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Elaborating a Human Rights friendly Copyright Framework for Generative AI

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ELABORATING A HUMAN RIGHTS FRIENDLY COPYRIGHT FRAMEWORK FOR GENERATIVE AI

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ABSTRACT

This paper analyses the copyright issues related to so-called "generative AI" systems and reviews the arguments currently advanced to change the copyright regime for AI-generated works from a human rights perspective. It argues that because of the applicable human rights framework for copyright but also the anthropocentric approach of human rights the protection of creators and human creativity must be considered the point of reference when assessing future reforms with regard to copyright and generative AI systems. Consequently, the copyrightability of AI-generated outputs should be considered with utmost care and only when AI is used as a technical tool for creators in their creation process- meaning when they serve a human author. A human rights analysis reinforces that copyright should be a tool to protect creativity and creators, not a legal mechanism to secure the amortization of economic investments in AI technology.

With regard to the input, the right to train generative AI systems via machine learning technology can be derived from the right to science and culture and freedom of (artistic) expression as AI can lead to useful advancements in science and arts; moreover, it is important for human creators to be able to use outputs produced by generative AI in their creative process. At the same time, it follows from the right to the protection of moral and material interests of the creator that authors must be adequately

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remunerated for the commercial use of their works unless there is a strong justification legitimizing the use. For this reason, it is proposed that the machine learning process using copyright-protected works to train the AI gives rise to a limitation-based remuneration right to the benefit of human creators. The paper also briefly explores if and when the moral interest of creators deriving from human rights protection could justify that they oppose the use of their work for training purposes of AI systems.

The paper concludes that a human rights analysis secures an ethical approach to copyright issues of generative AI so that these systems serve creators and creativity, and not the other way around.

INTRODUCTION

"Do you believe in the human heart? I don't mean simply the organ, obviously. I'm speaking in the poetic sense. The human heart. Do you think there is such a thing? Something that makes each of us special and individual?" This is a question put to Klara, the narrator of Kazuo Ishiguro's novel Klara and the Sun, who is an "artificial friend"—an artificial intelligence (AI)-operated android- that, in a not-too-distant future imagined by the Nobel Prize winner for literature, is meant to replace companions for children[2]. This philosophical question also lies at the heart of the question of the protectability by copyright of AI-generated outputs by generative AI systems: is there something in the human creative process that makes it unique and different from any output generated by a machine? As more and more works are produced by machines using AI, with a result often difficult to distinguish from that of a human creator, the question whether the

[2] Kazuo Ishiguro, "Klara and the Sun", Faber and Faber, 2021.

creative input of the author- this moment of creative genius generated by the human mind, guided by intuition and inspiration- should be the generator of copyright protection has become central. It requires the identification and definition of what is an act of creativity[3], but also poses more fundamental questions on what the copyright system should achieve. Does the copyright system protect authors -human authors- and remunerates them as a counterpart for their contribution to collective cultural enrichment generated by their creations, or is copyright intended as incentive to invest in the process of cultural production, no matter how the work has been generated?[4]

The issue is far from purely theoretical. It was at the root of a now famous dispute in the United States between Dr. Stephen Thaler[5] and the U.S. Copyright Office, with which he wanted to register a work entitled "A Recent Entrance to Paradise" produced independently by an AI called "DABUS" of which he is the owner, user and designer. Having had his application rejected by the Copyright Office for the first time in 2019, he filed a petition for reconsideration of his application with the same Office[6]. In its decision of February 14, 2022, the Office upheld the refusal to register

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[3] For a reflection on this issue, *see* e.g. C. Craig and I. Kerr, "The Death of the AI Author", Ottawa L. Rev. 2020, Vol. 52, Issue 1, p. 31. However, some advocates of protecting AI-generated creations through copyright law have pointed out that the notion of creativity has not yet been clearly identified; for example, according to R. Abbott and E. Rothman, it is problematic to consider that only human beings can "create" and thus draw legal consequences from it ("Disrupting Creativity: Copyright Law in the Age of Generative Artificial Intelligence", Florida Law Review (forthcoming), p. 30, available on SSRN: https://ssrn.com/abstract=4185327: "There is no scientific, or even philosophical, consensus on the nature of creativity. Without a clear understanding of creativity and thus what the difference is between what an AI and a human being are doing, it seems problematic to argue that only what people are doing counts as creative - and even more problematic to base laws on that assumption").

[4] We have repeatedly (critically) discussed these rationales and the deplorable trend of IP rights to become investment-protection mechanisms, *see* e.g. C. Geiger, "Copyright as an Access Right, Securing Cultural Participation through the Protection of Creators' Interests", in: R. Giblin and K. G. Weatherall (eds.), "What if we could reimagine copyright?", Australian National University (ANU) Press, 2016, p. 73 (at 74); C. Geiger, "Intellectual Property and Investment Protection: A Misleading Equation", in: V. Fischer, G. Nolte, M. Senftleben and L. Specht-Riemenschneider (eds.), "Gestaltung der Informationsrechtsordnung - Festschrift für Thomas Dreier zum 65. Geburtstag", C.H. Beck, 2022, p. 7. And in the context of investment law, *see* e.g. C. Geiger "Regulatory and policy issues arising from intellectual property and investor-state dispute settlement in the EU: A closer look at the TTIP and CETA", in: C. Geiger (ed.), "Research Handbook on Intellectual Property and Investment Law", Edward Elgar, 2020, p. 505; "Excluding Intellectual Property from Bilateral Trade and Investment Agreements: A Lesson from the Global Health Crisis", in: S. Frankel, M. Chon, G. Dinwoodie, J. Schovsbo and B. Lauriat (eds.), "Improving Intellectual Property: A Global Project", Edward Elgar, 2023, p. 426.

[5] Dr. Thaler has initiated numerous lawsuits also seeking to have an AI recognized as an inventor under patent law. For further references, *see* R. Abbott, "Intellectual Property and artificial intelligence, an introduction", in R. Abbott (ed.), "Research Handbook of Artificial Intelligence and Intellectual Property", Edward Elgar, 2022, p. 18.

[6] On the details of the case, *see* R. Abbott and E. Rothman, "Disrupting Creativity: Copyright Law in the Age of Generative Artificial Intelligence", *supra* note 2 at p. 15.

the work produced by the AI, pointing out that "only a human being can be considered an "author" under U.S. copyright law, this quality being a prerequisite for the protection and registration of the work"[7]. Dr. Thaler challenged that denial and filed a complaint to the Federal District Court[8]. His motion for summary judgment seeking to register a copyright for the AI-generated work was denied on 18 August 2023, the Court confirming "that the Copyright Office acted properly in denying copyright registration for a work created absent any human involvement"[9]. This decision could be the first episode in a long judicial journey, as it is likely that other courts will be seized in several jurisdictions with similar requests aimed at recognizing the authorship of an AI, obviously with the goal of vesting its owner (or the economic actors who designed, developed and/or financed it) with ownership of the said right[10]. Of course, copyright regimes differ on both sides of the Atlantic, but it is worth asking how such a dispute would be resolved in Europe as it is likely that similar questions will soon be taken to court in the EU as well. Moreover, legislators on both sides of the Atlantic are already pressed to extend copyright protection or other legal tools based on exclusivity to AI generated output and it is likely that reform

[7] "Human authorship is a prerequisite to copyright protection in the United States and that the Work therefore cannot be registered", https://www.copyright.gov/rulings-filings/review-board/docs/a-recent-entrance-to-paradise.pdf; similar refusals of registrations for AI generated works have since been issued on the same ground by the US Copyright Office. *See* for example the decision of 21 February 2023, "Zarya of the Dawn", deciding that the text of a graphic novel (as well as the selection, coordination, and arrangement of the novel written and visual elements) could be registered as protected by copyright law, but not the illustrations that were generated by an AI (Midjourney), as "the images are not the product of human authorship" (https://www.copyright.gov/docs/zarya-of-the-dawn.pdf). *See* also the decision by the Review Board of the USCO on 5 September 2023, which confirmed the refusal to register the work generated by Midjourney "Théâtre D'opéra Spatial" (SR No. 1-11743923581) as the result was too much "machine" and not enough "human", despite the applicant having argued to have input at least 624 prompts and reworked the output of Midjourney to reach the final result. For a critical comment, *see* E. Lee, "Prompting Progress: Authorship in the Age of AI", Florida Law Review 2024, Vol. 76 (forthcoming), available on SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4609687, arguing that the US Copyright Office practice excluding AI-generated works from copyright registration is wrong.

[8] DDC 2 June 2022, 1:2022cv01564 – "Thaler v. Perlmutter et al."

[9] United States District Court for the District of Columbia, 18 August 2023, Civil Action No. 22-1564 (BAH). According to District Court Judge B. A. Howell, "Copyright has never stretched so far, however, as to protect works generated by new forms of technology operating absent any guiding human hand, as plaintiff urges here. Human authorship is a bedrock requirement of copyright". An appeal brief was however filled on Jan. 22, 2024 in the U.S. Court of Appeals for the District of Columbia Circuit (Case No. 23-5233), the claimant arguing that allowing protection for AI-generated works would support the goals of copyright law.

[10] The question of ownership of the right is fascinating but distinct from the question of potential protection. Indeed, before defining who can be the owner of the copyright on this production, it is necessary to establish whether or not a work generated by an AI can in itself benefit from copyright protection. This is the question that was repeatedly put to the U.S. Copyright Office and on which we will focus here.

proposals will be put forward in the near future[11]. When designing this new copyright framework for generative AI, legislators can find guidance in the underlying human rights norms and their arising principles should lead the way[12].

I. THE HUMAN RIGHTS FRAMEWORK FOR COPYRIGHT AND GENERATIVE AI

Human rights are included in international and regional agreements as well as in national constitutions. They bind the legislature as they rank very high in the hierarchy of norms, forming the roots of positive law[13]; thus, human rights have to be considered by lawmakers and judges when conceiving any legal framework applicable to a new technological, social or economic situation. Rooted in ethical principles, fundamental rights offer possibilities for a balanced development of intellectual property law. In fact, the rise of the use of human rights and fundamental rights in shaping and using intellectual property norms has led in the last 20 years or so to a "constitutionalization" of intellectual property law[14], helping to design most

[11] For OECD´s policy consideration on generative AI, *see* P. Lorenz, K. Perset and J. Berryhill, "Initial policy considerations for generative artificial intelligence", OECD Artificial Intelligence Papers, 2023, Issue 1, available at https://doi.org/10.1787/fae2d1e6-en. *See* also the ongoing work of the Commissioner for Human Rights of the Council of Europe in ensuring that human rights are strengthened and not undermined by artificial intelligence in her dialogue with national authorities, national human rights structures and AI actors in general, available at https://www.coe.int/en/web/commissioner/thematic-work/artificial-intelligence, as well as the "Draft Framework Convention on Artificial Intelligence, Human Rights, Democracy and the Rule of Law" of the Committee on Artificial Intelligence of the Council of Europe, Strasbourg, 18 Dec. 2023, available at: https://rm.coe.int/cai-2023-28-draft-framework-convention/1680ade043. And the "Recommendation on the ethics of artificial intelligence" adopted by the General Conference of the United Nations Educational, Scientific and Cultural Organization (UNESCO) in Nov. 2021, which according to its preamble is "a standard-setting instrument developed through a global approach, based on international law, focusing on human dignity and human rights", available at: https://unesdoc.unesco.org/ark:/48223/pf0000380455

[12] On the human rights implications of AI more generally, *see* A. Quintavalla and J. Temperman (eds.), "Artificial Intelligence and Human Rights", OUP (forthcoming).

[13] *See* T. Mylly, "Intellectual Property and Fundamental Rights", in: N. Bruun (ed.), "Intellectual Property beyond Rights", Helsinki, WSOY, 2005, at p. 187 sq., underlining that fundamental rights "provide the basic set of the most fundamental norms and principles to which all areas of law are connected. They thus play a particular role in the pursuit of coherence. Accordingly, private law and fundamental rights should be seen in a dialogical relationship: rather than eliminating choice, autonomy and experimentalism, such a dialogue enables the realisation of certain basic values".

[14] C. Geiger, "Constitutionalizing' Intellectual Property Law? The Influence of Fundamental Rights on Intellectual Property in Europe", IIC 2006, Vol. 37, Issue 4, p. 371; "Fundamental Rights as Common Principles of European (and International) Intellectual Property Law", in: A. Ohly (ed.), "Common Principles of European Intellectual Property Law", Mohr Siebeck, 2012, p. 223; "Reconceptualizing the Constitutional Dimension of Intellectual Property- An Update", in: P. Torremans (ed.), "Intellectual Property and Human Rights", 4th ed., Kluwer Law International, 2020, p. 117; J. Griffiths, "Constitutionalising or Harmonising? The Court of Justice, the Right to Property and European Copyright Law", European Law Review, 2013, p. 65; J. Griffiths, "Taking Power Tools to the Acquis

recent evolutions in the digital environment under the heading of what is increasingly understood as "digital constitutionalism"[15]. Despite perfectible[16], the constitutionalization of IP law has brough major advancements for a balanced conceptualization and application of IP law and still can offer a useful framework for the major future developments in the field, such as for example platform regulation, access to information and research online or artificial intelligence[17]. Moreover, it offers a transparent and workable methodology to mitigate conflicts of rights and secures a perspective on innovation law rooted in the core values of the legal systems[18], a field too often subject of influence from sectorial interests. It is

– The Court of Justice, the Charter of Fundamental Rights and European Union Copyright Law", in: C. Geiger, C.A. Nard and X. Seuba (eds.), "Intellectual Property and the Judiciary", Edward Elgar Publishing, 2018, p. 144; T. Mylly, "The Constitutionalization of the European Legal Order: Impact of Human Rights on Intellectual Property in the EU", in: C. Geiger (ed.), "Research Handbook on Human Rights and Intellectual Property", Edward Elgar Publishing, 2015, p. 103; J. Schovsbo, "Constitutional Foundations and Constitutionalization of IP Law – A Tale of Different Stories?", Zeitschrift für Geistiges Eigentum/Intellectual Property Journal, 2015, Vol. 7, Issue 4, p. 383; C. Geiger and E. Izyumenko, "Shaping Intellectual Property Rights through Human Rights Adjudication : The Example of the European Court of Human Rights", Mitchell Hamline L. Rev. 2020, Vol. 46, p. 527.

[15] On the notion of digital constitutionalism, *see* O. Pollicino, "Judicial Protection of Fundamental Rights on the Internet, A Road towards Digital Constitutionalism?", Bloomsbury Publishing, 2021; G. De Gregorio, "Digital Constitutionalism in Europe, Reframing Rights and Powers in the Algorithmic Society", Cambridge University Press, 2022. Further in the IP context, *see* C. Geiger and B.J. Jütte, "Designing Digital Constitutionalism: Copyright Exceptions and Limitations as a Regulatory Framework for Media Freedom and the Right to Information Online", in: M. Senftleben et al. (eds.), "Cambridge Handbook of Media Law and Policy in Europe", Cambridge University Press, 2024 (forthcoming); "Digital Constitutionalism and Copyright Reform: Securing Access to through Fundamental Rights in the Online World", The Digital Constitutionalist, 24 January 2022, available at http://digi-con.org/digital-constitutionalism-and-copyright-reform-securing-access-through-fundamentalrights- in-the-online-world/; and with a specific link to generative AI, *see* C. Geiger and V. Iaia, "Generative AI, Digital Constitutionalism and Copyright: Towards a Statutory Remuneration Right grounded in Fundamental Rights", The Digital Constitutionalist, 4 October 2023, available at https://digi-con.org/generative-ai-digital-constitutionalism-and-copyright-towards-a-statutory-remuneration-right-grounded-in-fundamental-rights/

[16] C. Geiger and E. Izyumenko, "The Constitutionalization of Intellectual Property law in the EU and the Funke Medien, Pelham and Spiegel Online decisions of the CJEU: Progress, but still some way to go!", International Review of Intellectual Property and Competition Law (IIC) 2020, Vol. 51, Issue 3, p. 282; T. Mylly, "Of Values and Legitimacy – Discourse Analytical Insights on the Copyright Case Law of the Court of Justice of the European Union", Modern Law Review 2018, Vol. 81, Issue 2, p. 282.

[17] C. Geiger, "The Constitutionalization of IP Law as a guaranty for competing freedoms: is the glass half empty or half full?", paper presented at the conference "Conflicting Freedoms in Intellectual Property Law" organized by the EBS Law School of the University of Wiesbaden (Germany), 27 October 2023 (on file with author).

[18] For further discussion of the principle of proportionality used to mitigate conflicts between fundamental rights *see* J. Christoffersen, "Human Rights and Balancing: The Principle of Proportionality", in C. Geiger (ed.), "Research Handbook on Human Rights and Intellectual Property", *supra* note 13 at p. 19; O. Fischman Afori, "Proportionality – A

argued here that human rights can (even must) serve as an effective framework to define an ethical copyright regime applicable to artificial intelligence (AI), in particular generative AI.

In general, copyright protection can be derived from provisions protecting the right to science and culture[19], the right to freedom of (artistic) expression[20], the right to protection of the moral and material interests of the author[21] and the right to (intellectual) property[22]. These human rights provisions have in common an anthropocentric approach, the human author being at the center of the protection[23]. Consequently, a human rights

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New Mega Standard in European Copyright Law", IIC 2014, Vol. 45, p. 889; C. Geiger and E. Izyumenko, "Intellectual Property before the European Court of Human Rights", in: C. Geiger et al. (eds.), "Intellectual Property and the Judiciary", *supra* note 13 at p. 9 sq.; C. Geiger and E. Izyumenko, "Shaping Intellectual Property Rights through Human Rights Adjudication: The Example of the European Court of Human Rights", *supra* note 13. For a critical assessment, *see* T. Mylly, "Proportionality in the CJEU's Internet Copyright Case Law: Invasive or Resilient?", in: U. Bernitz, X. Groussot, J. Paju, S.A. de Vries (eds.), "General Principles of EU Law and the EU Digital Order", Kluwer Law International, 2020, p. 257.

[19] Arts. 27.1 of the Universal Declaration of Human Rights, 15.1a) of the International Covenant on Economic, Social and Cultural Rights, 13 of the European Union Charter of Fundamental Rights. See on the right to culture, C. Geiger, "Taking the Right to Culture Seriously: Time to Rethink Copyright Law", in: C. Geiger (ed.), "Intellectual Property and Access to Science and Culture: Convergence or Conflict?", CEIPI/ICTSD publication series on "Global Perspectives and Challenges for the Intellectual Property System", 2016, Issue 3, p. 84, available at https://www.ceipi.edu/websites/ceipi/Documents/Publications_CEIPI___ICTSD/CEIPI-ICTSD_no_3.pdf.

[20] Arts. 19 of the Universal Declaration of Human Rights, 15.1 b of the International Covenant on Economic, Social and Cultural Rights, 11 of the European Union Charter of Fundamental Rights.

[21] Arts. 27.2 of the Universal Declaration of Human Rights, 15.1 c) of the International Covenant on Economic, Social and Cultural Rights.

[22] Art. 17 of the Universal Declaration of Human Rights; Arts. 17.2 of the European Union Charter of Fundamental Rights; 1 Protocol No. 1 to the European Convention on Human Rights. Further on the human rights justifications for intellectual property and their roots in human rights law see C. Geiger, "Implementing Intellectual Property Provisions in Human Rights Instruments: Towards a New Social Contract for the Protection of Intangibles", in: C. Geiger (ed.), "Research Handbook on Human Rights and Intellectual Property", Edward Elgar, 2015, p. 661 sq.

[23] *See* in particular with regard to the international human rights framework, "UN Committee on Economic, Social and Cultural Rights (CESCR), General Comment No. 17, "The Right of Everyone to Benefit from the Protection of the Moral and Material Interests Resulting from any Scientific, Literary or Artistic Production of Which He or She is the Author, Art. 15, Para. 1 (c) of the Covenant", 12 January 2006, E/C.12/GC/17, in particular Par. 7, available at http://www.refworld.org/docid/441543594.html; UN General Assembly, Report of the Special Rapporteur in the field of cultural rights, Farida Shaheed, "Copyright Policy and the Right to Science and Culture", Human Rights Council, Twenty-eighth session, A/HRC/28/57, 24 December 2014, available at https://digitallibrary.un.org/record/792652?ln=en, in particular Par. 90, emphasizing that a "human rights perspective focuses attention on important themes that may be lost when copyright is treated primarily in terms of trade: the social function and human dimension of intellectual property, the public interests at stake, the importance of transparency and public participation in policymaking, *the need to design copyright rules to genuinely benefit*

perspective mandates that the protection of creators and human creativity is considered as the point of reference when assessing future reforms concerning copyright and generative AI. With regards to the right to intellectual property, under Art. 17.2 EUCF, it is to be noted that the wording of the provision as such makes no explicit reference to the human creator.[24] It could thus be argued that the scope of protection also includes beneficiaries other than the creator himself. However, Art. 17.2 EUCF must be interpreted in the light of other international human rights provisions which clearly centralize the protection of the human creator. Further, the concept of the social function of intellectual property law must be taken into account when interpreting this provision. It follows, that copyright protection should be granted to the extent it serves the public interest[25], human creativity rather than investment being the triggering factor for protection, which leads also to an author-centric approach[26]. On the contrary, the mentioned constitutional rights do not grant protection for machines or for the ones operating the machines. Generative AI as such does not enjoy human rights protection; thus, from a human rights perspective, the protectability of its results will be dependent on the degree of involvement of the human creator.

As outputs produced by generative AI can be beneficial to human creators in their creative process, the training of AI systems is essential for human beings to explore new avenues of artistic expression that are still unknown. It should be made clear that freedom of (artistic) expression concerns exclusively human beings considering that, at least under the current state of the law, AI does not enjoy the mentioned constitutional right, in particular no right to free expression[27]. "This implies that the

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human authors"(emphasis added) and that "the right to protection of authorship is the right of the human author(s) whose creative vision gave expression to the work. Corporate right holders must not be presumed to speak for the interests of authors" (Par. 99).

[24] "Intellectual property shall be protected.", Art. 17.2 of the European Union Charter of Fundamental Rights. *See* specifically, J. Griffiths and L. McDonagh, "Fundamental Rights and European Intellectual Property Law – The Case of Art 17(2) of the EU Charter", in: C. Geiger (ed.), "Constructing European Intellectual Property: Achievements and New Perspectives", EIPIN Series Vol. 1, Edward Elgar, 2013, p. 75; C. Geiger, "Intellectual Property shall be protected!? Article 17 (2) of the Charter of Fundamental Rights of the European Union: A Mysterious Provision with an Unclear Scope", EIPR 2009, p. 113.

[25] On the social function of intellectual property protection, *see* C. Geiger, 'The Social Function of Intellectual Property Rights, Or how Ethics can Influence the Shape and Use of IP Law', in: G.B. Dinwoodie (ed.), "Intellectual Property Law: Methods and Perspectives", Edward Elgar, 2013, p. 153; C. Geiger, "Implementing Intellectual Property Provisions in Human Rights Instruments: Towards a New Social Contract for the Protection of Intangibles", *supra* note 21 at p. 661; on the philosophical foundation, *see* D. Gervais, "Human Rights and the Philosophical Foundations of Intellectual Property", in: C. Geiger (ed.), "Research Handbook on Human Rights and Intellectual Property", *supra* note 13 at p. 89.

[26] *See* C. Geiger, "Intellectual Property and Investment Protection: A Misleading Equation", *supra* note 3 at p. 7.

[27] C.R. Sunstein "Artificial Intelligence and the First Amendment", 28 April 2023, available on SSRN: https://ssrn.com/abstract=4431251.

interest in the flourishing of the Generative AI industry should remain instrumental to objective of increasing human artistic freedom of expression"[28].

Moreover, the outputs produced by generative AI can lead without any doubt to useful advancements in science and arts that benefit society at large and hence can fall under the protection of the right to science and culture[29]. Accordingly, a right to train AI systems for artistic and scientific purposes can be derived as a principle from the underlying human rights framework. The human rights grounding is even stronger when the training is conducted for scientific and research purposes as the training process can benefit additionally from the fundamental right to research-justification[30].

In order to train these generative AI systems, a large amount of copyrighted works is required. It follows from the right to the protection of material rights of the creator, under Arts. 27.2 UDHR, 15.1 c ICESCR, and the right to (intellectual) property, under Article 17 UDHR, Arts. 17.2 EUCF, 1 Protocol No. 1 ECHR[31], that the author must be fairly renumerated in case of commercial use of his work in the absence of justifications to do so out of competing human rights[32]. As argued previously, "a

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[28] C. Geiger and V. Iaia, "The Forgotten Creator: Towards a Statutory Remuneration Right for Machine Learning of Generative AI", Computer Law & Security Review 2024, Vol. 52 (forthcoming), available on SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4594873.

[29] *See* in this spirit R.C. Dreyfuss, who argues that the right to "share in scientific advancement" must be re-interpreted as a right to participate in the enterprise of scientific advancement in: "Human Rights in a Technological Age: The Right to Participate in Science", N.Y.U. J. Int'l L. & Pol. 2023, Vol. 55, 581.

[30] For a conceptualization of the fundamental right to research emerging from norms, concepts, interpretations and understandings present in the fundamental rights of the ECHR and the CFREU, as well as international human rights instruments, including the UCDHR, the ICCPR, and the ICESCR, *see* C. Geiger and B.J. Jütte, "Conceptualizing a 'Right to Research' and its Implications for Copyright Law, An International and European Perspective", American University International Law Review 2023, Vol 38, Issue 1, p. 1. See also, with regard to international law, S. Samtani, "Developing a Human Right to Research in International Law", (2023) PIJIP/TLS Research Paper Series No. 107, available at: https://digitalcommons.wcl.american.edu/research/107

[31] *See* United Nations Human Rights Office of the High Commissioner, "Taxonomy of Human Rights Risks
Connected to Generative AI, Supplement to B-Tech's Foundational Paper on the Responsible Development and Deployment of Generative", 2023, p. 7, available at: https://www.ohchr.org/sites/default/files/documents/issues/business/b-tech/taxonomy-GenAI-Human-Rights-Harms.pdf, exploring the human rights risks stemming from the development, deployment, and use of generative AI technology: "Generative AI models' ingestion of large quantities of data may entail adverse impacts to individuals' right to own moral and intellectual property. Training processes for some generative AI models may involve the unauthorised use of protected works, adversely impacting those works' original authors' right to own property. The capacity of generative AI systems to create content that mimics existing works by human creators also threatens original authors' property rights".

[32] According to the case law of the ECtHR, a strong justification for the use will for example arguably be every time the use falls within the core of freedom of expression and thus is likely to prevail in a proportionality assessment, when the use of the work e.g. concerns political, scientific and artistic expression/ debate as well as the information of the

conceptualization of copyright within the constitutional right to science and culture, to freedom of expression and artistic creativity and even within a socially rooted property clause […] should lead to the recognition of an overarching and unwritten right for creators to be remunerated for the commercial exploitation of their work. This right should be understood as a fundamental and binding principle of copyright law deriving from fundamental rights and from copyright's social function and would thus have to be recognized by legislators through the implementation of appropriate mandatory copyright contract rules or statutory remunerations rights; it could also be used by the judiciary as an interpretation tool of existing rules to redress unfair remuneration situations for creators, or, in their absence, even beyond as a general principle of law"[33]. In contrast, the mere amortization of economic investment in AI technology can under no circumstances be derived from a fundamental rights perspective.

Beyond the protection of the author´s material interests, the human rights framework also confers the protection of moral interests, under Arts. 27.2 UDHR, 15.1 c ICESCR[34]. More generally, moral rights can emanate from the need to protect the authors´ dignity and personality[35] – values that

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public on matters of public interest, and does not encroach on the very core of another competing right such as the right to property (see detailed on the balancing criteria used by the Strasbourg Court, C. Geiger and E. Izyumenko, "Copyright on the Human Rights Trial: Redefining the Boundaries of Exclusivity through Freedom of Expression", IIC 2014, Vol. 45, 316, at 322 sq). These situations do not lead to any payment, and this is why several exempted uses in copyright law are free uses and should always remain it. However, it is to be noted that for other, less straight-forward situations "the payment of remuneration arguably mitigates the density of the freedom of expression's conflict with property of copyright owner and thereby increases the chances that the freedom of expression-based use would prevail (and "fair use" will accordingly be found)" (C. Geiger and E. Izyumenko, "Towards a European 'Fair Use' Grounded in Freedom of Expression", American University International Law Review 2019, Vol. 35, No. 1, at p. 58).

[33] C. Geiger, "Building an ethical framework for intellectual property in the EU: time to revise the Charter of Fundamental Rights", in: G. Ghidini and V. Falce (eds.), "Reforming Intellectual Property Law", Edward Elgar, 2022, p. 90-91. In this spirit, see also Farida Shaheed, "Copyright Policy and the Right to Science and Culture", *supra* note 22, Par. 100: "Merely enacting copyright protection is insufficient to satisfy the human right to protection of authorship. States bear a human rights obligation to ensure that copyright regulations are designed to promote creators' ability to earn a livelihood (…)".

[34] By contrast to the international human rights law instruments at European level an elaborated and balanced clause for IP protection which includes moral rights is lacking, *see* C. Geiger and E. Izyumenko, "Designing a Freedom of Expression-Compliant Framework for Moral Rights in the EU: Challenges and Proposals", in: Y. Gendreau (ed.), "Research Handbook on Intellectual Property and Moral Rights", Edward Elgar, p. 292 sq., available on SSRN: https://ssrn.com/abstract=3868008.

[35] *See* e.g. P.B. Hugenholtz, "Copyright and Freedom of Expression in Europe", *supra* note 1 at p. 346 (pointing to the German case law and doctrine that recognize implied constitutional underpinnings for moral rights by situating the interest in their protection in the German Constitution's rights to dignity and self-fulfillment); J. Drexl, "Constitutional Protection of Authors' Moral Rights in the European Union – Between Privacy, Property and the Regulation of the Economy", in: K.S. Ziegler (ed.), "Human Rights and Private Law: Privacy as Autonomy", Hart Publishing, 2007, p. 159, (highlighting that, according to the continental copyright tradition of author's rights, "the copyrighted work is considered

underly in various fundamental right in the human rights treaties. The protection of the author´s moral interests can be allocated to the right to privacy and personal integrity or to the so-called "negative" aspect of the right to freedom of expression[36]. In the tension between copyright and generative AI training, the moral right of the author could justify that an ability to oppose the use of his work in certain (limited) circumstances. In fact, the weaker the fundamental rights claim to train AI is, the stronger the moral rights claim can be. For example, training an AI to produce works for discriminatory or racist purposes will benefit from a weaker (if any) fundamental rights protection, but will potentially raise important moral concerns of the author of the work used for training purposes.

In short, these general principles deriving from the human rights framework, notably the centrality of the human creator, should inform the copyright reforms with regards to generative AI systems.

II. THE PROTECTABILITY OF AI-GENERATED WORKS

Before considering the policy question of whether (or not) it is desirable to protect works generated by AI, it is interesting to analyze if de lege lata an AI-generated work can already meet the conditions for protection.

In order to be protected, it is obvious that the work generated by an AI must meet the conditions set forth by copyright law. Many (excellent) writings have recently been devoted to this issue so that a detailed analysis will not be conducted here[37]. Let it just be recalled that according to

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an emanation of the creator's personality". *See* also P. Hughes, "Painting on a Broader Canvas: The Need for a Wider Consideration of Moral Rights Under EU Law", EIPR 2018, Vol. 40, Issue 2, p. 95, (exploring the concept of moral rights with reference to the fundamental right to human dignity); C. Geiger, "Droit d'auteur et droit du public à l'information: approche de droit comparé", *supra* note 1 at p. 129 sq.; "Reconceptualizing the Constitutional Dimension of Intellectual Property – An Update", in: P. Torremans (ed.), "Intellectual Property and Human Rights", *supra* note 13 at p. 137 (in particular Fn. 79).

[36] C. Geiger and E. Izyumenko, "Designing a Freedom of Expression-Compliant Framework for Moral Rights in the EU: Challenges and Proposals", *supra* note 33.

[37] *See* notably P.B. Hugenholtz and J.P. Quintais, "Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?", International Review of Intellectual Property and Competition Law 2021, Vol. 52, p. 1190; D. Gervais, "The Machine as Author", Iowa Law Review, 2020, Vol. 105, p. 2053; J.C. Ginsburg, "People Not Machines: Authorship and What It Means in the Berne Convention", IIC 2018, Vol. 49, p. 131; J.C. Ginsburg and L. A. Budiardjo, "Authors and Machines", Berkeley Technology Law Journal 2019, Vol. 34, Issue 2, p. 343; A. Guadamuz, "Do Androids Dream of Electric Copyright? Comparative Analysis of Originality in Artificial Intelligence Generated Works", in: R.M. Hilty, J.-A. Lee and K.-C. Liu (eds.), "Artificial Intelligence and Intellectual Property", Oxford University Press, 2021, p. 147; D. Gervais, "The Human Cause", and G. Frosio, "Four Theories in Search of an A(I)uthor", in: R. Abbott (ed.), "Research Handbook of Artificial Intelligence and Intellectual Property", *supra* note 4 at p. 22 and 156; M. Vivant, "Intelligence artificielle et propriété intellectuelle", Comm. Com. Électr., 2018, Study No. 18; S. Dusollier, "Du commun de l'intelligence artificielle", A. Bensamoun, "Libres propos sur l'existence d'un droit de l'œuvre applicable aux créations issues de l'intelligence artificielle", N. Binctin, "L'influence de l'intelligence artificielle sur les mécanismes de la propriété intellectuelle", in : J.-M. Bruguière and C. Geiger (eds.),

copyright law, the condition is twofold: first, there must be a protectable "work" and second, this work must be "original"[38]. What is a "work" is generally not defined by the legislator at national, EU or international level; however, it is commonly accepted that human intervention is necessary for a work to be protected under copyright law. According to some authors, this obviously stems from copyright law's emphasis on the creator, whose creative act is the generator of the protection granted[39]. In fact, the notion of originality, defined by the Court of Justice of the EU as the "author's own intellectual creation"[40] implies creative choices[41]. This inevitably necessitates the ability to make conscious decisions, thus requiring a "mind", a "heart" or a "soul" to use Kazuo Ishiguro's poetic imagery quoted above[42]. In a less poetic way, this is exactly what the U.S. Copyright Office recalled when it held that for the work to be protectable, it must emanate from a human being[43]. The Office had already decided in a similar way

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"Penser le droit de la pensée, Mélanges en l'honneur de Michel Vivant", Dalloz, 2020, pp. 107, 13 and 41.

[38] On this latter condition in the context of AI generated or AI-assisted works, *see* V. Iaia, "To Be, or Not to Be … Original Under Copyright Law, That Is (One of) the Main Questions Concerning AI-Produced Works", GRUR Int. 2022, Vol. 71, Issue 9, p. 793 sq.

[39] *See* in this sense, notably, D. Gervais, P.B. Hugenholtz and J.P. Quintais, J. Ginsburg, *supra* note 35.

[40] CJEU – Judgment of 16 Jul 2009, C-5/08 (*Infopaq*), Par. 37.

[41] The link with the human author is even more present in the definition of originality according to French copyright law where it is understood as "the imprint of the personality" of the author. *See* in this sense, M. Vivant, "Intelligence artificielle et propriété intellectuelle", *supra* note 36, underlining that according to a "personalist" copyright conception, it is the imprint of the personality of the author that make a work protectable by copyright law, and this personality is necessarily and intrinsically linked to a human person.

[42] *See* in this sense P. Keller, "Copyright rules for AI generated visuals will determine the future of synthetic worlds", 9 September 2022, available at https://openfuture.eu/blog/copyright-rules-for-ai-generated-visuals-will-determine-the-future-of-synthetic-worlds/, who points out, about image-generating AIs: "On a fundamental level, they are – like all other computers – copying machines. While there is a lot of hype and awe around the new crop of image generators that can indeed generate stunning visual output in reaction to textual prompts fed into them, this does not mean that they are somehow capable of independently creating works of art". See also P. Samuelson, C.J. Springman, and M. Sag, "Comments in Response to the Copyright office's Notice of Inquiry on Artificial Intelligence and Copyright", 30 Oct. 2023, p. 2 sq (available at https://www.regulations.gov/comment/COLC-2023-0006-8854): "An AI system can't produce works that reflect its own "original intellectual conception" because an AI system is incapable of having one. AI systems do not "think" or "create" as we understand those terms in the context of human mental processes. Rather, AI systems employ math to make predictions (…). Thus, the notion of AI being recognized as an author is a doctrinal non-starter".

[43] *See* also the U.S. Copyright Office Guidelines: "Compendium of U.S. Copyright Office Practices", 3rd ed., 2014, updated on 28 January 2021, par. 306: "The Human Authorship Requirement: The U.S. Copyright Office will register an original work of authorship, provided that the work was created by a human being. The copyright law only protects "the fruits of intellectual labor" that "are founded in the creative powers of the mind". Because copyright law is limited to "original intellectual conceptions of the author", the Office will

when specifying that a photo taken by a monkey cannot be registered as a work[44]. Reference is made here to the famous self-portrait taken by a monkey, the "Monkey Selfie", which had given rise to a dispute over copyright ownership of the photo between the photographer who owned the camera used by the said monkey and the association PETA (People for the Ethical Treatment of Animals)[45]. Therefore, the question: "Is a work produced exclusively by an AI protected by copyright?" can be answered negatively based on current understanding of copyright law[46].

That said, it would be wrong to stop there. As a study conducted for the European Commission has pointed out, if a work solely created by an AI cannot be protected by copyright, works for which the creators use the AI as a tool in the production process can be, provided of course that the conditions of originality and the existence of creative choices are met[47].

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refuse to register a claim if it determines that a human being did not create the work", available at https://www.copyright.gov/comp3/docs/compendium.pdf.

[44] Ibid., para. 313.2: "Works That Lack Human Authorship: The U.S. Copyright Office will not register works produced by nature, animals, or plants. Examples: A photograph taken by a monkey".

[45] *Naruto v. Slater*, 888 F.3d 418, 437 n.11 (9th Cir. 2018). The Court did not rule on the merits, as the association's action on behalf of the monkey against the photographer was dismissed on procedural grounds.

[46] A notable exception is the United Kingdom's Copyrights, Designs and Patents Act (CPDA) of 1988, which allows to protect "computer-generated works", these works being defined according to Section 178 CPDA as works "generated by computer in circumstances such that there is no human author of the work". According to Art. 9(3) of the same Act, "the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken". This provision has been however considered by some authors as being in contradiction with Section 1 of the same Act which specifies that copyright subsists in "original literary, dramatic, musical or artistic works". According to M. Blaszczyk, "Contradictions of Computer-Generated Works' Protection", Kluwer Copyright Blog 6 Nov. 2023, https://copyrightblog.kluweriplaw.com/2023/11/06/contradictions-of-computer-generated-works-protection/, the UK Copyright Act "provides for protection of authorless works, ascribing authorship to the person making the necessary arrangements, but according to Section 1, without authorial originality, no works are protectable. In this way, the contradictions of the statutory text, mirror the contradiction involved in the very concept of "emergent" or "authorless" works. Without a human author, there is no expression of ideas that can be original, and thus no copyrightable work. The concept of computer-generated works is thus logically inconsistent and incoherent with all of copyright's doctrinal architecture". See also in this sense M. Blaszczyk, "Impossibility of Emergent Works' Protection in U.S. and EU Copyright Law", North Carolina J.L. & Tech. 2023, Vol 25, Issue 1.

[47] P.B. Hugenholtz et al., "Trends and developments in artificial intelligence – Challenges to the intellectual property rights framework – Final report", Publications Office of the European Union, 2020, available at https://data.europa.eu/doi/10.2759/683128 ; For a synthetic version of the study, *see* P.B. Hugenholtz and J.P. Quintais, "Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?", *supra* note 58 at p. 1190 and its comment by C. Geiger, "The Role of Human Creativity in the Copyrightability of Artificial Intelligence-Generated Works", JOTWELL, 29 April 2022, available at https://ip.jotwell.com/the-role-of-human-creativity-in-the-copyrightability-of-artificial-intelligence-generated-works/.

With regard to copyright principles, this is nothing new since it is accepted that an author can use a computer program or a machine for the realization of his/her creation from the moment he/she makes creative choices. This does not exclude a part of randomness in the result when consciously included the creation process. The photographer presses the button, but it is the camera (and its various functions, often automatic, such as filters) that takes the picture[48]. Sometimes, moreover, it is the creator's choices alone that will be at the origin of the protection granted. Contemporary art provides numerous illustrations of this. When Duchamps "chooses" a commercially purchased urinal for display, it is the choice, not the making, that constitutes the creative act at the origin of the copyright. In the context of databases, it is the creative choices in the arrangement, selection and presentation of the database which will trigger copyright protection.

To return to AI-generated "works", human creative intervention can occur at different stages of their production: Hugenholtz et al. proposes to distinguish the "conception" (design and specifications), the "execution" (producing draft version) and "redaction" (selecting, editing, refinement, finalization)[49]. The latter corresponds to the stage of finalization of the work, which will see the AI-generated result reworked, refined, edited and modified by human intervention (which, when it is creative and meets the conditions of copyright, can lead to copyright protection)[50]. As the condition of originality is usually quite easily met, judges often finding creativity in productions with a very low personal touch, the exclusion of protection for AI-generated works could be circumvented quite easily as long as there is creative human intervention in the final result[51]. For these reasons, several scholars have considered that there is no need for legislative intervention at

[48] For such an analogy, *see* C. Laser, "How A Century-Old Insight of Photography Can Inform Legal Questions of AI-Generated Artwork", Technology & Marketing Law Blog, 2 August 2023, available on SSRN: https://ssrn.com/abstract=4529595.

[49] P.B. Hugenholtz et al., "Trends and development in artificial intelligence: challenges to the intellectual property rights framework", *supra* note 46. *See* also O. Bulayenko, J.P. Quintais, D. Gervais and J. Poort, "AI Music Outputs: Challenges to the Copyright Legal Framework", reCreating Europe Report, February 2022, p. 109, available on SSRN: https://ssrn.com/abstract=4072806: "Absent additional transparency measures, an accurate substantive assessment of originality will require reverse engineering of the human interventions or contributions in the use of the AI system leading to a certain output".

[50] *See* also M. Fenwick and P. Jurcys, "Originality and the future of copyright in an age of generative AI", Computer Law & Security Review: The International Journal of Technology Law and Practice 2023 (forthcoming), describing "an iterative, dynamic process of *conception, prompting, generation, refining,* and *deployment* to characterise creativity in this context".

[51] See in this sense for the US (but with a comparison to the EU), E. Lee, "Comment of Professor Edward Lee to Artificial Intelligence Study by The United States Copyright Office", 30 Oct. 2023, available on ssrn: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4619118: "As the Supreme Court elaborated in Feist, the proper test of authorship examines whether the person contributes, at least, a *minimal level of creativity* in the origination of the work, which may be satisfied simply by a person's selection or arrangement of elements in the work. The requisite level is, as the Court recognized, "extremely low," or the bare minimum to qualify as an author" (emphasis added).

the EU or US level because the current copyright framework already allows for protection of most AI-generated works[52].

Thus, the question arising from a de lege lata perspective is howmuch human creative intervention on the AI-generated output is necessary to trigger copyright protection. There is certainly a grey zone here that will lead to difficult case-by-case decisions[53]. AI technology is already frequently used by artists in their creative process and AI-based artistic practices are likely to augment in the future[54]. As an illustration, the Museum of Modern Art (MoMA) has recently acquired Refik Anadol's

[52] For the EU: P.B. Hugenholtz et al., "Trends and development in artificial intelligence: challenges to the intellectual property rights framework", *supra* note 46; M. Fenwick and P. Jurcys, "Originality and the future of copyright in an age of generative AI", *supra* note 49, who "contend that copyright – specifically the concept of originality as articulated in US federal law – is a sufficiently durable legal mechanism that can manage these new cultural forms, and that the two basic requirements of modern copyright law (a tangible medium of expression and a modest degree of creativity) remain relevant in identifying the scope of legal protection"; C. Saiz García, "Las obras creadas por sistemas de inteligencia artificial y su protección por el Derecho de autor", InDret 2019, Issue 1, available at https://indret.com/las-obras-creadas-por-sistemas-de-inteligencia-artificial-y-su-proteccion-por-el-derecho-de-autor/, analyzing "the possible protection of AI-created works under existing copyright law without the need for modification because there is human activity behind them"; K. Militsyna, "Human Creative Contribution to AI-Based Output – One Just Can('t) Get Enough", GRUR Int. 2023, Vol. 72, Issue 10, p. 939 concluding that in "many cases of using AI to create output human creative participation remains sufficient for copyright protection eligibility"; in the US, see e.g. P. Samuelson, C.J. Springman, and M. Sag, *supra* note 41, p. 3: "We see no need for special copyright or sui generis rules for AI".

[53] In this sense, a recent decision of the Beijing internet Court of 27 Nov. 2023 (Li v. Liu) seems extremely worrying, as it granted copyright protection for an image generated by a text-to-image Generative AI to the user of the AI, based on the fact that he "made a certain degree of intellectual investment" in selecting and arranging the inputs (i.e., a series of creative prompts and parameters that generative AI users feed into the AI system to facilitate an output based upon such inputs)" (English translation of the parts of the decision are available at https://www.ailawandpolicy.com/2023/12/computer-love-beijing-court-finds-ai-generated-image-is-copyrightable-in-split-with-united-states/#_ftn1). As discussed, admitting such a low degree of human intervention is highly problematic as it offers an open door to copyrightability to AI generated works with potential negative effects on human creativity (for a criticism see also A. Zhang, "China's Short-Sighted AI Regulation", 8 Dec. 2023, https://www.project-syndicate.org/commentary/risks-of-beijing-internet-court-ruling-allowing-copyright-of-ai-generated-content-by-angela-huyue-zhang-2023-12). It remains to be seen however if such decision will be confirmed by higher courts, as the Beijing Internet Court is a low-level institution. As we have seen, this decision also contradicts the practice of the US copyright office according to which prompts are not sufficient as creative human inputs to trigger copyright protection (see the decision Midjourney "Théâtre D'opéra Spatial", *supra* note 6, refusal to register despite the applicant having argued to have input at least 624 prompts and reworked the output of Midjourney to reach the final result).

[54] *See* in this sense M. Fenwick and P. Jurcys, "Originality and the future of copyright in an age of generative AI", *supra* note 49, stating that "while hybrid-networked (i.e., human – corporate – machine) *creators* have always created hybrid-networked cultural *forms* (i.e., creations that blend human and technology-constituted elements), such hybridity becomes increasingly visible and complex in the context of a new world of generative AI. At the very least, earlier – and influential – models of creativity as human-driven involving creation *ex nihilo* become harder to sustain in a new age of generative AI".

artwork "Unsupervised- Machine Hallucinations", marking the first time the institution has ever added piece created using mainly AI technology to its collection.[55] According to digital artist, he has utilized machine intelligence as a "collaborator of human consciousness […] to unfold unrecognized layers of our external realities."[56] In order to generate the piece, Anadol and his team trained the AI with vast amounts of data (including copyright protected works) from digital visual archives of the MOMA and other publicly available sources, then output a series of ever-shifting audiovisuals that reinterpret, alter, and riff on those original works[57].

The "copyrightability" of this particular work has not (yet) been discussed or questioned, however it can be expected that such challenges will happen in the future. It is thus to be hoped that in order to distinguish the protected from the unprotected output, the human creativity factor will be decisive, and protection granted only when the human creative input is predominant in comparison to the one of the machines in the end result: in short, where it can be clearly demonstrated that the machine was strictly used as a tool in a human creative process[58], that the end result was "AI assisted" and not "AI generated", the burden of proofs lying on the one claiming copyright protection.

Putting human creativity at the center of the copyrightability question does however not answer the question from a policy perspective if this

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[55] *See* https://www.artforum.com/news/moma-acquires-refik-anadols-unsupervised-517497/.

[56] *See* https://refikanadol.com/works/unsupervised/.

[57] The field of music, an illustration of the use of GenAI in electronic music can be seen in one of the French DJ David Guetta´s music composition played live, in which he uses generative AI tools to create lyrics and a voice in the style of the rapper Eminem which he then mixes over own produced electro beats (*See* M. Fenwick and P. Jurcys, "Originality and the future of copyright in an age of generative AI", *supra* note 49, according to which this example "reveals something more general about creativity in a digital age" and concluding that "copyright law should remain an important mechanism to facilitate genuine creators who are using AI systems in innovative and unique ways to push the boundaries of their creativity"). The use of ones' voice or image can however be very problematic from the perspective of protection of fundamental right to personality (concerns are often raised in the context of so called "deep fakes", *see* e.g. E. F. Judge and A. M. Korharni, "Deepfakes, Counterfeits, and Personality", Ottawa Faculty of Law Working Paper No. 2021-21, available on SSRN: https://ssrn.com/abstract=3893890; K. Tyagi, "Deepfakes, Copyright and Personality Rights an Inter-Disciplinary Perspective", in: K. Mathis and A. Tor (eds.), "Law and Economics of the Digital Transformation", Springer, 2023, p. 191. This topic, however important, goes beyond the scope of this article and will not be addressed.

[58] On the distinction between sufficient and insufficient human creative participation, *see* K. Militsyna, "Human Creative Contribution to AI-Based Output – One Just Can('t) Get Enough", GRUR Int. 2023, Vol. 72, Issue 10, p. 939. See also, P. Samuelson, C.J. Springman, and M. Sag, *supra* note 41, p. 2: "Humans using AI as a tool of expression may claim authorship if the final form of the work reflects their "original intellectual conception" in sufficient detail". According to these authors, even "refining a series of text prompts and choosing among different outputs should
also be recognized as a way in which a human using Generative AI could meet the authorship standard".

should be a desirable result[59]. In fact, some authors have argued that it would be necessary to overcome the hurdle of human intervention to protect AI-generated creations[60]. The discussion is admittedly not entirely new and recalls the "copyright without author"[61]-debates held at times when copyright protection for computer programs have been introduced[62]. According to others, a more cautious approach needs to be taken and the access to copyright protection strictly limited, at least until the desirability of an extension is clearly established[63]. This question is obviously most complex, and the answer might depend i.a. on the evolution of the technology and its future uses. However, it is worth briefly recalling some of the arguments made by each side, to the extent that an evolution of copyright law is now often required.

III. THE DESIRABILITY OF GRANTING COPYRIGHT PROTECTION TO AI-GENERATED WORKS

As Professors Vivant and Bruguière have written, "de lege ferenda, the discussion is open"[64]. However, the decisions to be taken are so fundamental for the future of our society that the conversation cannot be had only with lawyers; any reform would also have to rely on independent

[59] *See* in this sense, P. Keller, "Copyright rules for AI generated visuals will determine the future of synthetic worlds", *supra* note 41, "the real question we should ask in response to the emergence of this new class of visual creations is not if copyright applies to them, but rather if treating them as copyrighted works can possibly result in societal harm".

[60] *See* in particular R. Abbott and E. Rothman, "Disrupting Creativity: Copyright Law in the Age of Generative Artificial Intelligence", *supra* note 2; C. Varytimidou, "The New A(I)rt Movement and Its Copyright Protection: Immoral or E-Moral?", GRUR Int. 2023, Vol. 72, Issue 4, p. 357: "Nowadays art can be created by algorithms and continental Europe's copyright law […] no longer seems fit for purpose, persisting as it does in searching for a human behind each creative outcome".

[61] P. Gaudrat and M. Vivant, "Marchandisation", in: M. Vivant (ed.), "Propriété Intellectuelle et mondialisation, La propriété intellectuelle est-elle une marchandise ?", Dalloz, 2004, p. 44 sq. *See* also J.-M. Bruguière, "Le 'droit d'auteur économique', Un droit d'auteur entrepreneurial perturbateur du droit d'auteur humaniste", in: J.-M. Bruguière and C. Geiger (eds.), "Penser le droit de la pensée, Mélanges en l'honneur de Michel Vivant", *supra* note 36 at p. 731.

[62] With regard to computer generated works see already the foundational work of P. Samuelson, "Allocating Ownership Rights in Computer-Generated Works", University of Pittsburgh Law Rev. 1986, Vol. 47 Issue 4 p. 1186.

[63] *See* for example D. Gervais, J.C. Ginsburg, C. Craig, *supra* note 2 and 35; P. Samuelson, C.J. Springman, and M. Sag, *supra* note 41. In the context of automated journalism, *see* A. Trapova and P. Mezei, "Robojournalism – A Copyright Study on the Use of Artificial Intelligence in the European News Industry", GRUR Int. 2022, Vol. 71, Issue 7, p. 589 sq., demonstrating "that the extent to which European journalism relies on assistive and generative technologies to produce written output does not justify, from a copyright perspective, the changing of the current anthropocentric copyright system"; "The current copyright framework is rooted in the presence of a human author and that should remain to be so. The absence of free and creative choices should not be artificially compensated by considerations for potential market failures if copyright protection does not arise for robojournalism output".

[64] M. Vivant and J.-M. Bruguière, "Droit d'auteur et droits voisins", 4th ed., Dalloz, 2019, p. 164.

and serious impact assessments to establish its benefit. Too often in the past, legislative interventions were conducted under the influence of sectorial interests, without taking into account the potential consequences of such interventions on the innovation ecosystem or their implications on society[65]. A good example is the damage made at the time by the proposed directive on computer-implemented inventions, for which the European Commission ignored the vast majority of economic studies on the issue (including those commissioned by the Commission itself), which had pointed out the potential negative effects in terms of innovation that broad patenting of computer programs might cause and urged the legislator to be cautious[66]. The result: the Commission went ahead, leading to the most radical rejection by the European Parliament of an intellectual property legislation in its history; in the meantime, the legal uncertainty on the patentability of computer programs remained, given the unclear case-law of the European Patent Office on the issue, which was also detrimental to many economic players in Europe[67].

Returning to AI, studies on the potential effects on creativity of opening up copyright protection for AI-generated creations are currently lacking[68]. If AI creations were easily protected, this would mean that countless creations will potentially be granted copyright protection, since an AI has almost unlimited production capabilities and can generate an enormous amount of new works in record time at low cost[69]. This obviously raises the question of the creative spaces remaining for human creators and the potential very deterrent effect on future creation that such a development would have.

Moreover, a potential change in copyright law needs to be evaluated in

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[65] *See*, in this spirit, our call for the construction of a European intellectual property law based on empirical studies, demonstrating beforehand the potential benefits of an intervention of the European legislator, C. Geiger, "The Construction of Intellectual Property in the European Union: Searching for Coherence", in: C. Geiger (ed.), "Constructing European Intellectual Property: Achievements and New Perspectives", *supra* note 23.

[66] *See* R.M. Hilty and C. Geiger, "Patenting Software? A judicial and socio-economic analysis", IIC 2005, Vol. 36, Issue 6, p. 615 sq. with further references.

[67] C. Geiger, "Les inventions mises en œuvre par ordinateur: actualité et enjeux de l'extension contemporaine de la brevetabilité", in: M. Dhenne and C. Geiger (eds.), "Les inventions mises en œuvre par ordinateur: enjeux, pratiques et perspectives", LexisNexis, 2019, p. 1 sq.

[68] On the contrary, a recent study by the European Commission highlights the potential negative effects on traditional creative sectors of extending exclusive rights to AI-generated productions: European Commission, Directorate General for Communication Networks, Content and technology, "Study on copyright and new technologies: copyright data management and artificial intelligence", Publications Office of the European Union, 2022, available at https://data.europa.eu/doi/10.2759/570559: "The feedback received seems to indicate that an additional right in favour of machine-generated outputs might have negative impacts on the traditional creative sectors", p. 21.

[69] *See* D.L. Burk, "Cheap Creativity and What It Will Do", Georgia L. Rev., 2023, Vol. 57, p. 1669 sq.: "Like other cost-saving industrial automation, this can be expected to displace human labor and redefine human roles in production".

the light of the function that we want copyright to fulfill[70]. An AI does not need to be incentivized to produce, it just implements what it has been asked to perform, and this as often as it is asked to. It does not need a break to eat, sleep, or to search for inspiration. In fact, those who emphasize the need to protect AI-generated works, whether by copyright[71] or related rights[72], do not highlight the need to reward creators but rather the objective to encourage investment in the field of AI. This well-known mantra has become an almost Pavlovian reflex of investors in an economy now based mostly on intangible assets: "I have invested, so I must benefit from an intellectual property right". The issue is thus closely related to the role of investment protection within intellectual property law. As Reto Hilty et al. have rightly underlined, "potential protection regimes for AI – if ever required – would not be looking at creators or inventors, but at investors", concluding that "most AI applications lack a theoretical justification for creating exclusive rights. If this fact is ignored, such legislation could

[70] *See* e.g. C. Geiger, "The Social Function of Intellectual Property Rights, Or how Ethics can Influence the Shape and Use of IP law", *supra* note 24, p. 153. For a reflection of AI authorship in the light copyright's function, *see* also C.J. Craig, "The AI-Copyright challenge: tech neutrality, authorship and the public interest", in: R. Abbott (ed.), "Research Handbook of Artificial Intelligence and Intellectual Property", *supra* note 4 at p. 134, according to whom it is necessary to resist "calls to extend copyright to cover AI-generated works on the basis that they are not equivalent to the works of authorship that copyright seeks to encourage".

[71] *See* in particular R. Abbott and E. Rothman, "Disrupting Creativity: Copyright Law in the Age of Generative Artificial Intelligence", *supra* note 2 at p. 4: "Rather than acting directly on authors, copyright protection will motivate people upstream of the creative act to use and develop AI that will result in more production and dissemination of works"; A. Bensamoun, and J. Farchy, "Mission intelligence artificielle et culture", Conseil Supérieur de la Propriété Littéraire et Artistique, January 2020, p. 30, available at https://www.culture.gouv.fr/content/download/281441/file/CSPLA-Rapport-complet-IA-Culture_janv2020.pdf?inLanguage=fre-FR.

[72] M. Senftleben and L. Buijtelaar, "Robot Creativity: An Incentive-Based Neighboring Rights Approach", EIPR 2020, Vol. 42, p. 797; A. Ramalho, "Will Robots Rule the (Artistic) World? A Proposed Model for the Legal Status of Creations by Artificial Intelligence Systems", Journal of Internet Law 2017, Vol. 21, Issue 1, p. 12; N. Gervassis and A. Trapova, "UKIPO's public consultation on AI and IP – computer-generated works (1st part)", 14 March 2022, available at http://copyrightblog.kluweriplaw.com/2022/03/14/ukipos-public-consultation-on-ai-and-ip-computer-generated-works-part-1/; A. Shtefan, "Creations of artificial intelligence, In search of the legal protection regime", JIPITEC 2023, Vol. 14, Issue 1, p. 94; C. Varytimidou, "The New A(I)rt Movement and Its Copyright Protection: Immoral or E-Moral?", *supra* note 59 at p. 362, proposing a *sui generis* economic right that "serves as a countermeasure and aims to provide humans with the incentive to continue to invest in AI even though humans will not be deemed to be authors of AGA"; E. Bonadio, N. Lucchi and G. Mazziotti, "Will Technology-Aided Creativity Force Us to Rethink Copyright's Fundamentals? Highlights from the Platform Economy and Artificial Intelligence", IIC 2022, Vol. 53, p. 1174 (at 1196), arguing for some kind of *sui generis* right with reference to the precedent of the *sui generis right* for producers of non-original databases granted by the 1996 EU Database Directive; A. Papadopoulou, "Creativity in crisis: are the creations of artificial intelligence worth protecting?", JIPITEC 2021, Vol. 12, p. 408: "Legislating a sui generis right in order to boost innovation, protect competition and maintain a healthy market for intellectual creations is suggested as the best option".

ultimately lead to dysfunctional effects that have negative impacts on social welfare"[73].

The quasi-systematic push for IP protection is (unfortunately) not a new issue either. As it has been often underlined, intellectual property rights tend to progressively shift to investment-protection mechanisms[74]. The multiplication of neighboring and sui generis rights is surely a consequence of this trend, as is the progressive extension of the scope of protection[75]. However, this multiplication of intellectual property rights, sometimes on the same object, has not remained without consequences and has produced a "legal hamburger in which several layers of rights overlap"[76]. These layers consist of legal hurdles to overcome in the form of multiple authorizations to request, all resulting in potential limitations for those who want to create (not to mention the uncertainty that often surrounds the ownership of rights). To take only one example, the sui generis protection for database producers: subsequent evaluations by the European Commission have failed to determine whether the introduction of this right has increased the production of databases within the EU[77]. Knowing that once an intellectual

[73] R.M. Hilty, J. Hoffmann and S. Scheuerer, "Intellectual Property Justification for Artificial Intelligence", in: R. Hilty, J.-A. Lee and K.-C. Liu (eds.), "Artificial Intelligence and Intellectual Property", Oxford University Press, 2021, p. 50 sq. In this sense *see* also A. Ramalho, "Will Robots Rule the (Artistic) World? A Proposed Model for the Legal Status of Creations by Artificial Intelligence Systems", *supra* note 71 at p. 12, stating that "justifications for granting copyright protection do not fit Ais creations, and privatization through the grant of (exclusive) rights should not be readily chosen without further thought", and with regard to the creation of a new related right, *see* M. Duque Lizarralde and C. Meinecke, "Authorless AI-assisted productions: Recent developments impacting their protection in the European Union", JIPITEC 2023, Vol. 14, Issue 1, p. 93: "Up to date there is neither economic nor theoretical justification (e.g., deontological or naturalistic), supporting that this related right would incentivise the creation of authorless AI-assisted productions, instead of producing saturation in the market". See also P. Samuelson, C.J. Sprigman, and M. Sag, *supra* note 41, p. 3

[74] *See* also C. Geiger, "Intellectual Property and Investment Protection: A Misleading Equation", *supra* note 3 at p. 7 sq.

[75] For a critique of this trend, *see* P.B. Hugenholtz, "Neighboring Rights are Obsolete", IIC 2019, Vol. 50, p. 1006; C. Sganga, "The Many Metamorphoses of Related Rights in EU Copyright Law: Unintended Consequences or Inevitable Developments?", GRUR Int. 2021, Vol. 70, Issue 9, p. 821; C. Geiger, "Intellectual Property and Investment Protection: A Misleading Equation", *supra* note 3.

[76] P. Gaudrat and M. Vivant, "Marchandisation", in: M. Vivant (eds.), "Propriété Intellectuelle et mondialisation, La propriété intellectuelle est-elle une marchandise ?", *supra* note 59 at p. 42.

[77] In this sense M. van Eechoud, "Please share nicely – From Database directive to Data (governance) acts", Kluwer Copyright Blog, 18 August 2021, available at http://copyrightblog.kluweriplaw.com/2021/08/18/please-share-nicely-from-database-directive-to-data-governance-acts/, according to whom the "highly critical 2005 evaluation report of the Database directive already signaled that the economic impact of the *sui generis* right was unproven, and that it comes perilously close to an undesirable property right in data as such. The database industry (its European powerhouse being the U.K.) then did not favour a repeal of the sui generis right and the Commission identified various other drawbacks, so no action followed. The 2018 review of the Database directive and accompanying public consultation perpetuated this stasis. It too concludes there is no proven economic benefit".

property right is in place it is almost impossible to repeal it[78], past experiences in the EU should lead to a cautious approach before protecting AI-generated productions by copyright and granting rights to investors[79]. On the contrary, the trend toward overprotection of intellectual property rights should prompt prior reflection on the justifications for granting them[80]. If IP rights aim at encouraging creation and protecting creators, creativity – not investment – should be the triggering factor for protection[81]. On the other hand, if the goal is to create mechanisms for investment protection, then the system cannot continue to lie on the generous protection justified by the protection of the human creator and would need reform[82].

To sum up: taking the binding human rights framework as guidance for copyright protection leads to an overall cautious approach when protecting AI-generated works by copyright and/ or granting rights to investors. AI-generated output "as such" lacks the traditional protectability that

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[78] *See*, on the topic, M. Husovec, "The Fundamental Right to Property and the Protection of Investment: How Difficult Is It to Repeal New Intellectual Property Rights?", in: C. Geiger (ed.), "Research Handbook of Intellectual Property and Investment Law", Edward Elgar, 2020, p. 385.

[79] In this sense, *see* also the study of the European Commission, "Study on copyright and new technologies: copyright data management and artificial intelligence", available at https://op.europa.eu/en/publication-detail/-/publication/cc293085-a4da-11ec-83e1-01aa75ed71a1/language-en, p. 21: "The research, interviews, and surveys conducted within the study indicate firstly that no incentive for the use of AI tools in the creative process in the form of additional exclusive rights appears necessary. The already broad deployment of AI tools in the creative context confirms this. The study concludes that a new related right for AI-generated outputs is not desirable"; O. Bulayenko, J.P. Quintais, D. Gervais and J. Poort, "AI Music Outputs: Challenges to the Copyright Legal Framework", *supra* note 48 at p. 113 sq: "There is no clear case for a legislative action at the level of substantive rules in the EU copyright acquis in the short term as regards AI outputs. Existing proposals for new rights and forms of protection for AI outputs generally lack clear and convincing theoretical and economic justification […] Considering this, we recommend that no new protection regimes for AI outputs are introduced absent clear and compelling evidence that justifies a change to the status quo"; J. Drexl, R.M. Hilty, et al. "Artificial Intelligence and Intellectual Property Law, Position Statement of the Max Planck Institute for Innovation and Competition of 9 April 2021 on the Current Debate", Max Planck Institute for Innovation and Competition Research Paper No. 21-10, available on SSRN: https://ssrn.com/abstract=3822924, p. 5: "Introducing a new protection regime (e.g. a new related right) for AI- generate output is not justified according to the current state of Knowledge".

[80] *See* R.M. Hilty, "The Expansion of Copyright Law and its Social Justification", in: C. Heath and K.-C. Liu (eds.), "Copyright Law and the Information Society in Asia", Hart Publishing, 2007, p. 1. But there is a vast body of literature criticizing the expansion of IP rules beyond its traditional borders. *See* e.g. R.C. Dreyfuss, D.L. Zimmerman and H. First (eds.), "Expanding the Boundaries of Intellectual Property", Oxford University Press, 2001.

[81] For a recent reflection in this direction *see* C. Geiger, "Intellectual Property and Investment Protection: A Misleading Equation", *supra* note 3.

[82] For example, protecting a work 70 years after the death of the author implies that the event giving rise to the protection is a creation that emanates from an author (human, because the machine does not die). However, if one sets up a "copyright without author", this cannot remain without consequence on the duration of the right. If it is a question of making an investment profitable, the duration can even be very short.

human-created works enjoy. An analogy can be drawn to Article 52 of the European Patent Convention, which specifies certain items that are not regarded as inventions. One of these exclusions concerns computer programs. In a similar vein, it could be decided that AI-generated content, in its raw, unaltered form, may not be considered as a copyrighted work. This exclusion would not prevent the combination of AI and creative human input, put set a clear signal from the legislator in particular to the judiciary in order to avoid that the unwritten condition of human authorship be overruled in the future. It also would induce, in the spirit of the exclusion of patentability of computer programs "as such", a higher level of argumentation to show that the human creative input was determinant and predominant in the final result. Only when AI would serve as a tool of human creativity, it could result in a copyrighted work. In such cases, the unique blend of AI's capabilities and human ingenuity can produce content that is eligible for copyright protection.

However, when determining the scope of protectability, it will be necessary to examine very closely whether these extensions of exclusive control provide sufficient spaces of freedom to guarantee follow-on creations and future creativity. If one wants to incentivize the development of AI-generated creations, it would probably be more efficient further widen the scope of certain exceptions to copyright and database right, such as the exceptions allowing text and data mining.

This leads us to the third crucial question with regard to AI-created works: their legality with regard to copyright law. In short, after discussing the protectability of the output of the machine, the question of the legality of the input necessary for the machine to be able to generate new works needs to be addressed.

IV. The legality of AI-generated content trained on copyright protected works

AI systems do not produce from scratch. They have to be trained through the process of machine learning with existing data and works[83]. As Martin Senftleben sharply describes it, "generative AI systems are only capable of mimicking human creativity because human works have been used as training material. On the basis of existing literary and artistic creations that serve as input data, machine-learning algorithms are able to recognize patterns and similarities. Following this deductive method, a

[83] On the technical aspects of machine learning *see* J. Drexl, R.M. Hilty et al., "Technical Aspects of Artificial Intelligence: An Understanding from an Intellectual Property Law Perspective", Max Planck Institute for Innovation and Competition Research Paper No. 19-13 (2019), available on SSRN: https://ssrn.com/abstract=3465577. Exploring the technicalities of machine learning and its implications for ongoing and future litigation, see also the very interesting analysis by A. Guadamuz, "A Scanner Darkly: Copyright Liability and Exceptions in Artificial Intelligence Inputs and Outputs", GRUR Int. 2024 (forthcoming), available at: https://academic.oup.com/grurint/advance-article/doi/10.1093/grurint/ikad140/7529098?login=false

generative AI system learns how to produce novel literary and artistic output by imitating the style of human works. The machine-learning algorithm enables the generative AI system to generate literary and artistic content on its own – based on the computational analysis of human works that served as training material"[84]. In short, to produce a work "in the style of Picasso", the machine will need to be trained on a high number of existing works of Picasso. The better (and more comprehensive) the training will be, the better the results obtained[85]. This of course begs the question of how this training can be evaluated from a copyright perspective, in particular when the algorithm is "fed" with copyright protected works[86]. The answer is not easy, as until today no legislation has been passed to deal exactly with this situation. Therefore, one is left with the general principles of copyright law and with the existing rules that could apply to the situation.

Before taking a closer look at the European framework, it is worth having a look at how other jurisdictions might handle the tension between copyright and A.I. learning. In the US, it is generally considered[87] that text and data mining (TDM) which is at the core of the machine learning process falls under the fair use exception, based on the application by analogy of Authors Guild v. Google[88] and Authors Guild v. HathiTrust[89]. It has to be mentioned however that these decisions were issued before generative A.I. systems had bloomed. It is not excluded that the wide range of possible applications on a scalable level could lead US judges to another conclusion

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[84] M. Senftleben, "Generative AI and Author Remuneration", IIC 2023, Vol. 54, p. 1535, available at https://link.springer.com/article/10.1007/s40319-023-01399-4. For a comment and review, see C. Geiger, "To Pay or Not to Pay (for Training Generative AI), That is the Question", Jotwell Dec. 18, 2023, available at: https://ip.jotwell.com/to-pay-or-not-to-pay-for-training-generative-ai-that-is-the-question/

[85] A. Guadamuz, "A Scanner Darkly: Copyright Liability and Exceptions in Artificial Intelligence Inputs and Outputs", *supra* note 82: "The more data available the better the models, which translate into more accurate weights, which can then be used to produce better outputs. *See* on this issue in particular also A. Levendowski, "How Copyright Law Can Fix Artificial Intelligence's Implicit Bias Problem", Wash. L. Rev. 2018, Vol. 93, p. 579. In this respect, the author underlines that "copyright law causes friction that limits access to training data and restricts who can use certain data. This friction is a significant contributor to biased AI" (at p. 589)

[86] *See* on the issue A. Guadamuz, "A Scanner Darkly: Copyright Liability and Exceptions in Artificial Intelligence Inputs and Outputs", *supra* note 82; N. Lucchi, "ChatGPT: A Case Study on Copyright Challenges for Generative Artificial Intelligence Systems", European Journal of Risk Regulation 2023, p. 1, available at https://doi.org/10.1017/err.2023.59.

[87] P. Samuelson, "Text and Data Mining of In-Copyright Works: Is It Legal?", Communications of the ACM 2021, Vol. 64, Issue 1, p. 20; M.A. Lemley and B. Casey, "Fair Learning", Texas Law Review 2021, Vol. 99, Issue 4, p. 743; M. Carroll, "Copyright and the Progress of Science: Why Text and Data Mining Is Lawful", U.C. Davis L. Rev. 2019, Vol. 53, p. 893; C.J. Craig, "The AI-Copyright Challenge: Tech-Neutrality, Authorship, and the Public Interest", *supra* note 69 at p. 152.

[88] U.S. Court of Appeals for the Second Circuit, Authors Guild, Inc. v. Google, decision of 16 October 2015, No. 804 F.3d 202.

[89] U.S. Court of Appeals for the Second Circuit, Authors Guild, Inc. v. HathiTrust, decision of 10 June 2014, No. 755 F.3d 87.

when applying the fair-use test under U.S. copyright law. The fourth factor[90] of the fair-use analysis, which focuses on the effects on the market, seems to be the problematic point in the AI context, as direct competition that AI-generated works can have with those created by physical persons may lead to chilling effects on human creativity and the earnings of creators[91]. In the case of Authors Guild v. Google, Plaintiffs made three arguments why Google´s service should not be considered fair use. First, the plaintiffs contended that Google's service to provide digital copies of entire books, allowing users through the snippet function to read parts of the book, provides a substitute for Plaintiffs' work, which would negate the possibility of a fair use finding. Second, Authors Guild alleged Google to infringe their derivative rights in search functions, depriving Plaintiffs of revenues or other benefits they would gain from licensed search markets. Third, Google's storage of digital copies exposes Plaintiffs to the risk that hackers will make their books freely (or cheaply) available on the Internet, destroying the value of their copyrights. However, the Court rejected all of these arguments, main reason for which several scholars have argued that the use of copyrighted works to train the AI is likely to be considered fair-use under US law.[92] Nevertheless, scholars are closely monitoring several lawsuits against AI system producers in the US, as rightholders are claiming that these uses are unfair and therefore are not covered by the fair use exception of US Copyright law.[93] There are initial indications that the

[90] The four factors are listed in Section 107 of the 1976 U.S. Copyright Act.

[91] *See* more detailed on the issue of generative AI and fair use in the US: M. Sag, "Copyright Safety for Generative AI", Houston Law Review 2023, Vol. 62, Issue 2, p. 295; see also the overview from the Congressional Research Service, *see* C. Zirpoli, "Generative Artificial Intelligence and Copyright Law", 2023, available at https://crsreports.congress.gov/product/pdf/LSB/LSB10922.

[92] P. Samuelson, "Fair Use Defenses in Disruptive Technology Cases", UCLA L. Review 2024, Vol 71 (forthcoming); M.A. Lemley, "How Generative AI Turns Copyright Law on its Head", Colum. Sci. & Tech. L. Rev. 2024, (forthcoming); M. Sag, "The New Legal Landscape for Text Mining and Machine Learning", Journal of the Copyright Society of the USA 2019, Vol. 66, p. 291; M. Sag, "Copyright Safety for Generative AI", *supra* note 90; P. Henderson et al., "Foundation Models and Fair Use", 2023, p. 5, available at https://arxiv.org/abs/2303.15715; M.A. Lemley and B. Casey, "Fair Learning", *supra* note 86 at p. 748; B.L.W. Sobel, "Artificial Intelligence's Fair Use Crisis", Colum. J.L. & Arts 2017, Vol. 41, p. 45, 96.

[93] *See* e.g. in the US: Doe 1 et al v. GitHub et al., Case No. 4:2022cv06823 (N.D. Cal.); Andersen et al v. Stability AI et al., Case No. 3:23-cv-00201 (N.D. Cal.); Getty Images v. Stability AI, Case No. 1:2023cv00135 (D. Del.); Tremblay P. and Awad M. v. OpenAI INC. et al., Case No. 3:23-cv-03223 (N.D. Cal.), on this latter class action, *see* G. Campus, "Generative AI: the US Copyright class action against OpenAI", Kluwer copyright blog, 14 August 2023, and in UK: Getty Images v Stability AI, Case IL-2023-000007. More generally on these lawsuits *see* G. Frosio, "Generative AI in Court", in: N. Koutras and N. Selvadurai (eds.), "Recreating Creativity, Reinventing Inventiveness – International Perspectives on AI and IP Governance", Routledge, 2024 (forthcoming). See also the heavily commented lawsuit filed on Dec. 27, 2023, by the New York Times Company against Microsoft and OpenAI in front of the United States District Court Southern District of New York, Case No. 1:23-cv-11195, arguing that the AI companies' "unlawful use of The Times's work to create artificial intelligence products that compete with it threatens

rightholder lawsuits will not be successful. For example, a US District Court in a recent decision Andersen v. Stability AI Ltd dismissed most of the claims that images generated by the AI systems based on text prompts violated copyrights of the plaintiffs.[94] The various lawsuits taken in the U.S. will soon bring first elements on the legality of the use of works for ML purposes. It will be interesting to see if the upcoming U.S. caselaw will be influenced by the results in the EU or if the U.S. will focus on a completely different approach.

An illustrative instance of a maximalist approach can be seen in the recent legislative proposal unveiled in France on September 12, 2023[95]. This proposal suggests placing the machine learning process under the exclusive control of rightholders whose works are used in the ML process. Furthermore, it advocates for the attribution of authorship of the AI Generated output to all the authors which works have been used in the machine learning process. Additionally, it mandates labeling the resulting output as "AI-generated work" and listing the names of all authors whose works were utilized in the training process. Implementing such a measure would necessitate acknowledging a substantial number—potentially thousands or even millions—of authors, given the vast datasets that Generative AI commonly trains on. On top of being impracticable, this all-encompassing solution would likely have very detrimental consequences for the advancement of AI systems. It surely would lead in making any jurisdiction adopting such solution very unattractive for AI innovators in particularly start-ups who do not have the capacity to clear all the rights for the works used in the training process.

An AI-guideline proposal by the Japanese government from early June 2023 is heading to the complete opposite direction. The Japanese government released some of the world's first legal guidelines around

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The Times's ability to provide that service. Defendants'generative artificial intelligence ("GenAI") tools rely on large-language models ("LLMs") thatwere built by copying and using millions of The Times's copyrighted news articles, in-depthinvestigations, opinion pieces, reviews, how-to guides, and more" (…), and seek "to free-ride on The Times's massive investment in its journalism by using it to build substitutive products without permission or payment".

[94] United States District Court of Northern California, Case No. 23-cv-00201-WHO, 30 October 2023, available at https://drive.google.com/file/d/19oLqGeezldu1de366DMGrVYJsKXDgJS2/view. According to US District Court Judge William Orrick, the claims of copyright infringements were not enough substantiated: "Finding that the Complaint is defective in numerous respects, I largely GRANT defendants' motions to dismiss and defer the special motion to strike. Plaintiffs are given leave to amend to provide clarity regarding their theories of how each defendant separately violated their copyrights, removed or altered their copyright management information, or violated their rights of publicity and plausible facts in support".

[95] French National Assembly, Draft Law of the 12 September 2023, No. 1630, available at https://www.assemblee-nationale.fr/dyn/16/textes/l16b1630_proposition-loi.pdf. For a critical analysis see C. Geiger and V. Iaia, 'The Forgotten Creator: Towards a Statutory Remuneration Right for Machine Learning of Generative AI', *supra* note 27.

generative artificial intelligence imagery.[96] Although not implementing a new statutory regulation, the guidelines affirmed that machine learning engineers are allowed to use any data they can find, regardless of their copyright protection.[97] Japan had already implemented one of the most liberal laws in 2018, allowing the free use of copyrighted works for training machine learning models as long as the purpose "is not for enjoying or causing another person to enjoy the ideas or emotions expressed in such work."[98] This new guideline is based on a much broader understanding of this law, allowing to use any data "regardless of whether it is for non-profit or commercial purposes, whether it is an act other than reproduction, or whether it is content obtained from illegal sites or otherwise."[99]

In the European Union, when having a look on the current legal provisions, since AI systems learn from datasets using the technique of Text and Data Mining (TDM), the most obvious provisions to be scrutinized in this respect are the newly introduced limitations and exceptions for Text and Data Mining-purposes in the directive of 17 April 2019 on Copyright in the Digital Single Market (CDSM-Directive). Article 3 introduces an exception for text and data mining for scientific research which solely benefits research organisations and cultural heritage institutions while Article 4, introduced later in the elaboration process of the directive, is not restricted to specific institutions, and therefore could be relevant in the context of AI as these systems are usually operated by private commercial companies not covered by article 3. According to Article 4(1), "Member States shall provide for an exception of limitation (…) for reproductions and extractions of lawfully accessible works and other subject matter for the purposes of text and data mining". Interestingly, according to Art. 4(2), "reproductions and extractions made pursuant to paragraph 1 may be retained for as long as

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[96] *See* the presentation by the Agency for Cultural Affairs (in Japanese), available at https://www.bunka.go.jp/seisaku/chosakuken/pdf/93903601_01.pdf.

[97] "In principle, analysis of information for the purpose of AI development is possible without permission, according to the right limitation provision.", s*ee* the presentation by the Agency for Cultural Affairs, *supra* note 95 at p. 61 (translated by the author).

[98] Article 30-4 of the Japanese Copyright Act, translation by T. Ueno, "The Flexible Copyright Exception for 'Non-Enjoyment' Purposes – Recent Amendment in Japan and Its Implication", GRUR Int. 2021, Vol. 70, Issue 2, p. 148; For a closer look on the TDM exceptions in Japanese Copyright Law *see* also A. Dermawan, "Text and data mining exceptions in the development of generative AI models: What the EU member states could learn from the Japanese "non enjoyment" purposes?", The Journal of Intellectual Property 2023, Vol. 26, Issue 3, p. 1 sq.

[99] *See* statement by the Minister of Education, Culture, Sports, Science and Technology Nagaoka, available at https://go2senkyo.com/seijika/122181/posts/685617; For the broad media response, see for example https://technomancers.ai/japan-goes-all-in-copyright-I-apply-to-ai-training/; https://restofworld.org/2023/japans-new-ai-rules-favor-copycats-over-artists/; https://www.reuters.com/technology/japan-leaning-toward-softer-ai-rules-than-eu-source-2023-07-03/; https://www.natlawreview.com/article/japanese-government-identified-issues-related-ai-and-copyrights#:~:text=Do%20Inputs%20to%20AI%20Infringe,not%20unreasonably%20harm%20creators'%20interests.

is necessary for the purposes of text and data mining", which could be of relevance to solve any possible question of storage of protected works by the AI in the learning process. However, the usefulness of this provision might be rather limited by the third paragraph of Article 4, which conditions the application of the exception to the fact that the use of works and other subject matters "has not been expressly reserved by their rightholders in an appropriate manner, such as machine-readable means in the case of content made publicly available online". In short, rightholders can "opt out" of the exception, which potentially can make the provision rather ineffective if there is a high number of rightholders that are doing so[100]. A lot has been written on the lack of ambition of the provisions on text and data mining, and it is not the place here to discuss them at length[101]. These exceptions faced strong criticism for insufficiently taking into account the importance of TDM in many sectors, in particular with regard to the development of AI activities in the EU[102], while other regions of the world have more flexible

[100] For example, in France, the SACEM (Société des auteurs, compositeurs et éditeurs de musique), the major collective management organization for music, announced that it will exercise the opt-out on behalf of all its 200.000 members, making it probable that other collective management organizations in France and other European countries will follow the same path. *See* "Pour une intelligence artificielle vertueuse, transparente, et équitable: la Sacem exerce son droit d'opt-out", 12 October 2023, available at https://createurs-editeurs.sacem.fr/actualites-agenda/actualites/la-sacem-et-vous/pour-une-intelligence-artificielle-vertueuse-transparente-et-equitable-la-sacem-exerce-son-droit.
Since then, the French collecting society SAIF, collective management organization in the field of visual arts and images, has announced it will do the same, https://saif.fr/site/assets/files/120435/saif_droit_dopposition.pdf

[101] *See* in this regard C. Geiger, G. Frosio and O. Bulayenko, "The Exception for Text and Data Mining (TDM) in the Proposed Directive on Copyright in the Digital Single Market – Legal Aspects", Study for the Directorate-General for Internal Policies of the Union, Department of Citizens' Rights and Constitutional Affairs, European Parliament, February 2018, available on SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3160586. For a critical evaluation of the Directive proposal, *see* also C. Geiger, G. Frosio and O. Bulayenko, "Text and Data Mining in the Proposed Copyright Reform: Making the EU Ready for an Age of Big Data?", IIC 2018, Vol. 49, Issue. 7, p. 814, and from the same authors: "The EU Commission's Proposal to Reform Copyright Limitations: A Good but Far Too Timid Step in the Right Direction", EIPR 2018, Vol. 40, Issue 1, p. 4; European Copyright Society, "General Opinion on the EU Copyright Reform Package", 24 January 2017, p. 5; R.M. Hilty and H. Richter, in: R.M. Hilty and V. Moscon (eds.), "Modernisation of the EU Copyright Rules, Position Statement", MPI for Innovation and Competition Research Paper No. 17-12, p. 25 et sq.

[102] *See* C. Geiger, "The Missing Goal-Scorers in the Artificial Intelligence Team: Of Big Data, the Fundamental Right to Research and the failed Text and Data Mining Limitations in the CSDM Directive", in: M. Senftleben, J. Poort, M. van Eechoud, S. van Gompel, N. Helberger (eds.), "Intellectual Property and Sports, Essays in Honour of P. Bernt Hugenholtz", Kluwer Law International, 2021, p. 383 sq.; C. Geiger, G. Frosio and O. Bulayenko, "Crafting a Text and Data Mining Exception for Machine Learning and Big Data in the Digital Single Market", in: X. Seuba, C. Geiger and J. Pénin (eds.), "Intellectual Property and Digital Trade in the Age of Artificial Intelligence and Big Data", 2018, Issue 5, p. 95. For a (critical) analysis *see* also P.B. Hugenholtz, "The New Copyright Directive: Text and Data Mining (Articles 3 and 4)", Kluwer Copyright Blog, 24 July 2019, available at
http://copyrightblog.kluweriplaw.com/2019/07/24/the-new-copyright-directive-text-and-dat

approaches in their system of existing limitations[103].

In any case, what needs to be emphasized here is that the TDM exceptions were not designed to cover machine learning by generative AI systems, meaning AI systems that can produce new works based on the learning from other existing works[104]. This emerges very clearly from the preparatory works of the Directive, where the issue of generative AI and

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a-mining-articles-3-and-4/; C. Geiger, G. Frosio and O. Bulayenko, "Text and Data Mining: Articles 3 and 4 of the Directive 2019/790/EU", in: C. Saiz Garcia and R. Evangelio Llorca (eds.), "Propiedad intelectual y mercado único digital europeo", Tirant lo Blanch, 2019, p. 27; M. Kop, "The Right to Process Data for Machine Learning Purposes in the EU", Harvard Journal of Law & Technology 2021, Vol. 34, Issue 1, p. 7; European Copyright Society, "Comment of the European Copyright Society Addressing Selected Aspects of the Implementation of Articles 3 to 7 of Directive (EU) 2019/790 on Copyright in the Digital Single Market", 3 May 2022, available at https://europeancopyrightsocietydotorg.files.wordpress.com/2022/05/ecs_exceptions_final-3.pdf.; M. Senftleben, "Compliance of National TDM Rules with International Copyright Law – An Overrated Nonissue?", IIC 2022, Vol. 53, Issue. 10, p. 1477 sq.; T. Margoni and M. Kretschmer, "A Deeper Look into the EU Text and Data Mining Exceptions: Harmonisation, Data Ownership, and the Future of Technology", GRUR Int. 2022, Vol. 71, Issue 8, p. 685; R. Ducato and A. Strowel, "Limitations to text and Data Mining and Consumer Empowerment: Making the Case for a Right to 'Machine Legibility'", IIC 2019, Vol. 50, Issue 6, p. 649 sq. With a similar conclusion for South America, *see* M. Jackson Bertón, "Text and Data Mining Exception in South America: A Way to Foster AI Development in the Region", GRUR Int. 2021, Vol. 70, Issue 12, p. 1145.

[103] *See* J. Drexl, R.M. Hilty, et al., "Artificial Intelligence and Intellectual Property Law, *supra* note 78: "The system of copyright exceptions and limitations, as harmonized under the InfoSoc Directive and the Digital Single Market Directive, is not flexible enough to enable the use of IP-protected subject-matter for the purpose of developing AI systems". *See* for example for the US and the potential legality of machine learning under the fair use doctrine M. Sag, "The New Legal Landscape for Text Mining and Machine Learning", *supra* note 90; M. Carroll, "Copyright and the Progress of Science: Why Text and Data Mining Is Lawful", *supra* note 86; P. Samuelson, "Text and Data Mining of In-Copyright Works: Is It Legal?", *supra* note 86 at p. 20 sq; M. A. Lemley and B. Casey, "Fair learning", *supra* note 86 at p. 743, stating however it is not clear that the use of databases (which include copyrighted works) in machine learning processes that generate new outputs "will be treated as a fair use under current law. Fair use doctrine in the last quarter century has focused on the transformation of the copyrighted work. Ais aren't transforming the databases they train on; they are using the entire database, and for a commercial purpose at that. Courts may view that as a kind of free riding they should prohibit". Thus, even if TDM could qualify as a "fair use" in the past, it remains uncertain if the use of copyrighted works via machine learning in generative AI processes will be allowed under the fair use doctrine (*see* also more detailed on the issue of generative AI and fair use in the US: M. Sag, "Copyright Safety for Generative AI", *supra* note 90). For Japan, *see* T. Ueno, "The Flexible Copyright Exception for 'Non-Enjoyment' Purposes – Recent Amendment in Japan and Its Implication", *supra* note 97 at p. 145. However, the exception introduced in Japanese Law in 2019 seemed also not have been taking into account generative AI training situations.

[104] *See* in this sense also J. Nordemann and J. Pukas, "Copyright exceptions for AI training data—will there be an international level playing field?", Journal of Intellectual Property Law & Practice 2022, Vol. 17, Issue. 12, p. 974: "One thing is certain: there is no provision in the Directive that expressly deals with the training of AI and the copyright-related aspects"; P. Mezei, "A saviour or a dead end? Reservation of rights in the age of generative AI" available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4695119.

TDM exceptions is absent and has obviously been overlooked. It is thus rather surprising that the Commission considers that the existing legislative framework is perfectly fit for the purpose and that "creation of art works by AI does not deserve a specific legislative intervention", since the TDM exceptions with their possibility of opt-out apply, "providing balance between the protection of rightholders including artists and the facilitation of TDM, including by AI developers"[105]. The "AI Act" in its latest version adopted by the European Parliament on 13 March 2024 seems to echo that position when imposing obligations on providers of general-purpose AI models to "put in place a policy to comply with Union copyright law, 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"[106]. This regulation further introduces transparency obligations for AI developers with regard to the works used in the training process[107]. The vibrant public debate generated by the use of existing works by AI systems for the purpose of generating new ones together with the tremendous economic and societal impacts that these technologies will have on the life of all citizens seem to indicate that the discussion is not over. In fact, these developments call for another future

[105] Answer given on 31 March 2023 by Commissioner Breton on Behalf of the European Commission (Parliamentary written question for written answer, E-000479/2023, posed on 15 February 2023 "How does the Commission plan to regulate this use of AI, which harms artists and rights holders?"), available at https://www.europarl.europa.eu/doceo/document/E-9-2023-000479-ASW_EN.html.

[106] European Parliament legislative resolution of 13 March 2024 on the proposal for a regulation of the European Parliament and of the Council on laying down harmonized rules on Artificial Intelligence (Artificial Intelligence Act) and amending certain Union Legislative Acts (COM(2021)0206 – C9-0146/2021 – 2021/0106(COD)), Art. 53, 1 c). See also Recital 105, stating that the "Directive (EU) 2019/790 introduced exceptions and limitations allowing reproductions and extractions of works or other subject matter, for the purpose of text and data mining, under certain conditions. Under these rules, rightsholders may choose to reserve their rights over their works or other subject matter to prevent text and data mining, unless this is done for the purposes of scientific research. Where the rights to opt out has been expressly reserved in an appropriate manner, providers of general-purpose AI models need to obtain an authorisation from rightsholders if they want to carry out text and data mining over such works". For a comment see B. de Champris, "Artificial Intelligence and Copyright: The EU Should Preserve the Copyright Directive's Delicate Balance to Safeguard and Promote Innovation", AIRe 2024, Vol. 1, p. 113.

[107] See Art. 53, 1 d) according to which providers of general-purpose AI models shall "draw up and make publicly available a sufficiently detailed summary *about the content used for training of the general-purpose AI model*, according to a template provided by the AI Office" (emphasis added). This resolution follows a provisional agreement reached by the Council presidency and the European Parliament's negotiators on 8 Dec. 2023. On the agreement *see* P. Keller, "A first look at the copyright relevant parts in the final AI Act compromise", Kluwer Copyright Blog, 11 Dec. 2023, at: https://copyrightblog.kluweriplaw.com/2023/12/11/a-first-look-at-the-copyright-relevant-parts-in-the-final-ai-act-compromise/ For a comment of the copyright aspects envisaged in the "AI Act", *see* J.P. Quintais, "Generative AI, Copyright and the AI Act", 9 May 2023, available at https://copyrightblog.kluweriplaw.com/2023/05/09/generative-ai-copyright-and-the-ai-act/.

transparent legislative intervention, as it is hard to imagine that these crucial questions could be settled by legislative provisions that were not designed for this purpose. As we have seen, in various jurisdictions, lawsuits have been introduced to challenge the legality of the use of existing works to train AI systems and the first decisions are expected soon, which could also affect the future legal framework for Generative AI at global level[108]. A certain degree of international harmonization will then be needed in order to avoid that AI developers are excessively penalized in the EU context, in particular if the uses of copyrighted works for training purposes should be considered in certain jurisdictions to be falling under the fair use provision or other exceptions and limitations to copyright law, thus opening the way for a possible international legal intervention in fora such as WIPO and/or the WTO. In any case, such crucial developments should lead to informed legislative interventions following an open, evidence-based transdisciplinary debate on the economic and societal merits of various legal interventions[109].

Therefore, it is necessary to reflect on possible solutions in this context, as it seems evident that the existing legal framework is not easily adaptable to deal with such an important societal question as the use of existing protected works by AI systems. Fundamental philosophical questions are at stake, in particular what should be the place in the future of creators in a world where works can be created quickly and at rather low costs by AI systems. As the AI is trained with already existing works, how to then incentivize break-through creativity, news trends, new genres, disruptive art that break with the existing?

V. Towards a new limitation-based remuneration right to the benefit of creators for machine learning of generative AI

It is surely not the place here to propose a final "ready- to-go" solution to the issue. A future regulation of AI, as we have already stated above, needs to build on a societal consensus which requires a pluridisciplinary assessment to reach informed consent. Some preliminary thoughts can however already be shared. First, applying Article 4 CDSM and its "opt out"-mechanism to generative AI is not a satisfying solution if we do not want to inhibit the development of this technology and thus make Europe totally unattractive for AI developers[110]. Not only the provision carries a lot

[108] For an overview over the ongoing cases *see supra* note 92.

[109] Certainly, adding in the last stage of a regulatory process provisions on copyright issues that themselves refer to a legal framework that was not meant to settle these questions, as done recently in the "AI Act", is not the right way forward. Indeed, it has to be noted indeed that the proposal for Regulation introduced by the European Commission on 21 April 2021 did not include any provision on copyright law and that the "AI Act" initially was not meant to deal with these issues; See the Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain, Union Legislative Acts, COM(2021) 206 final.

[110] *See* in this sense also M. Senftleben, "Generative AI and Author Remuneration", *supra* note 83.

of uncertainties[111] (when exactly is a content online "lawfully available" to use? How exactly to exercise the opt-out, or said differently, what is "an appropriate reservation by machine readable means"? And who should be able to decide about this, the author or its derivative rightholder?), but seems obvious that the opt-out will be used as a new bargaining power to license the use of existing works for training purposes[112]. Given that generative AI systems are trained on an immense number of works to be efficiently working, this would quickly turn out to be a licensing nightmare for every AI developer in order to get all the relevant authorizations, and in fact strongly privileges the tech giants over any start-up innovators as only the formers will have the means to engage in costly licensing on such large scale[113]. Also, one should be wary of the fact that the author will not necessarily benefit directly from this situation as it will likely be the big rightholders that will license the uses, with the authors having to (re)negotiate successfully with their producers to get additional remunerations, which is not always an easy task[114].

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[111] More detailed in this sense P. Mezei, "A saviour or a dead end? Reservation of rights in the age of generative AI", *supra* note 103.

[112] This seems confirmed by Recital 105 of the "AI Act" in its latest version adopted by the European Parliament on 13 March 2024 (see note 105).

[113] *See* in this sense J. Vesala, "Developing Artificial Intelligence-Based Content Creation: Are EU Copyright and Antitrust Law Fit for Purpose?", IIC 2023, Vol. 54, Issue 5, p. 351; C.J. Craig, "The AI-Copyright challenge: tech neutrality, authorship and the public interest", *supra* note 70 at p. 152, underlining that "given the sheer volume of text and data mined to effectively train a sophisticated AI, limiting or foreclosing the use of copyright-protected works in such processes in the absence of permission from the right holder places an enormous burden on AI-research and development. Moreover, it produces de facto barriers to certain kind of AI projects, differentially disadvantages anything but the most well-resourced AI researchers and exacerbates the built-in biases and discriminatory effects of AI systems"; M. Kretschmer, T. Margoni, and P. Oruc, "Copyright law, and the lifecycle of machine learning models", International Review of Intellectual Property and Competition Law 2024, forthcoming, available at https://doi.org/10.1007/s40319-023-01419-3, according to whom "a fully copyright licensed environment of machine learning that may have problematic effects for industry structure, innovation and scientific research; C. Novelli, F. Casolari, P. Hacker, G. Spedicato & L. Floridi, "Generative AI in EU Law: Liability, Privacy, Intellectual Property, and Cybersecurity", 14 Jan. 2024, p. 18, available at ssrn: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4694565: "The extensive scale of the datasets used and, consequently, the significant number of right-holders potentially involved render it exceedingly difficult to envision the possibility that those training LLMs could seek (and obtain) an explicit license from all right holders. This issue becomes particularly evident when, as often occurs, LLM training is carried out using web scraping techniques".

[114] For some interesting additional reflections on why authors would lose-out in such a scenario, *see* K. Trendacosta and C. Doctorow, "AI Art Generators and the Online Image Market", 3 April 2023, available at https://www.eff.org/deeplinks/2023/04/ai-art-generators-and-online-image-market.
Proposing however a consensus-based remuneration system in the Asian context, see A. Dermawan and P. Mezei, "Artificial Intelligence and Consensus-Based Remuneration Regime in Southeast Asia", 7 Nov. 2023, available at ssrn: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4625850

Therefore, it might be interesting to reflect on a possible statutory remuneration to the benefit of the author for the use of his works in the context of TDM activities for generative-AI purposes[115]. In previous writings, we had proposed to replace the opt-out of article 4 CDSM by a statutory remuneration for commercial TDM activities[116], in order not to

[115] *See* already C. Geiger "When the Robots (try to) Take Over: Of Artificial Intelligence, Authors, Creativity and Copyright Protection", in: F. Thouvenin, A. Peukert, T. Jäger and C. Geiger (eds.), "Innovation- Creation- Markets, Festschrift Reto M. Hilty", Springer, 2024 (forthcoming); C. Geiger and V. Iaia, "The Forgotten Creator: Towards a Statutory Remuneration Right for Machine Learning of Generative AI", *supra* note 27; in the context of the use of journalistic content *see* C. Geiger and B.J. Jütte, "Designing Digital Constitutionalism: Copyright Exceptions and Limitations as a Regulatory Framework for Media Freedom and the Right to Information Online", in: M. Senftleben et al. (eds.), "Cambridge Handbook of Media Law and Policy in Europe", Cambridge University Press, 2024 (forthcoming); G. Frosio, "Should We Ban Generative AI, Incentivise It or Make it a Medium for Inclusive Creativity", in: E. Bonadio and C. Sganga (eds.), "A Research Agenda for EU Copyright Law", Edward Elgar, 2024 (forthcoming). For a similar proposal in its spirit, *see* M. Senftleben, "Generative AI and Author Remuneration", *supra* note 83 at p. 14. In his model, the statutory remuneration would however not be on the TDM use of protected works for AI machine learning purposes, but it is "the literary and artistic output of generative AI systems" that serves "as a reference point for a legal obligation to pay remuneration". According to the author, focusing on an "output-oriented AI levy system can be applied in a uniform manner to all providers of generative AI systems in the EU. In contrast to a remuneration obligation focusing on the input dimension and AI training activities, the output-oriented levy approach avoids the risk of disadvantages for EU high-tech industries. All providers of generative AI systems are equally exposed to the levy payment obligation the moment they offer their products and services in the EU". To counter legal/doctrinal concerns and to give theoretical support to the proposal, Senftleben makes useful reference to the theory of the domain public payant. If we agree with the outcome of this innovative proposal, in our view, an input-based remuneration system caries however significant advantages. First, it gives legal certainty to AI developers as the training of AI with protected works lies still in the grey zone with regard of its legality, in the EU but also outside: the numerous lawsuits in the US challenging the legality of the use of copyrighted work to train AI demonstrates this. Ultimately, it is not certain that the courts in the US (where the majority of cases are pending) will consider the machine learning activities as a "fair use". In any case, this will surely be a long judicial battle, carrying some uncertainties for the small economic players, before a consistent case law is established under the fair use doctrine. Should the courts declare the use unfair on the contrary, this would put the EU developers in a competitive advantage as a remuneration right is always preferable then having to clear all the authorizations. The second argument in favor of a remunerated exception is certainly that it is very much compatible with the European tradition of remunerated exceptions and that there is an established practice and case law with regard to the distribution rules in favor of creators of these kind of remunerations via collective management organisations. Finally, the idea of the domaine public payant, if admittedly appealing in theory, might not benefit from a broad support; at policy level it could be more difficult to draw consensus on a proposal based on a paid public domain. Advocates of a robust public domain might be favorable towards ameliorating the remuneration situation of creators, less towards the idea of a domaine public payant.

[116] Such as for example TDM brokers, proposing TDM searches on specific subjects to their customers against remuneration. It is likely that these new services will increase in the future, and it could be considered that these commercial TDM activities might be subject to payment of a statutory remuneration.

penalize start-ups developing useful AI systems in the EU[117]. It needs to be recalled that AI systems cannot function without text and data mining and therefore if we want to incentivize AI activities in the EU, TDM exceptions are crucial. This certainly does not mean that all the uses should be free in all circumstances and in the EU, there is a vast experience with the "permitted-but-paid"[118] model of remunerated limitations and exceptions (or, to use another terminology, "limitation-based remuneration rights")[119].

Thus, in analogy with the idea of a commercial TDM activity, a specific remuneration right to the direct benefit of creators could be elaborated for the use of their work to train machines[120], possibly subjecting this right to mandatory collective management to make sure it can be rapidly implemented (in the context of the exception for private copy for example, large sums are collected and redistributed by collective management organizations to creators for the use of their works for private purposes, via a relatively well functioning levy system[121]). In this context, it would also

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[117] *See* the proposal in this sense C. Geiger, G. Frosio and O. Bulayenko, "Text and Data Mining in the Proposed Copyright Reform: Making the EU Ready for an Age of Big Data?", *supra* note 100 at p. 838.

[118] For this terminology *see* J.C. Ginsburg, "Fair Use for Free, or Permitted-but-Paid?", Berkeley Technology Law Journal 2014, Vol. 29, Issue 3, p. 1446.

[119] *See* C. Geiger, "Promoting Creativity through Copyright Limitations, Reflections on the Concept of Exclusivity in Copyright Law", Vanderbilt Journal of Entertainment & Technology Law 2010, Vol. 12, Issue 3, p. 515 sq.; C. Geiger and O. Bulayenko, "Creating Statutory Remuneration Rights in Copyright law: What Policy Options under the International Framework?", in: H. Grosse Ruse-Khan and A. Metzger (eds.), "Intellectual Property Ordering Beyond Borders", Cambridge University Press 2022, p. 408 sq. (at 446); C. Geiger, F. Schönherr and B.J. Jütte, "Limitation-based remuneration rights as a compromise between access and remuneration interests in copyright law: what role for collective rights management?", in: D. Gervais and J.P. Quintais (eds.), "Collective Management of Copyright and Related Rights", 4th ed., Kluwer Law International, 2024 (forthcoming).

[120] For such a proposal in the context of machine learning *see* C. Geiger, "The Missing Goal-Scorers in the Artificial Intelligence Team: Of Big Data, the Fundamental Right to Research and the failed Text and Data Mining Limitations in the CSDM Directive", *supra* note 101 at p. 392, in particular note 33. *See* also M. Kop, "The Right to Process Data for Machine Learning Purposes in the EU", *supra* note 101 at p. 7, proposing "the creation of an online one-stop-shop clearinghouse with mandatory or statutory licensing for machine learning training datasets alike a pan-European, multi-territorial collective rights agency". More generally on the advantages of statutory licenses *see* R.M. Hilty, "Verbotsrecht vs. Vergütungsanspruch: Suche nach Konsequenzen der tripolaren Interessenlage im Urheberrecht", in A. Ohly, M. Lehmann, T. Bodewig and T. Dreier (eds.), "Perspektiven des Geistigen Eigentums und Wettbewerbsrechts. Festschrift für Gerhard Schricker zum 70. Geburtstag", C.H. Beck, 2005, p. 325 sq.; C. Geiger, "Promoting Creativity through Copyright Limitations, Reflections on the Concept of Exclusivity in Copyright Law", *supra* note 118 at p. 527, underlining i.a. that the earnings resulting from these rights can be in many cases much more interesting for authors than the royalty payments they receive from contracting parties resulting from their exclusive entitlements.

[121] Exploring limitation-based remuneration rights and/or mandatory collective management as a compromise solution also in the context for Generative AI, see C. Geiger, F. Schönherr and B.J. Jütte, "Limitation-based remuneration rights as a compromise between access and remuneration interests in copyright law: what role for collective rights management?", *supra* note 118. According to a study done by de Thuiskopie and WIPO,

make great sense to differentiate with regard to the purpose of the use and the works used in the machine learning process[122].

Of course, the amount of the remuneration to be paid needs to be monitored closely (and preferably independently[123]) in order not to create a significant hurdle for start-ups and AI developers to engage in this activity, which could be adjusted with regard to the economics of this sector and the potential losses which could occur to the original creator (intuitively, but this would need to be verified by empirical studies, training AI on highly successful works on the market will create outputs that are likely to be commercially more successful, such as a song in "the style of" a renowned artist). Also, and this should not be forgotten, authors already use (and might increasingly use in the future) AI in their creative process as a tool for creativity, such as digital art uses software or even more classically photography uses cameras and filters. Opposing systematically AI systems and authors might not be a wise idea as they might very well cohabitate in the future and support each other[124].

"International Survey on Private Copying", 2016, pp. 15-17, approx. 600 million euros per year was the average amount of private copying levies collected between 2007 and 2015 in 31 countries across the world covered by the survey. These global collections of private copying levies for all rights holders since raised, according to a more recent study, totaling EUR 1,046 million in 2018 (CISAC, BIEM & Stichting de Thuiskopie, "Private Copying Global Study 2020", Nov. 2020, p. 8). They are a particular important revenue source in Europe, where private copying remuneration systems amount for 1,019.4 million euros per year. For the EU *see* also M. Kretschmer, "Private Copying and Fair Compensation: An empirical study of copyright levies in Europe", UK Intellectual Property Office, 2011, p. 7: "Following the Directive of 2001, total collection from levies on copying media and equipment in the EU tripled, from about €170m to more than €500m per annum". Admittedly, these remunerations currently benefit both rightholders and authors, but nothing would prevent to increase the share for creators and even to allocate the sums to them exclusively in the future in the context of a limitation-based remuneration for machine learning purposes.

[122] In this spirit, *see* J. Love, "We Need Smart Intellectual Property Laws for Artificial Intelligence", Scientific American, 7 August 2023, available at https://www.scientificamerican.com/article/we-need-smart-intellectual-property-laws-for-artificial-intelligence/: "As laws and regulations emerge, care should be exercised to avoid a one-size-fits-all approach, in which the rules that apply to recorded music or art also carry over to the scientific papers and data used for medical research and development". Research uses benefit from a strong fundamental rights justification and might be treated differently (*see* C. Geiger and B.J. Jütte, "Conceptualizing a 'Right to Research' and its Implications for Copyright Law, An International and European Perspective", *supra* note 29); the statutory remuneration solution for machine learning however might avoid many of the blocking issues that could emerge if these uses were submitted to the exclusive right (in the EU, the TDM uses by research organisations are already exempted by Art 3 TDM). What is evident however is that machine learning for research purposes should not be subjected to exclusive control of publishers. As J. Love rightly points out, "it's one thing to have the copyright holder of a popular music recording opt out of a database; it's another if an important scientific paper is left out over licensing disputes".

[123] This could be for example done by a new EU independent copyright institution to be created, *see* in this sense C. Geiger and N. Mangal, "Regulating Creativity Online: Proposal for an EU Copyright Institution", GRUR Int. 2022, Vol. 71, Issue 10, p. 933.

[124] *See* in this sense a recent study of the University of Oxford entitled 'AI and the Arts: How Machine Learning is Changing Artistic Work', where the scope of human/AI creative

Maybe the AI discussion could also be a good opportunity to reflect more generally on specific remunerated exception for creative reuse that could englobe creative reuses of protected content, as in the digital environment (in particular, but it is also valid in the analog world) creators have increasingly incorporated protected elements in their creative process (sampling being a good example)[125]. Of course, there might still be situations where the reuse of the work (by an AI or not) leads to unwanted results. If an AI is trained with protected works to issue outputs that are offensive, explicitly unwanted or carry inappropriate messages (racist, discriminatory, etc), there should be room for authors to oppose that, but this could be dealt- as already discussed supra- with as a moral right issue and not prejudice any practical but fair solution under the economic rights[126]. The situation would not be radically different from a traditional moral rights violation, especially if the original work is recognizable[127].

CONCLUSION AND OUTLOOK

As we have seen, the development of AI generates a lot of questions[128].

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complementarity is examined through interview-based case studies of the use of current AI techniques by creators of artistic works. The authors of the study conclude that "despite the increased affordances of machine learning technologies, the relationship between artists and their media remained essentially unchanged, as artists ultimately work to address human—rather than technical— questions" (A. Ploin, R. Eynon, I. Hjorth and M.A. Osborne, "AI and the Arts: How Machine Learning is Changing Artistic Work", Report from the Creative Algorithmic Intelligence Research Project, Oxford Internet Institute, University of Oxford, 2022, available at https://www.oii.ox.ac.uk/wp-content/uploads/2022/03/040222-AI-and-the-Arts_FINAL.pdf).

[125] *See* detailed on this proposal C. Geiger, "Freedom of Artistic Creativity and Copyright Law: A Compatible Combination?", UC Irvine Law Review 2018, Vol. 8, Issue 3, p. 413; C. Geiger, "Statutory Licenses as Enabler of Creative Uses", in: K.-C. Liu and R.M. Hilty (eds.), "Remuneration of Copyright Owners, Regulatory Challenges of New Business Models", Springer, 2017, p. 305 sq.

[126] For moral rights issues raised by machine learning processes *see* J. Drexl, R.M. Hilty, et al., "Artificial Intelligence and Intellectual Property Law", *supra* note 78 at p. 12, stating in particular that "the right to integrity can pose limitations to the training and to the creation of outputs by AI, namely, regarding the processing of protected works".

[127] Freedom of expression is not unlimited and moral rights can step in when a derivative work is offensive. *See* on this issue, C. Geiger and E. Izyumenko, "Designing a Freedom of Expression-Compliant Framework for Moral Rights in the EU: Challenges and Proposals", *supra* note 33.

[128] *See*, from a US copyright perspective, M.A. Lemley, "How Generative AI Turns Copyright Law on its Head", 21 July 2023, available on SSRN: https://ssrn.com/abstract=4517702. *See* also in this sense the Memorandum Opinion of Judge Howell in its decision of August 18, 2023, in Thaler v. Perlmuter et al., *supra* note 7: "Undoubtedly, we are approaching new frontiers in copyright as artists put AI in their toolbox to be used in the generation of new visual and other artistic works. The increased attenuation of human creativity from the actual generation of the final work will prompt challenging questions regarding how much human input is necessary to qualify the user of an AI system as an "author" of a generated work, the scope of the protection obtained over the resultant image, how to assess the originality of AI-generated works where the systems

How profoundly it will affect our lives – and in particularly creativity and the cultural ecosystems- remains to be seen. However, this is not the first -radical- technological (r)evolution that Mankind has faced. The legal system- and in particularly the copyright system- (more or less) always managed to adapt[129]. In any case, as in the past, the underlying human rights framework gives guidance and offers a workable compass in navigating reforms of the current copyright system with regards to generative AI systems[130]. What is certain is that AI invites a much deeper reflection than the question of the copyright issues of AI-generated works; and while lawyers are certainly concerned (as law frames the society we live in), possible future solutions should mostly be taken according to economic, philosophical, technological, artistic and ethical considerations[131]. Certainly, we are only at the beginning of an evolution. For now, as we have seen in this contribution, the copyrightability of AI-generated outputs is to be considered with outmost care[132] and, as it follows from a

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may have been trained on unknown pre-existing works, how copyright might best be used to incentivize creative works involving AI, and more".

[129] See in this sense K. Crawford and J. Schultz, "The Work of Copyright Law in the Age of Generative AI", Grey Room 2024, No. 94, p. 56, available at https://direct.mit.edu/grey/article-abstract/doi/10.1162/grey_a_00389/119006/The-Work-of-Copyright-Law-in-the-Age-of-Generative?redirectedFrom=fulltext: "In prior centuries, when new technologies such as the photograph, the sound recording, the computer processor, and the data server emerged, copyright adapted, creating odd and sometimes contorted doctrines to account for the epistemic challenges that each technology posed to the questions What is art? and Who creates it?". However, according to these authors, Generative AI is different and will likely lead to a much more profound crisis and destabilization of copyright law.

[130] See in this sense but more broadly also the United Nations Human Rights Office of the High Commissioner, "Advancing Responsible Development and Deployment of Generative AI, The value proposition of the UN Guiding Principles on Business and Human Rights, A UN B-Tech Foundational Paper, Nov. 2023, p. 5, according to which "impacts on internationally agreed human rights should be the focus of State and company action to advance the responsible development and deployment of generative AI technologies" (available at https://www.ohchr.org/sites/default/files/documents/issues/business/b-tech/advancing-responsible-development-and-deployment-of-GenAI.pdf). See also in this sense M. Rotenberg, "Human Rights Alignment: The Challenge Ahead for AI Lawmakers", in: H. Werthner, C. Ghezzi, J. Kramer, J. Nida-Rümelin, B. Nuseibeh, E. Prem, A. Stanger (eds), "Introduction to Digital Humanism", A Textbook, Springer, 2024, p. 611: "we should consider whether the evolving models for the governance of AI are aligned with the legal norms that undergird democratic societies—fundamental rights, democratic institutions, and the rule of law".

[131] See in this sense the interesting reflections by G. Hasselbalch, "Data Ethics of Power, A Human Approach in the Big Data and AI Era", Edward Elgar Publishing, 2021, p. 1, proposing to "find a common ground for debates on the development and status of big data and AI sociotechnical environments by spelling out a 'human approach'", which the author refers to as a 'data ethics of power'. "A data ethics of power is concerned with making visible the power relations embedded in big data and AI sociotechnical infrastructures in order to point to design, business, policy, social and cultural processes that support a human-centric distribution of power".

[132] *See* also H. Sun, "Redesigning Copyright Protection in the Era of Artificial Intelligence", 107 Iowa L. Rev. 2022, p. 1217, according to whom "AI works generated

fundamental/human rights perspective, only when AI is used as a technical tool for creators in their creation process- meaning when they can serve a human author. However, we need also to be careful that the development of AI systems is not inhibited as it can have a lot of beneficial aspects if it is appropriately regulated[133]. Thus, we have proposed to replace the opt-out mechanism of Article 4 CDSM by a TDM exception for creative purposes coupled with a statutory remuneration to the benefit of authors only, in coherence with a proposal tabled in the past of a statutory remuneration for creative uses[134]. As we have tried to demonstrate, this remunerated "right to train the AI" can equally find support in the human rights framework[135]. Of course, this proposal will need to be developed, discussed, closely monitored and evaluated from a multidisciplinary perspective. What is certain is that copyright law should secure a vibrant environment for culture and creativity in the future. This can be done by regulating wisely these new technological environments, but this also requires (finally) cherishing and putting the Human Author[136] at the center of the copyright system (and not only the copyright industries). Doing this, we might be able to have in the future AI-systems that serve creators and creativity, and not the other way around.

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solely by autonomous AI systems should be placed in the public domain without copyright protection".

[133] In particular O. Lobel, "The Law of AI for Good", Jan. 26, 2023, San Diego Legal Studies Paper No. 23-001, available on SSRN: https://ssrn.com/abstract=4338862. Regarding the benefits of Generative AI in the field of research *see* S. Flynn, C. Geiger and J.P. Quintais, "Implementing User Rights for Research in the Field of Artificial Intelligence: A Call for International Action", EIPR 2020, Vol. 42, Issue. 7, p. 393; C. Geiger and B.J. Jütte, "The Right to Research as Guarantor for Sustainability, Innovation and Justice in EU Copyright Law", in: T. Pihlajarinne, J. Mähönen and P. Upreti (eds.), "Rethinking the Role of Intellectual Property Rights in the Post Pandemic World: An Integrated Framework of Sustainability, Innovation and Global Justice, Edward Elgar, 2023 (forthcoming), available on SSRN: https://ssrn.com/abstract=4140627; Sean Flynn et al., "Legal reform to enhance global text and data mining research", Science 2022, Vol. 378, Issue 6623, p. 951.

[134] *See* C. Geiger, "Statutory Licenses as Enabler of Creative Uses", *supra* note 124. More generally on statutory remunerations rights as a workable compromise solution in the digital environment, *see* C. Geiger and O. Bulayenko, "Creating Statutory Remuneration Rights in Copyright law: What Policy Options under the International Framework?", *supra* note 118 at p. 408 sq.

[135] Unfortunately, the AI Act in its latest version of March 2024 seems to endorse this "opt out model", which as we have seen might have detrimental effects on AI developments in the EU but also unlikely benefit individual creators directly. As we have seen, other options balancing the interest of society in AI development with the interest of creators should be considered. See also in this sense the very interesting reflection by M. Senftleben, "AI Act and Author Remuneration - A Model for Other Regions?", 2024 forthcoming, available on ssrn at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4740268

[136] *See* in this sense also D. Gervais, "The Human Cause", *supra* note 36 at p. 38, "If we refuse to take the position that the focus of IP law is human creativity and innovation, what will be left for us to do? Who will be the great creators of tomorrow who will help us to understand and shape our world if machines are the artists, novelists, and journalists?"