

Request for Comments on Intellectual Property Protection for Artificial Intelligence Innovation

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Creations generated by Artificial Intelligence (AI) have been aimed by different analyses, conferences, regulatory proposals, among other exercises and actions within private and public circles. The outcomes of these latter have presented us a wide offer of opinions and forms to see and describe the world. Some aim to assign full Intellectual Property Rights (IPRs) to AIs or to creators like Rembrandt following the spirit of metaphysical conflicts behind cases like *Urantia Foundation v Maaherra*², while others argue that one should assign these rights to the person that owns the machine making reference to cases, such as, *Naruto v Slater*³, the famous monkey selfie case. As one would expect, there is a wide offer of arguments between these two positions that should take us to ask two questions: are we describing the legal reality looking at our world as it really is? Or is there something in our way of seeing it that has led us to mischaracterize our legal reality⁴?

Certainly, one can agree that these creations pose a number of questions that have to be answered. For example, should works like *Portrait of Edmond Belamy*⁵ be protected under copyright? And, if so, under which figure? On this point, before preparing any potential answer, Sir Roy Goode⁶ issues a wise warning. In debates concerning the

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² [1997], 114 F.3d 955 (US).

³ [2018], 16-15469 (US).

⁴ G. Calabresi *The Future of Law & Economics* (2016, New Haven: Yale University Press), at 3.

⁵ Christie's, "Is Artificial Intelligence Set to Become Art's Next Medium?" (2018), available at <https://www.christies.com/features/A-collaboration-between-two-artists-one-human-one-a-machine-9332-1.aspx>, Christie's (accessed on 29 December, 2018).

⁶ R. Goode, *Commercial Law in the Next Millennium*. (1998, London: Sweet & Maxwell), at 97.

legal implications of electronic/digital business environments, there is an unfortunate tendency to over-emphasise and idealize the virtues of these technologies and to assume that they automatically change everything as far as legal relationships are concerned. Here we find the complexity of the matter. If we read most of the works related to the application of AI in creative industries that try to answer these questions, we can see how their respective authors try to write single unified theories of AI and IPRs. Consequently, most of these works offer us nice introductions with rather interesting cases, but a content that jumps from one right to another, among different industries and, at the end, they present us beautiful documents of legal philosophy with no practical use.

One can understand that these efforts consider that human creativity goes beyond the plastic arts, covering elements from whisky blending to the very world of mathematics. However, different creations are subject to different sets of rights based on their very nature. For instance, the IPRs related to musical creations cover elements, such as, public display, that are impossible to execute in the case of other works, while plastic arts and the intermediaries relating to them require rights like the *Droit de Suite* (DDS) based on the intermediation paradigms that characterize their market. On this line, the present opinion does not pretend to offer (or push for) a single unified theory of AI, but a proposal to address a problem within a well-defined market under the current state of the technology available. Accordingly, through this document, we will answer the question: Should a work produced by an AI algorithm or process, without the involvement of a natural person contributing expression to the resulting work, qualify as a work of authorship?

1. Artificial originality and creativity

When we talk about IPRs and plastic arts, some of the ideas that tend to come to our minds are rather similar to those expressed by William Blackstone⁷ and David Hume⁸,

⁷ W. Blackstone, *Commentaries on the Law of England. Vol. ii.* (1825. London: A. Strahan), at 405.

⁸ D. Hume, *A Treatise of Human Nature: Being and Attempt to Introduce the Experimental Method of Reasoning into Moral Subjects. Book I.* (1739, London: John Noon), at 415.

who argued that the rational and creative power of man is subject to the passions that characterize our human nature. This should not result surprising; after all, we are talking about different expressions by which each creator projects a Kantian personal element based on a distinguished sensibility⁹. When we stop in a gallery, in a museum or in a collection to admire a sculpture or a painting, we are not only looking and admiring a Picasso, a Toledo, a Van Gogh, but also we are experiencing a mix of influences, schools and styles that allow us to identify and connect each artist with his/her unique and private vision of the world under a specific context.

On this last point, some people could argue that artistic expressions generated using AIs reflect the spirit of a specific context, in our case, the Fourth Industrial Revolution (FIR). However, following Goode¹⁰'s warning, today, legally speaking, most of the regulations on this matter are directed towards the protection of the fruits of the human mind and to allow creators and right owners to represent ideas and exploit works efficiently, under a set of limited ownership rights allocated to persons, both natural and legal¹¹. Let us take the *Next Rembrandt*¹² project to highlight the spirit of these regulations. When one reads in different media that the referred project is structured around an AI that recreates the style of the old master, the first thing that comes to our minds is a hypothetical scenario based on a new generation of electronic artists. However, if one looks the video and reads the explanations presented in the website of the project one can infer that there are elements that can be protected in favour of individual creators, such as, the database that contains the style and features desired, and even in favour of legal persons following the work for hire (WFH) doctrine. Furthermore, legally speaking, one could argue that this is a great derivative work created using the tools available in our context. In other words, *The New Rembrandt* does not reflect the work of an intelligent artificial entity.

⁹ H. Read, *The Meaning of Art. A Survey of the History of Art, Especially Painting and Sculpture, and of the Bases of Aesthetic Judgements*. (1949, Suffolk: Penguin Books), at 27.

¹⁰ Goode, above n 6.

¹¹ P. Baldwin, *The Copyright Wars. Three Centuries of Trans-Atlantic Battle*. (2014, Princeton: Princeton University Press), at 15; A. Guadamuz, "Do Androids Dream of Electric Copyright? Comparative Analysis of Originality in Artificial Intelligence Generated Works" (2017) 2 *Intellectual Property Quarterly* 169-186, at 173.

¹² See <https://www.nextrembrandt.com/>.

Based on this first conclusion, one could easily argue that the issue ends here. Current regulations have everything to face the challenges posed by a disembodied, isolated and emotionless “intelligence¹³.” After all, following the spirit found in cases, such as, *Pompeii Estates, Inc. v Consolidated Edison Co*¹⁴, the legal ownership of computer-generated works is rather clear. However, it is possible to argue that this conclusion is not universal. Certainly, someone can face us with the content of the discussions related to the enactment of the Copyright, Designs and Patents Act 1988 of the UK, where Lord Beaverbrook¹⁵ considered that:

“With works generated by a computer there is no identifiable human author to claim a paternity or integrity right. This is the essence of the definition in Clause 161. We do not think that the person identified by Clause 9(3) as the author for copyright purposes should have moral rights. Moral rights are closely concerned with the personal nature of creative effort, and the person by whom the arrangements necessary for the creation of a computer-generated work are undertaken will not himself have made any personal, creative effort.”

An interesting argument that we will retake during the analysis of our proposal; however, on this point, one has to be careful. One can argue that our legal reality recognizes that creativity lies not only with the human coder but also with the human user. That is the reason why we own the IPRs related to the literary documents that we generate using Microsoft Word, despite that we are not the coders of the application. Now, can we eventually change this approach and assign some creative weight to the code by itself¹⁶. Well, researchers like Ahmed Elgammal¹⁷ are working on that.

¹³ H. Marsh, “Can Man Ever Build a Mind?” (2019), available at <https://www.ft.com/content/2e75c04a-0f43-11e9-acdc-4d9976f1533b>, *Financial Times* (accessed on 9 January, 2019).

¹⁴ In this case, Judge Posner argued that “computers can only issue mandatory instructions—they are not programmed to exercise discretion.” See [1977] 91 Misc.2d 233 (US), at 237.

¹⁵ [1988] HL Deb Vol. 493 col 1305, 25 February 1988 (UK).

¹⁶ M. Du Sautoy, *The Creativity Code. How AI Is Learning to Write, Paint and Think*. (2019, London: 4th State), at 7.

¹⁷ A. Elgammal; et al., “CAN: Creative Adversarial Networks Generating ‘Art’ by Learning about Styles and Deviating from Style Norms” (2017), available at <https://arxiv.org/abs/1706.07068>, *Cornell University* (accessed on 17 March, 2019).

Following the concept of the Generative Adversarial Network (GAN) developed by Ian Goodfellow; et al.¹⁸, whose basic model is applicable to the study of human creativity, Elgammal¹⁹ have wondered if AIs can be subject to their own set of experiences to generate their own individual styles. For this purpose, he has developed a pair of neural networks trained on the same data set. The first one, known as “Generator,” produces “artistic” outputs, such as paintings, which the “Discriminator” network compares and judges based on the original data set, just as a human art critic would do with any other artist²⁰. As result of the interactions between both networks, the “Generator” receives a feedback with the aim to avoid the creation of derivative works; thus “learning” and developing its own style as more data becomes available²¹. Through this process of machine learning, probably, in a couple of decades, we will be able to say something like “look this is an *Ai-Da*²²,” just as today we can easily identify a Rothko, a Hirst or a Koons.

1. The Electronic Creation Right (ECR)

Lines above, we argued that projects like *The Next Rembrandt* can be considered as derivative works, whose real value lies on the organization of their databases. But, can we apply the same argument to those works generated by an evolving GAN? And how can we regulate their gradual insertion in the global art market, considering the market imperfections relating to it and its intermediaries? To answer these questions, we return to the opinion of Lord Beaverbrook²³ who argued that in the case of works generated by a computer we cannot assign moral rights nor identify a human as an author. One can be

¹⁸ I. Goodfellow; et al., “Generative Adversarial Networks” (2014), available at <https://arxiv.org/abs/1406.2661>, Cornell University (accessed on 17 March, 2019).

¹⁹ Elgammal; et al., above n 17.

²⁰ M. Giles, “The GANfather: The Man Who’s Given Machines the Gift of Imagination” (2018), available at <https://www.technologyreview.com/s/610253/the-ganfater-the-man-whos-given-machines-the-gift-of-imagination/>, MIT Technology Review (accessed on 11 June, 2019).

²¹ Du Sautoy, above n 16, at 133-140.

²² Ai-Da is a mechanical robot, which had its first solo exhibition at the University of Oxford’s Barn Gallery between 12 June and 6 July, 2019. See ai-darobot.com.

²³ [1988] HL Deb Vol. 493 col 1305, 25 February 1988 (UK).

certain that with the evolution of GANs and machine learning in general, this opinion will become rather popular, considering that these AIs can reach a point where all the creative effort will depend on the autonomous evolution of their respective networks. In certain way, one could argue that, eventually, we will witness the emergence of those spontaneous intelligences in absence of human intervention described by Jiahong Chen and Paul Burgees²⁴. To face this challenge and its market imperfections, we can work through normative transitional forms that could be designed after what we call the Electronic Creation Right (ECR).

So, under the ECR, who would be the beneficiary of the economic rights related to these works? Following the WFH doctrine, the answer would be the individual or company under whose control the AI developed the work; however, the referred natural/legal persons, would not be considered as the authors following the argument set by Lord Beaverbrook. For this purpose, the ECR would be designed as a label aimed to recognize the “paternity rights” of the AI entity, which in turn, would help us to tackle potential market imperfections relating to information asymmetries, that could emerge from mass production of the works or form practices designed to corner the market.

These potential imperfections were highlighted during a presentation at the University of Edinburgh by Andrés Guadamuz, who opened his intervention with a little game called “Bot or Not.” Through this exercise, the forum was invited to see several artworks and guess if the author was a human or an AI. Surprisingly, all the participants failed to recognize that all but one of the works were created by a computer. Now, take this exercise to an auction in our current market and you will have the perfect textbook example to describe a problem of asymmetrical information, that is highlighted if we consider that the art market is characterized by the monopolistic power held by few well-known players, who, through their experts, galleries and collectors, can influence its value and volume. Consequently, under our ECR, if you want to sell the painting that your AI created, the intermediary involved in the transaction would have to ask you about the characteristics of the machine that would be labeled as the author of the work, which, in

²⁴ J. Chen and P. Burgess, “The Boundaries of Legal Personhood: How Spontaneous Intelligence Can Problematiser Differences Between Humans, Artificial Intelligence, Companies and Animals” (2019) 27 *Artificial Intelligence and Law* 73-92.

turn, would have to comply with a set of minimum requirements, such as, the level of complexity of its algorithm, and the proportion of human intervention.

Furthermore, artworks generated by AIs could be replicated easily and inexpensively if users and developers have free access to the database and the algorithms without affecting the originals for their own creative efforts. With this element in mind, the ECR would set a definition of artwork generated by an AI, which would be structured around the basic elements of existent definitions with the addition of a restriction in the number of copies that can be generated on the same work, and even on the same database, following the spirit of cases like *Grogan-Beall v Ferdinand Roten Galleries, Inc*²⁵, with the aim to restrict market abuses.

Finally, returning to the potential material immortality of these artificial entities, the ECR would expire at the end of the period set for ordinary economic rights in the applicable jurisdiction, with the difference that the starting point for this framework would be the date of creation of the work, not the end of the calendar year in which the human beneficiary dies. So, after this period, even if the electronic creator has extended its own existence beyond the terms set by the law for the execution of this right, the creation would be traded in this market just as today we trade with old masters works.

²⁵ [1982] 133 Cal. App. 3D 969 (US).