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CREATIVE AS AND LAW: FUTURE MODELS

BY GILDA TRICARIO

Digital Arts and IP Strategy Expert and Entrepreneur Marco Ferrari, Rome, Photo by Tomas

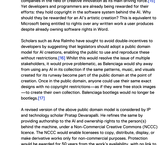
With the field of AI developing by leaps and bounds, what legal rights are granted to artificial non-human beings? In her new essay, Gilda Tricario considers the present and future legality of AI. Her investigation into the relationship between creative AI and law, "Creative AI: Opportunity and potential copyright protection in Part 1. Now, in Part 2, Tricario questions assistance between authorship and personhood, by posing the hypothetical situation of a runway collaboration between camera and AI.

Picture a model walking down a runway, wearing incredibly textured fabricoage clothes—with patterns that may one less but comfortably fit within the brand's identity. Only, the model is computerized. Her pose has been chosen by an AI. So are the clothes, not actual fabricoage in a turns out, but AI-generated renditions of what could easily be Fashion Week/ FW 19 collection.

Robert Barrat, the young self-taught creative behind the AI Nazo Balenciaga Bodyright project, trained a Generative Adversarial Network (GAN) to recognize and create designs that would suit the brand. GANs work as Barrat's have a generator component that can take a random noise and upscale it to an image that falls within the brand's identity. Then, the discriminator component of the GAN, which is also a neural component, fact-discriminates. The discriminator will then try to learn how to distinguish fake images generated by the network from the real brand ones. Both generator and discriminator grow, the first trying to fool the second, the second trying to catch the first.

While Barrat is not the only one using AI in the fashion industry, his enthusiasm for the prospects of AIs and humans collaborating on a collection is contagious—and that reality is almost here.[1] Google's Hilfiger, in partnership with IBM, uses an AI tool to read real-time fashion trends and customer preferences to inform collection design, and Google Arts & Culture's AI tool designers to make informed decisions about new seasons.[2] Alibaba and Guess piloted a system using smart mirrors that not only analyzes clothes, but also suggests an Illuminati logo, which customer loves them, but also alerts staff to bring and suggest certain complementary pieces.[3] Stitch Fix acts as a personal stylist powered by Vitalize, a AI's purchase history and social media activity, to recommend clothes and ship them to customers.[4] Cognitive Scale's Watson AI uses social stats materials to assemble flavour and aroma,[5] & team of researchers at the University of Tsukuba trained their GAN to generate new images that human fashion designers would use to create patterns from.[6] The patterns were then turned into a program used to make clothes. These examples show that AI can be a useful tool for designers, and potential subjects judging the garments to be more similar to those of the actual brand.

Considering the above, it isn't hard to imagine the following scenario. Designers feed an AI their own work, plus that of their competitors, customer data and predictions, trends. Barrat's GAN then generates mood boards and hypothetical models. These are fed into a Deep Convolutional GAN (DCGAN) to create patterns and patterns that can be fitted to digital models and worn. The clothes are produced by a SewBot, embedded with AI, which learns from mistakes and uses Bayesian optimization to improve the success of its collections. Sophia is the casting director. Visuals for the runway show are created by E-Gendd, an AI with an arm, five brushes, and a camera that automatically takes pictures and draws original paintings from these photographs.[7] Young Parmi is asked to pose and perform new tracks.



AI generated Nazo Balenciaga produced by a GAN trained by Robert Barrat. Photo via Twitter.

If this were a team of mere humans, relations between fashion houses, designers, tailors, casting directors, art directors, and music producers would be governed by contracts. Creative AIs require contractual agreements to use, for example, Young Parmi's track in campaign ads or to licence a particular pattern to Adidas for the creation of a capsule collaboration, distribution agreements to sell the collection, and employment contracts between the different parties. These are all grounded, commercially, in the subsistence of copyright in the designs, the patterns, the music, and the visuals.

As discussed previously, the lack of copyright protection afforded to genuinely creative AIs leaves us in a tenuous landscape in which original works cannot be declared as such because generated purely by non-humans. Its neural networks become more advanced and an entire team of AIs may be needed to work in tandem to implement models that can accommodate for them.

Europe, generally, has been restrictive to acknowledge that original works can be created by anyone other than a person—or persons. The romantic author requirement is rooted in Kant's Critique of Judgement (1790), instruments adopted first in 1886 and have counting 176 contracting parties, deals with the protection of works and rights of their authors, by setting minimum protections to be granted and contains special provisions available to developing countries that want to adapt them. Infoop the Commission's proposal for a directive on the protection of legal compilations far beyond the notion of copyright. In particular, in, such systems are ultimately authorship algorithms regulated under existing copyright regimes, their accumulation of very little original rights would necessarily stem from these.

Before copyright protection for such works was introduced, scrutiny would be necessary to prevent exclusive rights, known as privileges, granted by sovereigns. Following abuse of monopoly power, sovereigns refused to renew these and a new system prioritising the rights of authors filled the vacuum that was left. Philosophers argued that authors' rights were found in natural law, and that statutes would exist in order to give them a reward for their labour. Hegel, Fichte, Locke, Kant, Hugo Grotius, however, and the Statute of Anne in 1710, allowed authors to sell their rights to booksellers, creating a market approach, which was enshrined in the US. The reason that authors would choose to relinquish their rights in works too. On the other hand, in commercial Europe, an author's personal rights in their work, which, in turn, gave them a perpetual moral ownership of the works contained materials, even if they sold economic rights to publishers. These differences played out during Berne revisions, with natural rights prevailing—certain beats unacceptably as these are not limited by national borders: they attach to living individuals and thus suit the spirit of an international standard. Suffice it to say that the group that laid the groundwork for the Convention was the first International Congress of Authors and Artists.

In line with a more humanist reading of copyright law, EU and continental jurisprudence have failed to recognize purely computer-generated works, whilst England and Wales, by virtue of s.9(3) CDPA has sought to grant protection. Section 9(3) CDPA, however, has been interpretatively focused, common law practitioners now look the necessary models to award authorship to AIs for original works.

As noted by Dr Lambert *commercial endeavours should be protected, and the law should be flexible enough to allow for the protection of such remains to be seen whether and how copyright might apply to assist in doing so ... without further regulatory amendments.*[8] Should future models grant AI-created works originality from a deontological or utilitarian perspective? That is, should an AI's creativity be rewarded because it is a natural right or because it is a means to an end? Both utilitarian perspectives, because incentivizing and its strange is inherently valuable, there should be no ground for denying copyright on patents to an AI?[9]

Before delving into notions of nonhuman personhood, a simple model envisaged by intellectual property lawyer Andres Guadamuz deserves consideration. He suggests extending the applicability of s.9(3) CDPA since awarding copyright to the person who makes the arrangements for the possible is the most sensible approach to encourage investment.[10] However, the proposal again endeavours to find a human behind the machine, and cannot work with current systems as none of the human input is creative. Such systems include Google Deep Dream, which, for example, feedback providers, owners of an AI's hardware and/or software, AI operators, users, buyers... these could all arguably be classified as "those that made the operation of the AI possible"[11] and having a myriad of stakeholders would create unpractical scenarios with rights of functional levels that would be tantamount to having no rights at all.

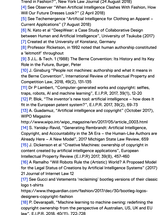
Zack Blue and Jemima Rooney, 1st place in Round 1 of CELL 2017, Showing Tay, Microsoft's AI that was corrupted in 24 hours, in 2016 tweeted about Hitler, Trump and Clinton in a deeply racist language directed towards Rooney. Photo by author.

Reducing the number of stakeholders is at the heart of another model developed by the Japanese AI lawyer Shinichi Gyetsky on protecting AI-Created works from unauthorized use and to ensure fair compensation of the developers. Since Nick himself cited support to universities and companies in the field of creative innovation as his main driving force,[12] the developers and programmers are already being rewarded for their efforts; they hold copyright in the software system behind the AI. Why would they need more? Gyetsky argues that, if the AI-Created work is made available for commercial use, the developers would be entitled to a fair share, after the same time providing commercial force. By awarding both benefits (ownership in the works) and responsibilities to the user employing the AI, it hopes to resolve issues associated with the user number of stakeholders that would be required to be considered as human behind the machine. The model is flexible too: a user could be Balenciaga in one instance and Saint Laurent the next.

Of course, the model relies on one fundamental principle that an AI's works can be copyrightable, meaning current IP laws still need to move away from historic notions of personhood, as illustrated.

In granting full rights personhood to Young Parmi, E-Gendd, and Balenciaga-GAN, a new range of complex legal issues would have to be determined: their employment rights, citizenship, ability to own, be compensated and crucially, their liabilities.

Whilst AI personhood and personhood have largely been shunned as philosophical inquiries because they call into question what it means to be human if we hold non-human entities to share our same intellectual rights[13], the question of liability and infringement has actively been considered. Who is liable when an AI's work infringes on another's work data and being unable to control the neural network processes there is very much a contemporary challenge, and analysing associated enforceability issues is as pressing as recognizing and rewarding an AI's creative rights.



Barrat shows works produced with his code against those produced by Obvious AI. Photo via Twitter.

To illustrate just how complex these liability issues are, one can turn to Christie's recent *auction of Portrait of Edmond Belamy*, a work of art generated by a GAN jeopardized by developed by Obvious Art. Besides the astounding price paid, the sale revealed intricate issues surrounding the AI art community. The code used by Obvious Art was in fact predominately their developed by Barrat, who had released it on Github using an open-source GNU License. Obvious Art, however, had allegedly made some modified Barrat's code algorithmic, they argued that the second set of lines spent on aligning it and training Ahn AI amounted to reasonable creation effort. AI artist and academic Tom White took an opposing view, noting that downloading Barrat's code, unedited, yielded extremely similar results to those produced by Obvious Art's AI.[14]

Yet, no matter how swiftly close the images generated may appear, Barrat would have had to exercise for redress. For one, academics have argued that GANs share a similar mechanism—referred to as GANs[15]—to the human brain, and that the process of training a neural network is nothing laundering. Second, to dispel the exact impact of Barrat's code on *Portrait* one would need to consider all steps involved in preserving the final work, continuing, constructing the generative algorithm, training, it, and selecting its best possible outputs. Third, Barrat's code is available on an open source licence meaning that users can review and modify it, whether or not for commercial purposes.

Although the model mentioned above relatively few parties, significant difficulties already arise in proving liability for copyright infringement in works produced by two GANs where they appear clear cut on the relevant community.

Problems would only increase exponentially if the dispute were between two creative AIs seeking to enforce their rights. Without data processing regulations in place, and assuming both had full access to the internet, what would happen if they designed extremely similar collections for two competing fashion houses? Would the developers of the respective AI players in the growth of the respective fashion houses be liable, or are they a precisely why legislators and regulators need to consider hypothetical scenarios of this kind.

Imagine the same Balenciaga shoe. As models walk down the runway, they have on nothing under a different record label from Nazo Bodyright. Well, starts playing a song that is too similar to Achoreo's own *Feeling Relate*. E-Gendd's visuals are too close to David Hockney's *Splash*. The patterns themselves now seem to recall Corinne des Georges' collection, dating only an hour ago. Achoreo, Hockney, and Des Georges are all in the crowd. What happens next?

[1] See his interviews with DEZEEN https://www.axensa.com/en-ca/editorial/fashion-do-androids-dream-of-balenciaga-ss19
[2] See Ai Weiwei, "Time artificial intelligence is informing how fashion designers create", Digitas (22 January 2018)
[3] See Ai Weiwei, "Time artificial intelligence is informing how fashion designers create", Digitas (22 January 2018)
[4] See Observer "When Artificial Intelligence Clashes With Fashion, How Will Our Future Dresses Look?" 27 April 2018
[5] See Technologence "Artificial Intelligence for Clothing an Apparel – Cognitive Scale Watson AI" 2018
[6] R. Yaro et al "Deepfashion: A Large Study of Collaborative Design between Human and Artificial Intelligence", University of Tsukuba (2017)
[7] Created at the University of Greenwich, Germany
[8] Professor Robinson, in 1992 noted that human authorship constituted "the sine qua non" of copyright
[9] 2 J.L. & T. 1 (1985) The Berne Convention: Its History and Its Key Role in the Future, Bogsch, Peter
[10] J. Ginsberg "People not machines: authorship and what it means in the Berne Convention", International Review of Intellectual Property and Competition Law, 2018, 49(2), 131-135
[11] Dr F Lambert, "Computer-generated works and copyright: selfies, traps, patents, monkeys", Lexology (19 Jan 2017) p.3 of 6
[12] Dr Shi Chao, "The inventor's new tool: artificial intelligence, how does it work in the European patent system?", E.I.P.R. 2017, 39(2), 69-73
[13] A. Guadamuz "Artificial intelligence and copyright", October 2017, WIPO Magazine
https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html
[14] D. Yaniska-Ronan, "Generating Rembrandt: Artificial Intelligence, Copyright, and Accountability in the 3A Era – the Human-Like Authors are Already Here – A New Model", 2017 Michigan State Law Review 659
[15] J. Dickerson et al "Creative Machines: ownership of copyright in content generated by neural network systems", Queen's Intellectual Property Review (E.I.P.R) 2017, 39(8), 463-467
[16] A Renaldo "Will Robots Rule the Libraries| World" A Proposed Model for the Legal Status of Creations by Artificial Intelligence Systems" (2015) 21 Journal of Internet Law 12
[17] https://www.axensa.com/en-ca/editorial/fashion-do-androids-dream-of-balenciaga-ss19
[18] https://www.theguardian.com/fashion/2017/dec/30/bostons-logo-designers-copyright-dispute
[19] P. Devanesh, "Machine learning to machine owning: redefining the copyright ownership from the perspective of Australian, US, UK and EU law", E.I.P.R. 2018, 40(11), 722-729
[20] Dr F Lambert, "The Legal Protection of Copyright and Artificially Intelligent Author" (2017) 3 Stanford Technology Law Review 1
[20] R D Hart "If an AI creates a work of art, who owns the rights to it?" Quartz Media 13 August 2017
[21] S. Yaniska-Ronan, "Generating Rembrandt: Artificial Intelligence, Copyright, and Accountability in the 3A Era – the Human-Like Authors are Already Here – A New Model", 2017 Michigan State Law Review 659
[22] "The Next Rembrandt: Originality and Authorship of Works," (31 October 2017), Columbia Science and Tech Law Review
[23] See https://www.theverge.com/2018/10/23/18013190/ai-art-portrait-auction-christies-battery-obvious-robbie-barrat-gan
[24] The term was coined by Google AI engineer François Chollet

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Gilda Tricario works for international law firm Withers as a trainee solicitor, with an affinity for art law. Currently based in Milan, she regularly contributes for FAD Magazine and is assistant editor of the recently launched broadsheet Art of Conversation. She is particularly interested in advancing legal and political discourse through a close study of contemporary and experimental art forms. Gilda graduated from the LSE with an LLB in Law and prior to that lived in Rome and Vienna.

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