Who (or What) is an AI Artist?

Article *in* Leonardo · June 2021

DOI: 10.1162/leon_a_02092

CITATIONS
8

READS
90

1 author:

Kieran Browne
Australian National University
8 PUBLICATIONS **24** CITATIONS

SEE PROFILE

Who (or what) is an AI Artist?

preprint

Kieran Browne

2020

The mainstream contemporary art world is suddenly showing interest in "AI art". While this has enlivened the practice, there remains significant disagreement over who or what actually deserves to be called an "AI artist". This article examines several claimants to the term and grounds these in art history and theory. It addresses the controversial elevation of some artists over others and accounts for these choices, arguing that the art market alienates AI artists from their work. Finally, it proposes that AI art's interactions with art institutions have not promoted new creative possibilities but have instead reinforced conservative forms and aesthetics.

AI Art and the Market

In October of 2018 Christie's became the first major auction house to place a work of "AI art" under the hammer. The work was *Portrait of Edmond Belamy* (Figure 1); a low-resolution image, clearly a portrait, vaguely Edwardian, printed on canvas and hung in a gilded frame. Its authors, the French art collective Obvious, had no established history or reputation as artists, nor was the work technically innovative (Bailey, 2018b). More importantly, despite its algorithmic origins the portrait is deeply conservative; it looks like what you would already expect to find in an art museum.

Christie's elevation of Obvious was controversial, not least amongst the community of artists who have been making work with contemporary AI/machine learning algorithms for years (Bailey, 2018b)(Florida, 2019). In justifying their choice, Christie's explained that Obvious had limited human intervention in the work (Schneider & Rea, 2018). This is used as evidence for a stronger claim; that this is the first artwork to be sold at a major auction house that was "created by an algorithm". In fact, Christie's list "GAN (Generative Adversarial Network)" as the portrait's sole author (Unknown, 2018).

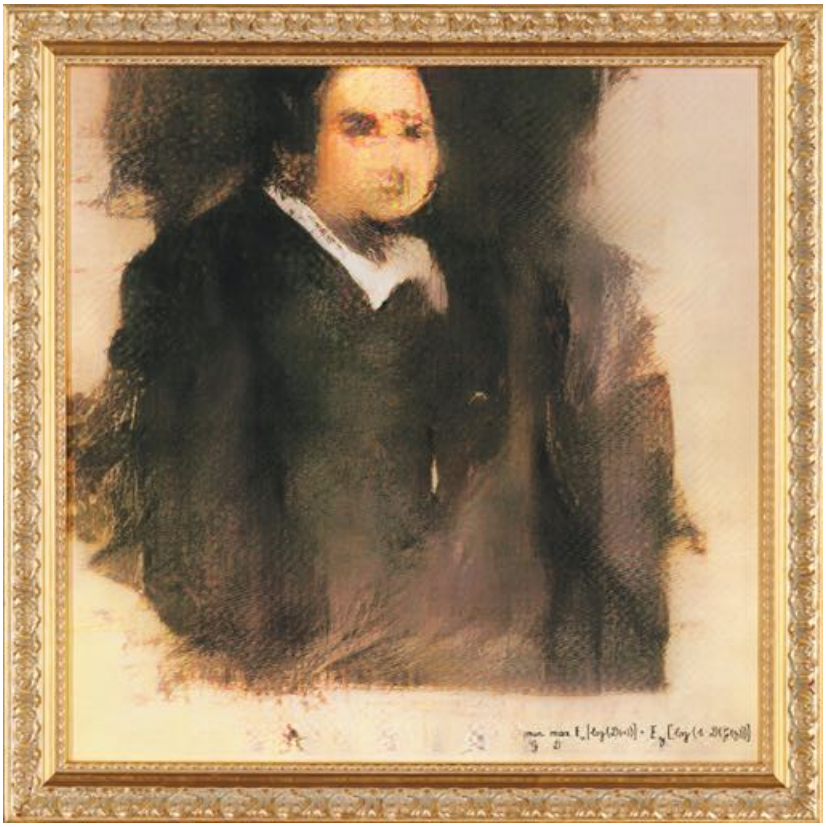

Figure 1: "Portrait of Edmond Belamy", Generative Adversarial Network print on canvas, 2018. (© Obvious).

The work sold for $432,500; nearly 45 times its estimated value (Unknown, 2018). The sale marks a significant moment, breaching a long-acknowledged division between digital art in its various forms and mainstream contemporary art (MCA). It proved that the prestige and capital normally reserved for MCA can, in principle, flow into digital art. This has given AI art an economic impetus. But, as McCormack et al. note, there is no real consensus as to what AI art actually is (McCormack et al., 2019). It is clear from the controversy around the Christie's sale that there is also significant disagreement as to who or what deserves to be called an "AI artist." This paper examines several claimants to the term and grounds these in art history and theory. It examines the effect of the sudden interest from the art market on this question and argues that AI art's interactions with MCA have not promoted new creative possibilities; rather they have reinforced old forms and aesthetics.

The Digital Divide

Contrary to Christie's' claims, *Portrait of Edmond Belamy* is far from the first artwork created by an algorithm to be sold at a major auction house. Artists like Frieder Nake and Vera Molnár pioneered algorithmic image generation with computers in the 1960s. Even artificial intelligence algorithms, though thoroughly different to those

used today, have been used to make art since 1968. Harold Cohen, the first practitioner of AI Art, devoted most of his life to the practice, but his works rarely attracted 1% of the price paid for *Portrait of Edmond Belamy* (McCormack et al., 2019). Like other pioneering computer artists, the market value of his work remains surprisingly low. For their part, most early computer artists were content with the small amount of attention they received, others were openly hostile to the art market. Nake stopped exhibiting altogether, claiming that "the capitalist art market is trying to get hold of computer productions" (Walewska, 2019). He need not have worried; digital art's endless reproducibility was incompatible with the one-off, limited-edition approach propagated by the gallery, museum and biennale (Pangrazio & Bishop, 2017). MCA meanwhile has passed over digital technology, instead focussing on old media for its rich materiality and rarity (Bishop, 2012). The market plays a clear role in this; Shanken (2016) notes the tremendous influence that capital exerts on MCA discourses (Shanken, 2016, p. 465). According to Bishop (2012) the continued prevalence of analog media technologies in mainstream art "[says] less about revolutionary aesthetics than it does about commercial viability" (Bishop, 2012).

By contrast, digital art must be made artificially scarce, *à la* Bitcoin, to act as an effective currency; a concession that artists usually refuse. All of this is summarised in Bishop's concept of the "digital divide"; digital/generative/computer/new media art (or whatever you want to call it) operates in a field of its own, marginal to MCA and its market (Bishop, 2012).

The auction of *Portrait of Edmond Belamy* for almost half a million dollars represents a major breach of the digital divide. It is worth asking why this work was so successful in attracting capital and why this was seen as illegitimate by many in the community of practice.

The Bricoleurs

In the lead up to the auction of *Portrait of Edmond Belamy* curator Jason Bailey reported that the sale had angered many in the AI art world (Bailey, 2018b). Putting aside for a moment exactly whom this "AI art world" includes, it is clear that Obvious did experience a severe backlash from many artists working with AI. Superficially, this dispute appears to centre around Obvious' uncredited use of open source software written by Robbie Barrat (McCormack et al., 2019). While this was widely condemned online, the backlash has less to do with the legitimacy of using open software in this way than who has the right profit from it.

Obvious' process is neither uncommon in "AI art" nor in art and design more broadly. In art theoretical language, the process can be understood as bricolage. The term, introduced to English by the French anthropologist by Claude Lévi-Strauss, is occasionally translated as "tinkering" but has no exact equivalent in English (Louridas, 1999, p.

518). Lévi-Strauss presents the bricoleur in opposition to the engineer. The bricoleur need not understand or make their tools, they redefine them for their own purposes.

In the context of generative art, this usually means finding existing technologies and repurposing them for creative ends. For the vast majority of artists working with contemporary AI, this is standard practice. The Machine Learning for Artists (ml4a) community has many tutorials that teach artists how to put AI algorithms to use, they do not teach the underlying mathematics to any significant degree. The aim appears to be to open these technologies to creative practice without requiring the level of technical literacy demanded by computer science journals and conference papers. The open source community has also significantly enabled this process. Many computer scientists and artists share code online for others to experiment with; this is how Barrat's work was published and ultimately used by Obvious.

A consequence of bricolage in AI art is that in large part, much work looks the same. With GANs as with other algorithms like DeepDream and pix2pix, the aesthetic is strongly determined by particular identifiable visual features attributable to the network architecture.

Because so few artists working with AI write their own algorithms, this leads to a race to make work with new architectures before their aesthetic is "used up" (Bailey, 2018a).

Some artists craft their own aesthetic by curating or creating training data. Helena Sarin and Anna Ridler, for example, train models on their own creative work: drawings, paintings, and photography. Sarin's work (Figure 2) takes on an illustrative handmade quality derived from her own style, despite its algorithmic provenance. While the work does display some algorithmic "artefacts" these are blended with features which reflect "the artists hand". Sarin engages explicitly with the term "bricolage", but unlike Obvious she has sufficient control of the form to create a unique style.

The Engineers

Unlike the bricoleur, the engineer has technical mastery of their tools and the ability to generate algorithmic innovations. In the history of generative and computer art, many artists of this kind have been supported by the academy rather than the market.

This has always been the case for generative and new media art. Early computer artists Cohen and Nake were both professors. Artist-academics like Ahmed Elgammal (Rutgers), Tom White (Victoria University of Wellington) and Gene Kogan (NYU) are similarly positioned today. Some large tech companies now also perform this patronage, with artists like artists like Sougwen Chung at Bell Labs and Mike Tyka at Google.

Figure 2: “Looking for Hidden Meaning in Wrong Places”, SNGAN trained on sketches, 2019. (© Helena Sarin).

Mario Klingemann is an exemplar for the engineer in AI art. Though he does not have a traditional academic background (Spratt, 2018) his work is supported by Google and is technically as well as aesthetically masterful. It is telling that, after the outcry over the Christie's auction, the other half of the art market's auction duopoly, Sotheby's, chose Klingemann's work for their debut into AI art.

Figure 3: "Memories of Passersby I", Composition of multiple GANs. Custom handmade chestnut wood console that hosts the AI computer and additional hardware. 70 X 70 X 40 cm. Two 65" screens (3840 x 2160) custom framed. 145 x 82.9 x 3.8 cm. 232 × 208 × 55 cm Edition 0/3 + 1AP, 2018. (© Mario Klingemann, Photo: ONKAOS).

Memories of Passersby I (Figure 3) is a dual channel video installation of infinite duration. The two displays navigate through the latent space of the neural algorithm. Faces emerge and dissolve like smoke. This work is much closer to the bleeding edge of AI art, creating an entirely new aesthetic experience, yet it sold for around a tenth of the price paid for *Portrait of Edmond Belamy* (Unknown, 2019). A likely reason for this is the art market's continued obsession with material objects; paintings and works on paper still make up the vast majority of works acquired (Shanken, 2016, p. 465). *Memories of Passersby I* may be more collectible than your average digital file due to its physicality, but according to an insider at Christie's, "collectors get confused and concerned about things that plug in" [^cappellazzo].

The Contemporary Artists

In addition to engineers and bricoleurs who use AI in to produce work, there are many contemporary artists who use their practice to make work *about* AI. With the growing popular interest in AI, many artists have turned their attention to how these technologies shape human experience and represent the world.

This is achieved in a manner described by Pangrazio and Bishop as

> deceleration, de-familiarisation and rematerialisation of the digital experience, [which] offers a form/figure of resistance that is inextricably bound to the digital, but also critical of it.(Pangrazio & Bishop, 2017)

These artists often use AI, but their work is informed by the history of MCA and their aesthetic is not so strongly bound to the visual artefacts of contemporary AI algorithms.

Hito Steyerl's *The City of Broken Windows* (2018) documents industrial AI and surveillance technologists attempting to teach an AI to recognise what she calls the language of broken glass. The work, presented in video and sound art, highlights the absurd spectacle. Trevor Paglen's *Machine Readable Hito* (2017) reveals the paucity of expression in AI emotion detection algorithms. The work takes the form of a large-scale photographic typology presented in a gallery setting. Below each portrait in a pseudo machine-readable format is an annotation that reveals the AI's prediction of her emotion based on the image. This collocation questions the machine-readability of emotion and reveals the absurdity of some results. In a similar manner, James Bridle's *Activations* (2017) presents an AI algorithm's internal representations as a photographic series. The work reveals how these representations are further and further abstracted from anything a human might recognise. There is a clear absurdist streak to these works. The artists seem concerned first and foremost in revealing the strangeness of these systems.

All of these works are presented in a gallery setting and most give material form to digital representations. Aesthetically, the works signal association with installation, video art, and contemporary photography. While there has been a noticeable growth of exhibitions featuring the previous categories of AI artists, many MCA institutions, like the Vienna Biennale for Change, have been more inclined to feature artists with an established practice in MCA.

The Algorithms

In addition to various distinct ways in which artists use AI, there has also been a move by certain art institutions and the press to present the algorithms themselves as artists. This paper will not consider the possibility that the algorithms deserve

authorship; plenty has been written about this question in the history of generative and computer art (see e.g. O'Hear (1995), McCormack et al. (2014)). McCormack et al. (2019) update this debate for "AI art" and find that contemporary algorithms (e.g. GANs, deepdream, pix2pix) are not fundamentally different with regards to authorship from previous generative processes (McCormack et al., 2019). Given that many artists who work with AI document their process thoroughly online it is possible to see with great clarity how ideas develop. These artists show a practice like any other. Despite this it is clear that in numerous cases where journalists use the term "AI artist" they are referring to an algorithm or machine.

In describing the *Portrait of Edmond Belamy* on their website, Christie's claim

> This portrait, however, is not the product of a human mind. It was created by an artificial intelligence. (Unknown, 2018)

As mentioned, they list "GAN" as the portrait's sole author. Notably, the copyright notice directly below maintains Obvious' claim to the intellectual property and consequently the revenue. Though the French collective have been heavily criticised for profiteering, Christie's, it seems, approached Obvious and not vice versa (Bailey, 2018b). Christie's head of prints and multiples explained that the work was chosen because "Obvious tried to limit the human intervention as much as possible" (Schneider & Rea, 2018). Of course, Obvious only limited their own involvement; the work is the collective sum of a great deal of human labour, not only on the side of technological innovation, but in the accumulated visual culture encoded in the training data. The division of labour afforded by open source practices creates distance between the work and the artist, and alienates the many contributors from the product of their labour. In the case of *Portrait of Edmond Belamy*, Barrat's code was itself based on software written by Soumith Chintala and traceable to the original generative adversarial network algorithm (GAN) conceived by Ian Goodfellow (McCormack et al., 2019)(Goodfellow et al., 2014).

The distance that software creates between artists and their work is further inflated by a manner of writing which downplays human involvement in the creative process. When Ahmed Elgammal exhibited his work at New York gallery HG Contemporary, Mashable reported

> Scientist Ahmed Elgammal went from doing artificial intelligence research to *attending* his first art exhibit in Chelsea.(Urgiles, 2019) (emphasis added).

Similarly outlandish claims are made in an article on Artsy which claims of Elgammal's work that "just like a real emerging artist, the algorithm is about to have its first one-machine show" and that it has "plenty of room for career growth" (Chun, 2017).

Elgammal, for his part, appears to encourage this interpretation. In a paper on the

work ((Elgammal et al., 2017)) he and his co-authors argue that their algorithm demonstrates capacity for creativity. Like much other work in computational creativity, the authors support this claim with a "computationally feasible" but unverified psychological theory.

Elgammal's "Creative Adversarial Network" (CAN) is a variant of the GAN designed to maintain distance from existing examples in the dataset. In their paper, Elgammal and coauthors show that human subjects (Mechanical Turk workers) cannot distinguish between the CAN outputs and modern/contemporary abstract works (Elgammal et al., 2017). Though much is made of this result in the paper, as sociologists have argued since the 1970s art appreciation is not innate but learned [36]. The results, then are perhaps an indictment of the distance between "high" art culture and popular culture rather than evidence of a radical new creativity.

Moreover, the signature visual artefacts of the GAN are clearly present in Elgammal's work, nor are the individual examples as visually diverse as the paper suggests.

For the existing institutions of MCA's market, the alienation of artists from their work has another motivation. Much of the interest in AI art stems less from the art than it does the "AI". As McCormack has noted

> Terms such as "Artificial Intelligence" inherently carry assumed meaning, and the value of this fact has not escaped numerous entrepreneurs and marketing departments (McCormack et al., 2019).

For MCA institutions like Christie's, attributing authorship to the algorithm is good business. Selling the first work created by a non-human intelligence is a radical and disruptive project, selling a work by some unknown digital artists, not so much.

The Market and Conservative Aesthetics

So why was Obvious' work so successful in attracting capital? The portrait played both to "artificial intelligence" and to the demands of the market for collectability. When asked about their innovation in creating the work, Obvious' Hugo Caselles-Dupré responded that "we presented it in such easy, not-subtle way, since it's really easy to comprehend" (Bailey, 2018b). Obvious were also willing to disclaim authorship and highlight the role of the algorithm.

The materiality of the work is also significant. The portrait may be the first work of this generation of "AI art" to be sold at auction but it is also profoundly non-digital; the large format print, the gilded frame, the style hazy but suggestive of pre-modern, Western portraiture. Rather than something new, the portrait reflects old forms and aesthetics.

In AI art there is an opportunity to create new aesthetic modes and experiences.

Klingemann's video installation work gives some indication of what form this might take. However, all evidence suggests that this will not appeal to the market in the way that canvas prints and gilded frames do. Digital art does not lend itself to commodification as do works on paper. For this reason, the prestige and capital from MCA, though drawing attention to the scene, may come at the price of creative inhibition.

References

Bailey, J. (2018a). Helena sarin: Why bigger isn't always better with gans and AI art. In *Artnome*. https://www.artnome.com/news/2018/11/14/helena-sarin-why-bigger-isnt-always-better-with-gans-and-ai-art

Bailey, J. (2018b). The AI art at christie's is not what you think. In *Artnome*. https://www.artnome.com/news/2018/10/13/the-ai-art-at-christies-is-not-what-you-think

Bishop, C. (2012). Digital divide: Contemporary art and new media. *Artforum*, *51*(1), 434–441.

Chun, R. (2017). It's getting hard to tell if a painting was made by a computer or a human. In *Artsy*. https://www.artsy.net/article/artsy-editorial-hard-painting-made-computer-human

Elgammal, A., Liu, B., Elhoseiny, M., & Mazzone, M. (2017). Can: Creative adversarial networks, generating" art" by learning about styles and deviating from style norms. *arXiv Preprint arXiv:1706.07068*.

Florida, R. (2019). Shaping the art of ai: Emily spratt curates art exhibition for major international forum on the responsible use of ai. In *Columbia University Data Science Institute*. https://datascience.columbia.edu/shaping-art-ai-emily-spratt-curates-art-exhibition-major-international-forum-responsible-use-ai

Goodfellow, I., Pouget-Abadie, J., Mirza, M., Xu, B., Warde-Farley, D., Ozair, S., Courville, A., & Bengio, Y. (2014). Generative adversarial nets. *Advances in Neural Information Processing Systems*, 2672–2680.

Louridas, P. (1999). Design as bricolage: Anthropology meets design thinking. *Design Studies*, *20*(6), 517–535.

McCormack, J., Bown, O., Dorin, A., McCabe, J., Monro, G., & Whitelaw, M. (2014). Ten questions concerning generative computer art. *Leonardo*, *47*(2), 135–141.

McCormack, J., Gifford, T., & Hutchings, P. (2019). Autonomy, authenticity, authorship and intention in computer generated art. *International Conference on Computational*

Intelligence in Music, Sound, Art and Design (Part of Evostar), 35–50.

O'Hear, A. (1995). Art and technology: An old tension. *Royal Institute of Philosophy Supplements*, *38*, 143–158.

Pangrazio, L., & Bishop, C. (2017). Art as digital counterpractice. *CTheory*, 5–24.

Schneider, T., & Rea, N. (2018). Has artificial intelligence given us the next great art movement? Experts say slow down, the 'field is in its infancy'. In *Artnet*. https://news.artnet.com/art-world/ai-art-comes-to-market-is-it-worth-the-hype-1352011

Shanken, E. A. (2016). Contemporary art and new media: Digital divide or hybrid discourse? *A Companion to Digital Art*, 463–481.

Spratt, E. L. (2018). Creation, curation, and classification: Mario klingemann and emily l. Spratt in conversation. *XRDS: Crossroads, the ACM Magazine for Students*, *24*(3), 34–43.

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

Unknown. (2019). Mario klingemann | memories of passersby i. In *Sotheby's*. http://www.sothebys.com/en/auctions/ecatalogue/2019/contemporary-art-day-auction-l19021/lot.109.html

Urgiles, K. (2019). We attended an AI's first art exhibit in NYC — future blink. In *Mashable*. https://mashable.com/video/ai-art-exhibit-nyc/#olKpqZyorZq7

Walewska, J. (2019). The art of computing as frieder nake's response to the problem of "mechanized mental labor": The early debates revisited. *Leonardo*, *52*(1), 54–59.