</sup>* 

Therefore, "*by training AI models with AI publishers, artists and IP holders could enter a contractual licensing framework with their AI publisher (who owns the AI), to share the revenues and collect royalties from all the AI generated works with the licensed AI*" <sup>68</sup>. Two AI royalty models would appear: pay-to-play (private use) or pay-to-own (commercial rights to be shared among the original IP holders of the "licensed AI", the AI publishers, and the user/prompter).<sup>69</sup>

Considering that the remuneration of authors (a topic in the convergence of law and market) is a key issue in the regulation of copyright before AI tools, some

66 Ibid.

67 Ibid.

68 Ibid.

<sup>&</sup>lt;sup>65</sup> BALCHA, Hanna; BOTTINO, Celina; BRANCO, Sérgio; DUCRU, Pablo; GARNER, Clay; HE, George; LEMOS, Ronaldo; RAIMAN, Jonathan; SOUTO, Gabriel. Al Royalties - An IP Framework to Compensate Artists & IP Holders for Al-Generated Content. Unpublished.

<sup>69</sup> Ibid.

countries have being trying to find solutions to this challenge. The United Kingdon is currently conducting a public consultation<sup>70</sup> and so did Canada<sup>71</sup>.

Brazil is discussing PL 2.338/23<sup>72</sup>, that was approved at the end of 2024 at the Senate and now has to be discussed in the Chamber of Deputies.

The central point of the bill concerning copyright is the right to remuneration established in Article 65. This remuneration provision seems to parallel collective management rules. For instance, the public performance of music requires payment to rights holders. Similarly, here, the use of works would be permitted in processes of mining, training, or development of AI systems, but such use would require payment. However, some questions remain:

- Remuneration would be owed to rights holders, not necessarily protecting authors directly. While technically correct, this solution does not directly safeguard the creative contributors of the equation.
- What will be the basis for calculating remuneration?
- How can the opt-out right (i.e., the right to prohibit the use of their content in AI system development outside the exceptions provided for in Article 63) be guaranteed?

<sup>&</sup>lt;sup>70</sup> Available at <u>https://www.gov.uk/government/consultations/copyright-and-artificial-intelligence/copyright-and-artificial-intelligence</u>

<sup>&</sup>lt;sup>71</sup> Available at https://ised-isde.canada.ca/site/strategic-policy-sector/en/marketplace-framework-policy/consultation-paper-consultation-copyright-age-generative-artificial-intelligence

<sup>72</sup> Available at https://www25.senado.leg.br/web/atividade/materias/-/materia/157233. According to the bill, in the version approved by the Senate, there is a right to use works protected by copyright for training, provided certain conditions are met. The holder of copyright and related rights may prohibit the use of their content in the development of AI systems (Article 64), as long as it does not fall under the exceptions outlined in Article 63. This article allows text and data mining processes for research and development purposes of AI systems by scientific and research organizations, museums, public archives, libraries, and educational institutions, provided certain conditions are observed.

- How can individual negotiations, as provided for in the article, be feasible given the massive number of works to be used in training AI tools?
- With databases containing thousands, millions, or billions of works, what is the real possibility of remunerating the use of each work? Would the amount distributed not end up being negligible, especially since copyright holders might also have to share this amount with authors and holders of related rights?

It is evident that this topic requires further in-depth analysis. The debate in the Chamber of Deputies must carefully and creatively address these issues to ensure that the solutions proposed by the bill, if approved, are practically viable.

#### 4.4. Architecture

As Lawrence Lessig famously said (to the point it became a classic cliché), "Code is law"<sup>73</sup>. It means that in digital systems, software and algorithms determine what is possible or not. For many years now, technological measures have been used to shape behavior online. For example, Digital Rights Management (DRM)<sup>74</sup> and Technical Protection Measures (TPM)<sup>75</sup> are architectural solutions aimed at managing or controlling access to copyrighted content.

Considering that copyright holders should previously allow copyrighted content to be used in the training of AI systems, architectural constraints relate to mechanisms that monitor and restrict the use of copyrighted materials for training datasets when authorization was not granted. For example, platforms can make use of metadata filters or web crawlers able to read and respect copyright opt-outs determined by content

<sup>&</sup>lt;sup>7373</sup> Lessig, Lawrence. Code and Other Laws of Cyberspace. Basic Books: New York, 1999. Available at <a href="https://lessig.org/product/code/">https://lessig.org/product/code/</a>

<sup>&</sup>lt;sup>74</sup> the way that a <u>company controls</u> how <u>users pay</u> for <u>music</u>, <u>films</u>, <u>books</u>, etc. that are <u>available</u> on the <u>internet</u> or <u>on electronic equipment</u> in <u>a digital form</u>. Available at <u>https://dictionary.cambridge.org/dictionary/english/digital-rights-management</u>

<sup>&</sup>lt;sup>75</sup> TPMs can protect copyright works through encryption on DVDs, for example. They can have a key role in enabling copyright owners (rightsholders) to offer content to consumers in different ways and protect against unlawful copying (piracy). Available at <u>https://www.gov.uk/government/publications/technological-protection-measures-tpms-complaintsprocess/guidance-on-the-technological-protection-measures-tpms-complaints-process</u>

owners. In such a case, the architecture of a given digital system serves as a balance between accessibility and copyright protection and as an agent of copyright regulation.

Another example is the promotion of transparency and accountability in the use of copyrighted materials. Some companies offer watermarks and traceability technologies to identify the original sources used in generative AI tools<sup>76</sup>. In 2023, the European Parliament published a report on the advantages of using watermarks, stating that<sup>77</sup>:

Traceability of generative AI is a key to ensuring a trustworthy environment and identifying the provenance of the data used in the production of an AI model. AI companies are engaged in finding ways to differentiate humangenerated and AI-generated content. The effectiveness of some approaches developed by the industry to trace AI-generated content –such as labelling – has been called into question. Open AI had to withdraw from the market a classifier it had trained to distinguish between human and AI-generated text written because of its low rate of accuracy. Against this backdrop, AI watermarks techniques can serve to establish content authenticity and to perform content authentication. The techniques can also be used in the media sector for data monitoring – automatic registering and monitoring of broadcast radio programmes to ensure that royalties are paid to the rightsholders of the broadcast data.

When one of the main concerns regarding AI and copyright is the fair remuneration of creators, only with architectural solutions will it be possible to verify which works were used in the training of datasets and which works were used in any given output. Approaches designed to satisfy the market and (when applicable) laws necessarily have to take into account technological advancements and their practical implications. These features can help mechanisms like the remuneration frameworks discussed above, where usage-based payments are connected to transparent tracking of copyrighted material.

However, some challenges may arise when such systems become too restrictive or opaque. Users and creators may complain about the lack of transparency, leading to disputes about fairness and accessibility. In some of the cases aforementioned, such as the ones related to The New York Times and the Authors Guild, the claim is that copyrighted work was used and even generated outputs similar to the original material. However, the claim seems to be not very easy to prove. Thus, for the architecture to be effective there must be a balance with openness transparency and accountability

#### Conclusion

The integration of AI into creative processes challenges traditional notions of authorship and copyright. Although the concept of coauthorship with AI is

Available

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<sup>&</sup>lt;sup>76</sup> Available at <u>https://deepmind.google/technologies/synthid/</u>

https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/757583/EPRS\_BRI(2023)757583\_EN.pdf

metaphorical, indicating a collaborative rather than literal partnership between humans and technology in creative endeavors, it will be inevitable. The regulation of this joint creation will need to be approached from different perspectives.

Recently, Europe has drafted and adopted regulatory framework for AI, the AI Act. However, since laws often aim to regulate technological advancements after they have emerged, regulatory frameworks currently tend to lag behind, leading to gaps in how AI-generated content is recognized and managed legally.

Since the public advent of ChatGPT, in late 2022, generative AI's capabilities to produce new content have shown both opportunities and challenges across various sectors.

The debate around AI in creativity underscores a broader societal negotiation on the value and recognition of human versus machine-generated art and content and could be addressed according to the following perspectives:

**Legal norms**: Legal norms encompass a broad range of questions, not limited to copyright uncertainties. The passing of the European AI Act will likely have a significant influence on how AI will be regulated across the globe. However, for the purpose of this paper, it is important to mention that the current global legal system is uncertain on how to handle the subtilities of AI-generated content where copyright is concerned. The legal challenges related to AI-generated content may be divided into three: the input (if works can be used to train AI systems), the output (to whom belong the created works) and the development of a remuneration system for creators (that is also relevant when we talk about the market).

Considering many AI companies operate in several countries and, therefore, the global consequences of AI training, there is no world-wide consensus on whether copyrighted material can be used to train AI tools or who owns the creations derived from such systems. There's also a dilemma in distinguishing between passive and active uses of AI, which impacts copyright attribution and the recognition of authorship.

The ideal scenario would be the development of an international legal framework to prioritize harmonization and clarity regarding the use of copyrighted material in AI training and the rules related to ownership of AI-generated works. Global standards, such as an international agreement before the World Intellectual Property Organization (WIPO), could help solve international disputes and provide consistent guidance for AI companies and authors.

<u>Social Norms and Ethics</u>: Ethical concerns arise regarding the displacement of human artists and the potential for AI to undermine traditional creative roles. The backlash from the artistic community demonstrates the need for a balanced approach that respects human creativity and technological innovation. Social norms are still evolving in response to AI's integration into creative processes, with a need for clear guidelines on the ethical use of AI. To what extent should the use of AI tools be disclosed? And under what circumstances? Should we differentiate situations in which authorship or communication is the main aim? How should we regulate the use of AI tools in schools and universities? It seems transparency if the fundamental concept to be observed, but to what degree?

To address social concerns, it is fundamental to create clear ethical guidelines for the use of AI-generated content, prioritizing transparency in its creation and application. Whenever the idea of authorship is relevant, AI creations should be explicitly mentioned to make sure proper attribution and distinguish them from human creations. Such standards can vary depending on the context, demanding stricter requirements in areas such as education, research, or legal communication. Moreover, a framework for ethical usage in schools, universities, creative industries and companies should involve consultation within their communities, in order to ensure a balanced approach that may encompass innovation and respect for human creativity.

<u>Market Dynamics</u>: Market reactions to AI in creative industries reflect concerns over copyright infringement, economic displacement, and the authenticity of AIgenerated works. The creation of personalized AI systems could allow for new models of content creation and copyright ownership, potentially revolutionizing how creators engage with and benefit from AI technologies, enabling them to retain control over the possible use of their creations. it is crucial to establish mechanisms that guarantee creators receive appropriate compensation for the use of their works in training datasets and in Al-generated outputs. Many are the initiatives that aim to propose fair remuneration for authors in the face of market changes connected to Al tools. One possibility would be the remuneration, from Al developers, to use copyrighted materials during training. Another possibility is payment of royalties for creators whose works significantly influence Al-generated outputs.

#### Architectural Considerations:

Architectural mechanisms not only promote transparency and accountability but also enable the traceability of content generated by AI, which may be relevant to control legal aspects of a dataset and also to a fair remuneration for creators. However, when we face a too restrictive or opaque systems, this can prevent or compromise accessibility and lead to disputes, harming the need for balance between protection and openness in the design of architectural solutions.

#### **Recommendations:**

Architectural solutions may be of extreme relevance when we look for effectiveness and fairness in copyright relations connected to Al-generated works. They allow the use of mechanisms for transparency and traceability, such as watermarking and metadata control. Platforms should implement clear opt-in and opt-out options for copyright owners, allowing an easy way to control the use of their copyrighted materials. Architectural frameworks must prioritize transparence and accountability, promoting trust among stakeholders at the same time that may avoid too restrictive measures that harm innovation. Finally, online dispute resolution mechanisms should be incorporated to address potential conflicts and reinforce the credibility of these systems, considering Courts are overwhelmed and alternative dispute should be incentivized.

Facing the challenges posed by AI in the creation of intellectual goods requires collaboration across disciplines - including legal experts, ethicists, technologists, and artists - to propose comprehensive solutions and foster innovative policy-making.

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