(i) Should copyright be attributed to original literary and artistic works that are autonomously generated by AI or should a human creator be required?

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 legal[1]. Let us take the *Next Rembrandt*[2] 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 made in collaboration using the tools available in our context. In other words, *The New Rembrandt* does not reflect the work of an intelligent entity.

Based on this first argument, one could easily state that the issue ends here. Current regulations have everything to face the challenges posed by a disembodied, isolated and emotionless "intelligence[3]." After all, following the spirit found in cases, such as, *Pompeii Estates, Inc. v Consolidated Edison Co*[4]*.,* the legal ownership of computer-generated works is rather clear in countries like the UK as we can verify through Section 9(3) of the Copyright, Designs and Patents Act 1988, which states that:

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[1] 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.

[2] See https://www.nextrembrandt.com/.

[3] 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).

[4] 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.

"In the case of a literary, dramatic, musical or artistic work which is computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken."

In a similar way, following the ideas found in Chapter V of Locke[5]'s *Second Treatise of Government*, most of the jurisdictions that follow the European continental tradition conclude that an author is "the natural person who has created a literary and artistic work," as one can verify through the analysis of Article 12 of the Federal Copyright Law in force in Mexico.

Certainly, someone can face us with the content of the discussions related to the enactment of the referred Copyright, Designs and Patents Act, where Lord Beaverbrook[6] 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."

Building on this opinion, we can be certain that with the evolution of machine learning and deep learning in particular, AIs could reach a point where a high proportion of the creative effort will depend on the autonomous evolution of their respective neural networks. In certain way, one could argue that, eventually, we will witness the emergence

[5] J. Locke, *Two Treatises of Government.* (1821, London: Whitmore and Fen.) at 208.
[6] [1988] HL Deb Vol. 493 col 1305, 25 February 1988 (UK).

of those spontaneous intelligences in absence of human intervention described by Jiahong Chen and Paul Burgees[7].

Now, who would be the beneficiary of the moral and 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. After all, independently of the level of the AI's autonomy, for now, a natural and/or legal person has to determine when the work is finished and ready to be offered to the market. As the reader will realize, these are "pure" moral rights. However, the referred natural/legal persons, would not be considered as the authors following the argument set by Lord Beaverbrook. For this purpose, we could design a regulatory 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. We name this measure as the Electronic Creation Right (ECR).

Consequently, under a hypothetical ECR, if you want to sell the painting that your AI created, the intermediary involved in the transaction would have to ask you: 1) who determined that the work was finished, and 2) about the characteristics of the machine that would be labeled as the author of the work, which, in turn, would have to comply with a set of minimum requirements, such as, the level of complexity of its neural network, 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

[7] J. Chen and P. Burgess, "The Boundaries of Legal Personhood: How Spontaneous Intelligence Can Problematise Differences Between Humans, Artificial Intelligence, Companies and Animals" (2019) 27 *Artificial Intelligence and Law* 73-92.

the same database, following the spirit of cases like *Grogan-Beall v Ferdinand Roten Galleries, Inc*[8]*,* with the aim to restrict market abuses.

Finally, taking in consideration 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, following the example set by Article 12(7) of the Copyright, Designs and Patents Act 1988[9], the starting point for this framework would be the date of creation and/or disclosure 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 the market just as today we trade with old masters works.

[8] [1982] 133 Cal. App. 3D 969 (US).

[9] "If the work is computer-generated the above provisions do not apply and copyright expires at the end of the period of 50 years from the end of the calendar year in which the work was made."