Of Soul & Incentive in AI Artworks – Revisiting Copyright's *Raison D'ĕtre*

AI Artworks; Copyright

This article addresses whether copyright should subsist in AI artworks ("subsistence") and, if so, how ownership should be allocated ("allocation"). The scope is limited to "AI-generated artworks" (referred to interchangeably as "AI artworks") in which the output may be considered truly independent of human intervention. Such works are distinguished from "AI-assisted artworks", in which human input is the preponderant creative input. Whereas the latter may be protected like any other human-created copyrighted work, AI authorship poses a doctrinal distortion in copyright law, which has historically conferred ownership only on human authors. This raises the further fundamental question: is the anthropocentric copyright regime fit for the purpose of AI artworks and the potential emergence of an AI artwork market? Here, it is suggested that, for AI copyrights, the doctrinal centre of copyright would necessarily shift from "authorship" to the "work", from "personality" to "incentive", and from subjective intention behind a work to its objective reception.

INTRODUCTION

In the past, any deviation from linearity in machines was considered to be a "distortion" of sorts.[1] In comparison, if and when humans deviate from the norm and/or engage in a process of lateral thinking, it is not always viewed as a distortion. In fact, human deviations from the norm are often viewed as "original", perhaps even "creative".

Machines have the *quantitative* firepower to rationalise an enormous amount of data and, more recently, this quantitative *difference of degree* is becoming a *qualitative difference of kind* whereby AI systems are moving beyond mere simulation of human neural networks.[2] As they begin to demonstrate the ability to autonomously make creative choices and deliver unpredictable and unforeseen creative outcomes, several questions come to the fore: How and at what point did the systems stop merely copying the mechanisms of our brain and start creating?[3] Is this an offshoot of our own intelligence or a new form of intelligence? Should the social and economic benefits of these creations be captured? And, if so, how? These questions may require a neuroscientist, philosopher and engineer to come together in discussion. But, there is also a role for the copyright jurist, especially in relation to the third question.

[1] Karl F Milde Jr, "Can a Computer Be a Author or an Inventor?" (1969) 51(6) Journal of the Patent Office Society 378-406

[2] Jani McCutcheon "The Vanishing Author in Computer-Generated Works: A Critical Analysis of Recent Australian Case Law" (2012) MelbULawRev 23

[3] Arne Dietrich, "The Cognitive Neuroscience of Creativity", (2004) 11(6) Psychonomic Bulletin & Review 1011-1026

As a result of the qualitative shift from AI-assisted to AI-generated works, there is a case to be made for treating AI machine's deviation from input as a creative input of the machine,[4] if not a form of AI-generated authorship.[5] A copyright jurist would quickly be able to point that, historically, *ownership* of copyright has followed *authorship,*[6] which has followed a human-centric notion of *creativity*. Hence, providing copyright to an AI machine would introduce a distortion and, in effect, purge copyright's soul – human authorship.

In this essay, through a five-stage analysis of (1) the doctrinal centrality of human authorship in copyright law; (2) the UK's exception to the human authorship requirement in the form of the legal fiction of section 9(3); (3) the false dichotomy between human individuality (/originality/creativity/authorship) and incentive; (4) the elements of AI creativity (evolving capacity, autonomy, unpredictability, and variety); and (5) the multiple contenders to a potential AI copyright, three arguments are made.

Firstly, it is argued the emphasis on justifications of copyright as either economic incentive or expressions of human individuality elides a crucial connection between incentive and human authorship. This reveals that, while AI machines do not require incentive, humans may require incentive to program, use and invest in these platforms. Secondly, it is submitted that leaving AI artworks to the public domain can have negative implications with respect to devaluation of human art and dishonesty in the human art market and therefore some form of legal protection is desirable. Thirdly, the UK's exception (which has comparable expressions in other jurisdictions such as New Zealand and India) although ostensibly a bold exception and a helpful starting point that recognises "computer-generated works", leads us back to the same principle as the US and European traditions: machines are merely inert tools for creation. The UK exception cuts the cord between authorship by stating that the person responsible for the arrangement for the machine, not the AI author, owns the creative output. Thirdly, the quest for AI copyright is further complicated by the fact that no single person can be held responsible for the "arrangement", making allocation of the copyright a competition between multiple contenders: the programmer, the user, and the investor. Fourthly, it is proposed that, whether *sui generis*,[7] a neighbouring right,[8] or some other form of protection such as the Work Made for Hire,[9] the AI copyright must reward the party, most at risk of under-compensation.

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[4] Milde (n 1)
[5] Andres Guadamuz "Do androids dream of electric copyright? Comparative analysis of originality in artificial intelligence generated words" (2017) IPQ 2, 169-186
[6] Ibid
[7] Ibid
[8] Martin Senftleban and Laurens Buijtelaar, "Robot creativity: an incentive-based neighbouring rights approach" [2020] EIPR 42(12), 804

SUBSISTENCE

The Canonical Connection between Authorship and Human Creativity

Historically, ownership has subsisted in humans. In the Universal Declaration of Human Rights and Article 15 of the International Covenant on Economic, Social and Cultural Rights "everyone"[10] – presumably referring to human persons – has the "right to benefit from the protection of moral and material interest resulting from their works".[11] With respect to copyright, although a human author was not a requirement in the Berne Convention, some scholars suggest that the clauses are predicated on an assumption that the author is human.[12]

The US Office also only registers "authorship provided that the work was created by a human being" [13] and the US Supreme Court rejected a claim for animal authorship in *Naruto*, emphasising the human nature of authorship. [14] Across the Atlantic Ocean, although EU copyright law has no explicit human authorship requirement, it does require a work to be an "author's own intellectual creation"[15] which has since been clarified to mean that a creation must reflect an "author's personality". [16] However, how do these systems accommodate an entity, which is responsible for the elements of authorship (/creativity in the specific case of copyright), yet is not a human personality.

The UK's Approach: A Legal Fiction to Incentivise, not a Doctrinal Solution

To address this, the UK introduced a legal fiction. In the Copyright, Designs, and Patents Act 1988, a work that is "computer-generated" is defined as a "work that is generated such that there is no human author of the work".[17] Further to this, section 9(3) stated:

> 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.[18]

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[9] Shlomit Yanisky-Ravid "Generating Rembrandt: Artificial Intelligence, Copyright, and Accountability in the 3A Era – The Human-like Authors are already here – A New Model" (2017) MichStLRev. 659, 663

[10] UN General Assembly, *International Covenant on Economic, Social and Cultural Rights* (Treaty Series vol. 993, 1966)

[11] Jane C. Ginsburg "People Not Machines: Authorship and What It Means in the Berne Convention" (2018) IIC 49:131-135

[12] Ibid

[13] US Copyright Office, "Copyrightable Authorship: What can be Registered" (January 2021)(Compendium Chapter 300) < https://www.copyright.gov/comp3/chap300/ch300-copyrightable-authorship.pdf > accessed 20 February 2021

[14] *Naruto v Slater* [2018] 10129 9th Circuit California

[15] Case C-5/08 *Infopaq International A/S v Danske Dagblades Forening* [2009] ECR I-06569

[16] Case C-145/10, *Eva-Maria Painer v Standard Verlags GmbH & Others* [2010] ECR I-12533

[17] Copyright, Designs and Patents Act 1998, s 178

[18] Ibid, s 9(3)

Perhaps due to the statute's bald clarity or the illusion of clarity, this statute has been the subject of only one case. In *Nova Productions v Mazooma Games* the Court of Appeal ruled on the authorship of a computer game that a player's input "is not artistic in nature and he has contributed no kill or labour of an artistic kind. All he has done is to play the game."[19] Essentially, the player – a user – had generated various graphics and frames on a screen when playing videogame. These graphics and frames were deemed to be computer-generated works. As the programmer was the person who made the arrangements, the programmer was the author and therefore the owner of the copyright. Since this case, AI has advanced significantly, to the point that now that AI machine is becoming even more independent of the programmer's initial input, to the extent that it will be difficult to identify one "person" responsible for the arrangement.

Perhaps one may consider another authority on the subject of computer-generated works, which pre-dates the statute. In the case of *Express Newspapers v Liverpool Daily Post*, the plaintiffs published a competition involving the distribution of cards to its readers, with each card having a sequence of five letters that had to be checked against the winning sequences published by the Express group newspapers.[20] The winning sequences were published in a grid of five rows and five columns of letters. Because the players did not need to purchase the newspaper in order to obtain the cards, the Liverpool Daily Post reproduced the winning sequences in their newspapers. The plaintiffs sued seeking an injunction against this practice. The defendants contended that the published sequences were not protected by copyright, because they had been generated by a computer. As a result, there was no author.[21]

Whitford J accepted this argument. He held that the computer was merely a tool that produced the sequences using the instructions of a programmer, so the plaintiffs were awarded the injunction. In particular, he stated that "it is as unrealistic as it would be to suggest that, if you write your work with a pen, it is the pen which is the author of the work rather than the person who drives the pen." While discussing copyright reform that eventually led to the 1988 CDPA and the current wording of s9(3), the Whitford Committee had already discussed that "the author of the output can be none other than the person, or persons, who devised the instructions and originated the data used to control and condition a computer to produce a particular result."[22] It

[19] *Nova Productions v Mazooma Games* [2007] EWCA Civ 219
[20] *Express Newspapers Plc v Liverpool Daily Post & Echo Plc* [1985] 3 All ER 680
[21] Ibid
[22] Whitford Committee on Copyright and Design 6732; White Paper, Intellectual Property and Innovation, Cmnd 9712 1986

seems that Whitford J remained remarkably consistent between the case that pre-dated the statute and the drafting of the statute.

Doctrinally, the UK's approach brings us full circle back to its peer jurisdictions' emphasis on the centrality of human personality to the definition of an author deserving of rights of ownership. As this legal fiction (or exception to the human personality (/originality) requirement for copyright) does nothing to resolve the doctrinal riddle posed AI artworks, what does it do? It simply acknowledges that the art that is generated is worthwhile therefore it must be protected and incentivised.

The False Dichotomy between the "Soul" and the Incentive behind Copyright

Jane Ginsburg and several other scholars have criticised attempts to incentivise as an emphasis on "commercial value" rather than the "protection of the fruits of human authorship".[23] Along with the original copyright jurists, a humanist might very well point out that a crude focus on incentive would purge copyright of its soul and that the rationale came from the need to confer exclusive rights in personal creativity.[24] It is strongly arguable that copyright in the UK does work as a more utilitarian[25] sense primarily as an economic tool to incentivise and reward creativity in comparison to the European *droit d'auteur*, which protects works as expressions of their personalities.[26] However, these two ends of the spectrum merely offer two separate, sometimes competing and over-lapping, justifications for copyright. They do not give us the *raison d'être* behind copyright, which now must be revisited in light of AI artwork.

In *Cathach of Columba*, the first recorded copyright case, the Irish King Diarmait mac Cerbaill (circa 560CE) famously stated "To every cow belongs her calf, therefore to every book belongs its copy".[27] The dispute arose because Saint Columba hand-copied Saint Finnian's book. Finnian disputed Columba's right to keep the copy and King Diarmait's ruling upheld Finnian's ownership of the copy.[28] This lead to the 'Battle of the Book,' that caused 3,000 casualties.[29] Finnian's violence-inducing monopoly no longer reigns supreme and has been replaced by the

[23] Ginsburg (n 11)
[24] Ibid
[25] Ana Ramalho, "Will Robots Rule the (Artistic) World? A Proposed Model for the Legal Status of Creations by Artificial Intelligence Systems" (2017) Journal of Internet Law. Available at SSRN: https://ssrn.com/abstract=2987757
[26] Enrico Bonadio and Luke McDonagh, "Artificial intelligence as producer and consumer of copyright works: evaluating the consequences of algorithmic creativity" (2020) I.P.Q 2, 114
[27] Jeremy Phillips, "St. Columba the Copyright Infringer" (1985) 12 EIPR 350
[28] Ibid
[29] Ibid

copyright contract as a time-limited – not perpetual – monopoly.[30] The Berne and Rome Conventions limit the paternalistic "cow and calf" principle. The iterative process of, on the one hand, granting rights (subsistence) and, on the other hand, qualifying rights amounts to a balancing mechanism. Therefore, the modern copyright regime has rejected Diarmait's perpetual monopoly.

The need to protect Saint Finnian's authorial individuality only arose in so far as his creation came into contact with and was consumed by a community, a collective of other individuals, without whom the creation would have no audience. Copyright is a man-made legal category that exists to protect a somewhat soulful author's incentive *because* that author wants to share her art, yet is not so selflessly soulful as to continue sharing her art without an incentive – a right protecting her work from being copied. If anything, it is arguable that copyright is all incentive and no soul. Authorial individuality did not grow in a vacuum, but out of a community, dare I say, a community of incentives. Rather, it is an attempt to provide a heuristic starting point to address the doctrinal difficulties posed by AI artworks.

The Elements of Creativity: Process and Output

A human user presses a button on the Next Rembrandt machine. The machine starts consuming, manipulating, and rationalising data from Rembrandt's artworks through a human-programmed algorithm. This is called the *process*. Finally, it delivers an *output*. The copyright status of this output becomes uncertain because, although it is not authored/processed by a human, it contains elements of creativity that may be comparable to human creativity. We can say it is comparable to human creativity because one way of defining artificial intelligence is that it is an intelligence that performs tasks, which normally require human intelligence, such as visual perception, decision-making etc.[31] One way to understand this comparable creativity is by looking at the *process* and the other way is by considering the *output*.

The machine that created Edmond de Bellamy, which sold for $432,500[32] (approximately £310,600) in October 2016 at the New York auction house Christie's, was painted by a

[30] Justine Pila and Paul Torremans, *European Intellectual Property Law* (2nd edition, Oxford University Press 2019) 245

[31] Shlomit Yanisky-Ravid "Generating Rembrandt: Artificial Intelligence, Copyright, and Accountability in the 3A Era – The Human-like Authors are already here – A New Model" (2017) MichStLRev. 659, 663

[32] Ian Bogost "The AI-Art Gold Rush Is Here" (*The Atlantic*, 6 March, 2019) < https://www.theatlantic.com/technology/archive/2019/03/ai-created-art-invades-chelsea-gallery-scene/584134/ > accessed 17 February 2021

generative adversarial network (GAN).[33] This network possesses two processes: a generator and a discriminator. The generator's function is to generate new output (as in new machine-made portraits) and the discriminator's function is to decide whether the output meets the programmed-in standard of authenticity. This is done by comparing the generator's make with a pre-existing dataset of authentic portraits. The iterative process of generation and discrimination becomes a double feedback loop.

Process **– Evolution and Autonomy**

When we consider the human creative process, we may trace it back to the subjective intention of the author.[34] However, in the GAN, the intention, a human trait, is absent. The AI author, unlike the human author, will undertake the creative process without intention or incentive of financial reward or recognition. This is the main reason why AI-artwork is not "like any other work". This does not, on its own, erase the fact that an GAN's process can reveal elements of creativity that are not only comparable to human creativity but may even, from a strictly logical perspective, merit copyright protection.

The first element of creativity arises from the fact that, with each round of the double feedback loop, both the generator and the discriminator become incrementally different. This means that they are *evolving*.[35] Over the course of time and this process of evolving, the GAN's system moves away from the original basic dataset and the algorithm's initial architecture.

Although the ability to change itself and evolve is perhaps not strictly creative, it is the process that culminates in the second element, *autonomous* decision-making. Another machine, E-David, *autonomously* takes pictures with its cameras and draws original paintings from these photographs. It is able to freely make a choice between various techniques and styles of art, including colour, shape, light etc. In as much as it has become a self-contained body of decision-making, it is acting autonomously to the human programmer.[36]

Output **– Unpredictability and Variety**

Following the self-changing process that the AI machine undergoes, an output is generated mostly if not entirely by the machine and humans behind the creative process – the investor, the programmer, or the user – could not have foreseen how the final output would look.[37] This

[33] Tim W. Dornis, "Artificial Creativity: Emergent Works and the Void in Current Copyright Doctrine" (2019). Yale Journal of Law & Technology Vol. XXII, pp. 1 (Available at SSRN: https://ssrn.com/abstract=3451480
[34] Bonadio and McDonagh (n 26)
[35] Yanisky-Ravid (n 9)
[36] Milde Jr, (n 1) page 403
[37] Bonadio & McDonagh (n 26)

means that the third element of creativity is the lack of foreseeability of the outcome, or *unpredictability*.

Some if not much of the excitement of creation comes from the process that can lead to a unique and unpredictable outcome. In fact, the creative process has even been defined as a succession of thoughts and actions leading to original and appropriate productions.[38] Also in relation to unpredictability, it has been suggested that as a program becomes more sophisticated, the works would get more *varied* because of the program's self-changing associative elements, with the result being that individual compositions triggered by different users would very rarely, if ever be identical.[39]

Output can also be linked to the objective reception of a piece of AI-generated artwork. This means that, although we have no way to ascribe a subjective intention, One other way of looking at this question is: if it were created by a human, would it attract copyright protection? Many current and future AI artworks in the future may very well pass this test.[40]

Negative Implications of Leaving AI Artworks to the Public Domain

If the free and public availability of AI art would lead to there being no incentive to buy human art since AI art would work just as well. In light of this, there are potential negative side-effects of the public domain that must be considered. If an AI art market comes about, it would be an adjacent market.[41] Although it is difficult to say as of now whether its effect on the human art market would be complementary or substitutive, there is precedent of adjacent markets impacting their neighbouring markets.[42] At this stage, there are three identifiable potential side-effects for the human art market that may arise if AI artworks are left to the public domain as: the value of human art may decline, dishonesty and art fraud.

Firstly, if AI artworks are publically available, this may have negative consequences for the human art market, namely devaluation of human-authored art. For instance, if AI artworks can be obtained without licence, there is much weaker incentive to use human-authored rather than

[38] T I Lubart, Models of the creative process: past, present and future (2001) Creat. Res. J. 13, 295–308; T I Lubart, C Mouchiroud, S Tordjman, and F Zenasni (2015). Psychologie de la Créativité (Deuxième Edition) [Psychology of Creativity]. Paris: Armand Colin.
[39] Jared Vasconcellos Grubow, "O.K. Computer" (2018) 40 Cardozo Law Review 397
[40] Sarah Legner, "Are works of art in need for further protection?" (2021) EIPR 43(2), 71
[41] Stefan Scheuerer, "Artificial Intelligence and Unfair Competition – Unveiling an Underestimated Building Block of the AI Regulation Landscape" (November 27, 2020). This article has been accepted for publication in GRUR International, published by Oxford University Press, Max Planck Institute for Innovation & Competition Research Paper No. 20-21, Available at SSRN: https://ssrn.com/abstract=3744798
[42] Case COMP/38.784 *Telefónica UK/Vodafone UK/Everything Everywhere/ JV* at [386]

AI-authored works.[43] Further to this, with respect to value, consumers might value human-made works over AI generated ones, which leads to the second potential problem with the public domain.

Secondly, If AI artworks are freely available, either they will become substitutes and then no one will buy art or human art will subsume artificial art and disguise. Dishonesty is a potential problem that may arise from leaving AI artworks at the mercy of the public domain. Human authors who have used AI technologies in their creative process may attempt to conceal the AI input in case the AI input is deemed a preponderant input and therefore that particular work would not attract copyright at all.[44]

Thirdly, there is an AI ecosystem developing around art-work in the form of applications such as the "Shazam for art" which would be able to identify an artwork by visual pattern recognition,[45] artwork recommendation engines that work like Netflix to identify traits from artwork that an art collector enjoys,[46] and robot exhibition curators among others.[47]

ALLOCATION

Now that it is concluded that copyright, or some form of protection, must subsist in copyright, the question becomes: who owns the copyright of the AI artwork? Generally, *ownership* of copyright follows *authorship*, which in turn follows notions of *creativity/originality* that vary across jurisdictions, as has been explained above. Therefore, if the preponderant creative input is that of the machine, the machine is the author, and it owns the copyright. Unfortunately, here logic exposes the distortion. Doctrinally, machines can not own because they do not have legal personhood. In any case, besides legal personhood, a machine does not need to be incentivised with copyright, because it will create with or without its (non-existent) volition.

This suggests that, until machines acquire legal personhood, either we must abandon the cause of AI copyrights and leave AI artworks to the public domain, which has been rejected for the reasons given in part 1, or we contemplate other potential proximate contenders who do have an incentive for ownership. To understand the difficulties that this question poses, it is helpful to consider the team behind an AI art exhibit at HG Contemporary gallery in Chelsea, New York

[43] Ramalho (n 25)
[44] Bonadio & McDonagh (n 26)
[45] Tim Schneider "AI has the potential to Change the Art Business- Forever. Here's How it Could Revolutionize the Way we Buy, Sell, and See Art"(*ArtNet* 31 March, 2020) < https://news.artnet.com/market/ai-art-business-intelligence-report-2020-1812288 > accessed 20 February 2021
[46] Ibid
[47] Ibid

entitled "Faceless Portraits Transcending Time". The idea for this exhibition came to fruition as a result of a computer scientist, a gallerist who was formerly a hotel-chain financial analyst, a venture capitalist with academic expertise in biomedical informatics, and an art consultant meeting at a blockchain conference.[48]

If an artwork at this exhibition was to be used in someone else's creative process or copied by a modern-day Saint Columba, who would hold the right to be compensated for that act of use or copying? This brings us back full circle to incentive. An AI machine does not have an incentive in the artworks on display at the exhibition, but all of these individuals did. I now consider the allocation of the copyright of an AI artwork across its value chain: from the investor, programmer, user, to any other player in the interstitial spaces between these parties, such as the government.

The Programmer

Anne-Marie Birdy is in favour of the copyright being allocated to the "author of the author", namely the programmer.[49] Birdy suggests that rewarding the user would have an "adverse effect of creating – downstream – an incentive for 'free riding' and eventually discouraging – upstream – the creation of new cultural products." It is strongly argued herein that the risk of free-riding is not unique to the user. Instead, it can arise due to over-compensation of any of the parties in the AI artwork's value chain. This view is also predicated on the notion that the technical input is the single most important creative input to the AI machine's process. Furthermore, awarding copyright to programmers for the outputs as well as the remuneration received from the investor would lead to over-compensation of the programmer, "two bites at the cherry".[50]

The User

The user is the person who sets the parameters and provides data for the algorithm in ways that significantly influence the final work.[51] The final creative output could be considered the culmination of creative inputs provided by the user. This would encourage users to purchase and use AI programs for their creative flourishing and to create new works. Eventually, this would also benefit programmer because user incentive to buy the program would increase the overall value of such machines and hence the expertise of programmers. And, in any case, giving the copyright to the programmer could lead to and operate the program in order to create new

[48] Christie's "Is artificial intelligence set to become art's next medium?" (12 December 2018) https://www.christies.com/features/A-collaboration-between-two-artists-one-human-one-a-machine-9332-1.aspx

[49] Annemarie Bridy "Coding Creativity: Copyright and the Artificially Intelligent Author" (2012) Stanford Technology Law Review 5

[50] Emily Dorotheou, "Reap the Benefits and Avoid the Legal Uncertainty" (2015) 21 CTLR 85, 89

[51] Bonadio & McDonagh (n 26)

works. This would eventually benefit programmers as well, because users would be incentivized to buy the program and thus increase its overall value. On the other hand, does the user really deserve the copyright if his input was merely the "personal touch"[52] touch of a button?

The Investor

The UK government "supports a copyright system which encourages creativity and investment in the creative industries and promotes economic growth."[53] Additionally, there is a drive to make the UK a global centre of AI and data-driven innovation.[54] And, the American Work-Made-For-Hire would also seem to reward the employer/investor the copyright for the employee's creation. Though, this may lead to the programmer being under-compensated.

This suggests that the lynchpin of an AI copyright is compensation that is proportionate to human contribution to the AI-authored artwork. Perfect quantification and qualification of these three (or more) types of contribution would in and of itself require either a human and/or an AI machine to "know" the AI machine's authorial process so well that it can distinguish between (1) its own input and that of humans and then (2) between the investor, the programmer, and the user. On this basis, the copyright could be allocated.

However, is it even possible and/or useful to be able to discriminate between creative inputs? Just because Rembrandt was suffering from a deep *melancholia*[55] when he painted, does that make his *melancholia*, clinical depression in modern terms, a neurochemical contributor to the artwork? Is it even possible to desegregate the *melancholic* element of Rembrandt's individuality from other aspects? And, does Samuel Taylor Coleridge even really deserve credit for *Kubla Khan*, which was famously written in an opium-induced[56] state of consciousness? What would we say to the 19th-century opium-supplier trying to recoup his investment in *Kubla Khan*? He would be told that the poem was not foreseeable to him and therefore was an unpredictable outcome, rendering his contribution unworthy of protection.

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[52] United Kingdom Intellectual Property Office, "Artificial intelligence call for views: copyright and related rights" 7 September 2020, https://www.gov.uk/government/consultations/artificial-intelligence-and-intellectual-property-call-for-views/artificial-intelligence-call-for-views-copyright-and-related-rights

[53] Ibid

[54] Professor Dame Wendy Hall and Jérôme Pesenti "Growing the Artificial Intelligence Industry in the UK" (15 October 2017) Independent Review for the UK Government < https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/652097/Growing_the_artificial_intelligence_industry_in_the_UK.pdf > accessed 21 February 2021

[55] Joseph J. Schildkraut, Marjorie Cohn, Harold Hawkins, "Privileged Piety: Melancholia and the Herbal Tradition", (2007) The Journal of Nervous and Mental Disease (Volume 195, Issue 1) 3-9

[56] Neil Vickers, "Opium as a Literary Stimulant: The Case of Samuel Taylor Coleridge" (2015) International Review of Neurobiology 120, 327-38

Both of these examples respectively relate to human experiences of pain and pleasure, which AI machines do not have. That said, they do highlight that, an unfocused disentanglement of non-creative human inputs would quickly become as absurd and pointless as a quest to reconstruct the elements of Rembrandt and Coleridge's creativity by diving into the bottomless internal psyches and external worlds inhabited by these two maestros. Hence, an intellectually fastidious approach to quantifying and qualifying human contribution to an AI-authored artwork is not favoured.

CONCLUSION

It is hoped that, in the foregoing, it has been demonstrated that, rather than an approach that emphasises two separate justifications for copyright (incentive-based or personality-based), the question of AI copyright calls for a re-examination of the *raison d'être*. Any such search uncovers that the human personality has a complicated desire to share her artwork yet, in order to do so, also desires an incentive. Hence, a heuristic re-centring of "incentive" rather than "authorship" offers a starting point for the discussion of how to protect AI elements of creativity that in many respects are comparable to human creativity. These comparable elements include the (1) AI process' *evolving* capacity and *autonomy* and the creative output's *unpredictability* and *variety*.

With respect to subsistence, it is argued that AI artworks can not be left to the public domain because of the potential negative effects of devaluation of human art and devaluation of the same. An allocation of the right should be based on incentivising and compensating the party least likely to be compensated by other means, on a case-by-case basis.