Creative AI: Prompting Portraits and Matching Datasets

du Preez, Amanda
Digital Culture & Media, School of the Arts, UP
International Institute for the Arts, UFS
Amanda.dupreez@up.ac.za

Abstract

This paper aims to provide a brief exploration of two versions of Creative AI, namely the prompting of portraits by using AI text-to-image generators and the use of GAN, AICAN and *Facer* to create AI generated portraits. These two versions are in turn compared to corresponding debates in the field of art history, namely the image-text debate as positioned by the image scholar, WJT Mitchell, followed by the concept of schemata as proposed by the art historian EH Gombrich. First, Mitchell's understanding of the nature of the image versus text is utilized to compare portraits prompted through text-to-image generators. Secondly, Gombrich's schemata is compared with recent AI portraits generated by means of image datasets. The differences between the art historical and the Creative AI processes are explored to draw initial conclusions about the future of portraiture and creativity.
Keywords: Creative AI, portraiture, prompts, text-image, schemata, image data sets

1 Introduction

The argument postulated in this paper asks and attempts to provide some preliminary answers to the question: what is art? On a rudimentary level it can be stated that art is a particular type of image and experience because we do not consider all images and experiences as art. If we did, the category of art would no longer exist. This is where the phenomenon of Creative AI or AI-Art[1] becomes important for on one level it may expand our understanding of art, and on another, it challenges traditional notions of art. The following analysis forms part of initial responses and reflections about art and creativity as embodied by Creative AI. The focus is on the genre of portraiture – the artistic genre most charged with cultural meaning since it focuses on the human face – the nexus of identity (physically and metaphysically).

Figure 1: Portrait created with Midjourney prompt (King 2023)

One of the pertinent questions working in the background is why we (humans) create art, and by extension, why would AI create art? Can we hypothetically think of a situation where the machine wakes up from its sleep mode and asks itself: "Where do you want to go today?" (for those of you who recall the startup message of Microsoft Windows in the mid-1990s: where do you want to go today?). The machine then responds with the following insight: Let us create art today! Why would AI create art? Is it for a human audience, for algorithmic reception, or to improve and expand AI existence? Clearly, these questions align more with "an ontological definition of creativity", while recent indications are that "in the field of computational creativity, scholars have increasingly refused to answer

[1] There is no consensus currently about how to name art created by means of using machine learning and algorithms: the Creative AI Lab, London, prefers "Creative AI"; the HISCOX's 2024 report uses "AI-generated art"; and Joanna Zylinska (2020) refers to "AI art".

this question and rather focus on the goal of programming computing systems that observers deem creative" (Simone & Hendrickson 2024, 2). In other words, how users perceive the machine's ability to be creative is more important than the actual creativity of the machine.

$$\min_G \max_D \mathbb{E}_x[\log(D(x))] + \mathbb{E}_z[\log(1 - D(G(z)))]$$

Figure 2: Algorithm used to create the Portrait of Edmond de Belamy by Obvious-collective (2018).

Perhaps it is prudent to start with announcing the assumptions about art on my part: Art is not a computational or mathematical problem that requires a solution (Fig. 2). An artwork cannot be equated with pixels or pigments, or to available images in a dataset, or as mere pattern recognition done at scale. Although art may contain all these elements it cannot be reduced to them. Surprisingly, we would require more humility when dealing with and creating art, as Drimmer and Nygren recently suggested in "Art History and AI: Ten Axioms" (2023). Humility refers to the fact that art labors on a human embodied scale. Even more incisive, the urge to be creative is often borne from the humble realization that we are mortal (De Sautoy 2019, p. 284). Creativity is accordingly more humbling than grandiose technological interventions may anticipate and cannot be dislodged from the ontological meanings of the concept.

2 The image-text debate incarnated

One of the most significant issues to consider as an image scholar is how text has come to dominate the creation of images via AI-Art. What do I mean by that: mostly one utilizes text-to-image AI generators such as Midjourney and Dall-E by formulating a prompt (a text prompt). In other words, you must describe in words the image you want. Given the longstanding debate about the complexity of the image-text intersection, and the implicit hierarchy and asymmetry skewed towards text (words), this is quite perplexing. An image is not simply a text and nor is a text simply translatable to an image. For the renowned image scholar WJT Mitchell the difference between images and texts are fundamental because "They are not merely *different* kinds of creatures, but *opposite* kinds" (2013, p.47).

In the case of AI-generated portraits they are prompted into existence, and the results do rely heavily, if not exclusively, on your ability to get your prompting right - not your drawing skills or sense for colour or composition, but the weighing of your words. Differently phrased: if you use different words, you conjure different images, not if you use a different angle, lighting or mix complimentary colors on your pallet. It is evident that the more detailed the prompt, the better the results because the image has been reduced to an "information-theoretical" problem (Kreminski 2025, p. 2). As the only input control, it may explain the phenomenon recently identified by David Berry as "prompt anxiety" (2025). This indicates that prompts can be read as a gamble with uncontrollable results, causing a sense of anxiety. There are overlaps between this experience of prompt anxiety and being faced with an empty canvas, one may argue. The creation of an image on a canvas may similarly rely on skill and experience but the image differs significantly from the prompt, because: "The image is syntactically and semantically dense in that no mark may be isolated as a unique, distinctive character (like a letter of an alphabet), nor can it be assigned a unique reference or 'compliant.' Its meaning depends rather on its relations with all the other marks in a dense, continuous field. A particular spot of paint might be read as the highlight on Mona Lisa's nose, but that spot achieves its significance in the specific system of pictorial relations to which it belongs, not as a uniquely differentiated character that might be transferred to some other canvas" (Mitchell 2013, p. 67)

Figure 3: Albrecht Dürer, Self-portrait (1500).

If we want to summarize Mitchell's point it indicates that art relies on the whole image and not necessarily the components or parts, to become meaningful. In other words, the artwork is always more than just the sum of its parts. If one isolates a section of a painting, or fixates on a pixel, it cannot stand in for the whole or the meaning of the artwork. I offer an example of my own experimentation with one of the most famous self-portraits in art history, namely the full-frontal portrait of Albrecht Dürer (Fig.3). By prompting ChatGPT with the phrase: "Create a contemporary image inspired by Albrecht Durer's Self-portrait". The results are interesting but far from profound. The most noticeable element is that Dürer is interpreted as an inventor (my own description). His facial markers appear similar in all three AI-generated images, but the background differs (Fig. 3). The artist is represented full-frontal with a halo in the first, with a brush in one hand in the next image as an obvious symbol of his trade, and in the last image the background is filled with humanist and Renaissance-like elements.

Figure 4: Portraits created with ChatGPT-4 prompt "Create a contemporary image inspired by Albrecht Durer's Self-portrait".

What insights can one glean from these ChatGPT-4 generated portraits? The experiment links with the research of Helena Barranha (2023) in which she investigated derivative images of a well-known Portuguese artist, Aurélia de Souza. Barranha used prompted portraits to compare and analyse possible new insights with the original self-portrait. She concludes that different AI platforms e.g., Microsoft Bing Image Creator and Midjourney, produce "considerably different" (2023, p. 291) images from the same prompt. The most perplexing finding is that one of the images created by Barranha's prompt to Bing Image Creator "A new version of the self-portrait of the Portuguese painter Aurelia de Souza" (2023, p. 290) not only turned the female artists into a male (Fig. 5) but looks very similar to my prompts used above to recontextualize Dürer's self-portrait (Fig.4, middle).

Although, a coincidence and not substantially enough explored here to draw conclusive observations from this overlap, it does suggest that the data set used and the links to certain tags, metadata and keywords are indeed limited. It may suggest that the self-portrait tag and its links to images provide a narrow set of possibilities. The notion that self-portraits can be associated with an artist holding a brush is delimiting and even cliched. Also given that in both the Dürer and the De Souza self-portrait examples, neither is holding a brush, and they are also both full-frontal portraits, the prompted portraits produce more anomalies than similarities. In fact, art historically the full-frontal confrontation of these two self-portraits is strongly associated with its impact, contribution and meaning in the tradition of self-portraiture. What appears different in the prompted portraits are the backgrounds (more effeminate in De Souza example) (Fig.5) and the three-quarter positioning of the face is an oversight of the most obvious hermeneutical key to the self-portraits.

Figure 5: Portrait created with Bing Image Creator by Helena Barranha with prompt "A new version of the self-portrait of the Portuguese painter Aurelia de Souza" (2023).

The AI prompted portraits of the two self-portraits are generated through image recognition that works with metadata or meta tags accompanying the image, e.g., "self-portrait". The process entails building deep neural networks that analyze each image pixel. These networks are fed as many labeled images as possible to train them to recognize related images. A data set with images and their labels is gathered, meaning, a self-portrait image needs to be identified as a "self-portrait". Then a neural network is provided with and trained on these images. Convolutional neural network processors perform well in these situations, as they can automatically detect the significant features without any human supervision. In addition to multiple perceptron layers, these networks also include convolutional layers and pooling layers. The images that are not already in the training set is fed into the system to obtain predictions.

However, for the purpose of art historical insights, the preliminary results represented here provide more insights on the AI text-to-image generation process than contributing in a significant manner to understanding the art-making process of the artists. One may even venture to observe that prompting portraits through AI text-to-image generators is an inaccurate "science", and its creativity remains superficial. It also echoes Mitchell's analysis above, that the image requires to be treated on its own terms. No amount of tagging and description or added meta-data can conjure the Dürer image, because image and text operate on different levels as "*opposite* kinds" (Mitchell 2013, p. 47).

3 Art tradition and data image sets

What can we learn about the difference in approach followed by the art tradition when compared to the creation of portraits by utilising data image sets? How does the creative process differ? In what follows, the next portraits are briefly introduced and compared, namely *Portrait of Edmond de Belamy* (2018) by the Obvious-collective, the *Faceless Portraits Transcending Time* (2019) series by AICAN + Ahmed Elgammal, George Rouy's *Fear of My Own Oblivion* (2022), and finally Hisox's AI-generated self-portrait (2024). Do these portraits interpret and expand the art tradition through the loaded datasets?

Three of the portraits were generated by utilising datasets to train the algorithm, and one is painted by human hand. I am not suggesting that painting by a human hand is not also a form of mediation. However, I am trying to show that human painting embodies a tradition of portraiture through a particular context in time and space. It represents a tradition through experience and duration.

First, some context is required regarding how art traditions view novelty or newness (creativity), as formulated by the renowned art historian EH Gombrich in *Art and Illusion* (1961). It is through the notion of "corrections" or revisions to the art tradition, or schemata that the artist creates. "Making precedes matching" Gombrich famously affirmed. He "proposed that artists, before they ever dream of copying what they see before them, make pictures by manipulating inherited 'schemata' that designate reality by force of convention. At some point an artist compares a pictorial schema to direct observation of the world, and on that basis presumes to correct the schema," Christopher Wood (2009, p. 836) explains. The tradition is expanded because the image "then enters the stock of available formulae until some later artist holds it up to the world and

ventures a further adjustment" (Wood 2009, p. 836). Not all things in terms of image-creation are always possible (e.g., impressionism during middle-ages), and cultures also determine or provide a horizon for what is possible in terms of creation.

Gombrich also states: "We mistake the character of this skill if we speak of the imitation of nature. Nature cannot be imitated or 'transcribed' without first being taken apart and put together again" (1960,113). In short, the artist creates not innocently or with an innocent eye from scratch but always within a tradition that guides what is possible in that time and place. In fact, when comparing the images created by GAN (generative adversarial network) the AI generated images have a tendency not only to perpetuate the tradition but also "uncritically reinstat[ing] a formalist view of art history" but it "it recreates a narrow style-centric 'historical modernism'", observes Jim Berryman (2024). This overdetermined formalization on the part of AI generated images utilizing GAN is described as "computational formalism" (Wasielewski & Cubitt 2023). In other words, mechanic learning used to generate art follows a demarcated style and history and provides a remix of the input data styles – in that sense it does create a new image but one that is predetermined by the data set. By being predetermined by the input it actually reinforces and repeats the tradition without making the necessary corrections or altercation as described by Gombrich's schemata.

Moving to the examples: In the first case, the *Portrait of Edmond de Belamy*, is generated through the combined effort of the Paris-based art collective known as Obvious (consisting of Hugo Caselles-Dupré, Pierre Fautrel and Gauthier Vernier) utilising a GAN. They explain, "The algorithm is composed of two parts. 'On one side is the Generator, on the other the Discriminator. We fed the system with a data set of 15,000 portraits painted between the 14th century to the 20th. The Generator makes a new image based on the set, then the Discriminator tries to spot the difference between a human-made image, and one created by the Generator. The aim is to fool the Discriminator into thinking that the new images are real-life portraits. Then we have a result" (Christie's 2018). Adding that "We found that portraits provided the best way to illustrate our point, which is that algorithms are able to emulate creativity" (Christie's 2018). Noteworthy is their references to *fooling* the Discriminator and the *emulation or appearance of creativity*, that alerts readers to the fact that they are not necessarily aiming at an ontological understanding of creativity or providing corrections to the schemata.

The following example comes from a series entitled *Faceless Portraits Transcending Time*, (the title already provides a hermeneutical key) which is a collaboration between AICAN and Ahmed Elgammal from the Art and Artificial Intelligence Laboratory at Rutgers University. The GAN utilised by the Obvious -collective in the previous example has now been upgraded to a CAN – a creative adversarial network. The portraits were produced based on training sets of five centuries of European canonical art (mainly portraits and skulls). The creator had two distinct outcomes in mind, one surreal, one abstracted from Renaissance portraits. AICAN generated possible portraits, and Elgammal curated them, selecting the most compelling images. Training eschewed emphasis on a single style, period, or aesthetic, allowing for a broad range of potential outcomes. Does this imply matching before making, compared to how Gombrich explained the creation process in the art tradition?

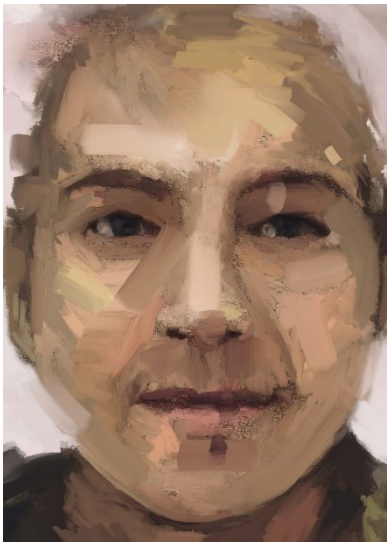

Figure 6: AI-generated Self-portrait by Hiscox (2024).

It is interesting that Elgammal positions AICAN as a "solution" to art, while one reviewer describes the project at best as "the portrait of an algorithm." Elgammal admits as much when he notes: "Usually portraits capture something about the people depicted. Here the image has no reference to a specific person or a historical point. It's totally faceless. The portrait becomes a very abstract concept that doesn't have a particular meaning or context" (Bogost 2019). In Elgammal's estimation, the portraits without referents evoke emotion that allows viewers to connect deeply. However, opinions vary on this overtly optimistic reading of the faceless portraits.

What are the responses of viewers and critics? Not overwhelmingly positive. Described as "eerie portraits created by disturbed AI", an "artistic mash-up, trippy, uncanny, harrowing, and a techno-demo". Ian Bogost (2019) argues that placing the AI-generated portraits in a gallery immersed it within the art trajectory of the 20th century, meaning that "putting something in a gallery or museum makes it art, rather than the opposite". [Recall the contribution of Marcel Duchamp and Andy Warhol in this regard] The AI portraits also "betray an unforgivable ignorance about the supposed influence of the source material" (Sharp in Bogost 2019). In other words, they replicate the schemata but do not understand or remember (embody) the tradition in which they participate. And importantly, it is the human agent that decides what will count as a revision or correction to the schemata.

The ethical dilemma of the artist's contribution and compensation for images assimilated into datasets is brought to the fore in Hisox's recent project (Fig. 6). What the "self-portrait" consists of is "a coding programme called Facer that merges 40 artists' headshots together to create one singular headshot. This was then stylised into a self-portrait mimicking the style of a traditional oil painting" (Hiscox 2024). All the artists are acknowledged and were compensated for their contributions.

However, the Hiscox self-portrait is more akin to an average of faces supplied by artists when utilizing the programme *Facer*, developed by John W Miller (2019). Miller describes the algorithm as "*Facer* is a Python package I wrote that simplifies the process of creating average face images". It works on the principles of face detection, alignment, and averaging. In terms of the broader argument of how the schemata has been broadened through the artists traditionally, it means the *Facer* algorithm does not make but averages, tries to get a mean average between the forty faces that serve as the data set. One may argue that matching is similarly a process of averaging but yet the processes differ: in matching a new face appears, while averaging makes the face disappear behind a mask of similarity or endless sameness.

The outstanding quality of the AI-self-portrait is the uncanny stare of the eyes, which appear to drift in the sockets. The painterly style is similarly added to the surface and not necessarily integrated into the image.

Finally, just to further complicate matters, the portrait of the British artist George Rouy is introduced. Rouy reflects as follows on the portrait *Fear of My Own Oblivion* (2022), (the

title already suggests human fears in the face of extinction): “A lot of the works are very personal, but they’re also not at the same time […] I think it’s important that they’re not autobiographical. There needs to be enough space so that the viewer can enter it and not just assess it as these stories, […]. They’re almost like symbols” (Rouy & Mills 2024). If I understand Rouy correctly, he wants to interface the space between intimate autobiography and more distanced symbols, the private and public.

George Rouy is described as one of the most exciting contemporary figurative painters because his paintings, like great artwork before, are intense and expressive depictions of complicated psychological states that render internal experiences external (Westall 2024). How does Rouy’s portrait compare to the GAN, AICAN and *Facer* examples?

Figure 7: George Rouy Fear of My Own Oblivion (2022)

Rouy’s portrait is not an emblem of realism but is layered and even appears veiled – it constitutes a “phantom painting” (Lawson-Tancred 2024). The painterly technique, although experimental, is yet controlled. The artist deliberately does not want to create portraits as true likenesses but opts to deconstruct the face. “As the face is increasingly eliminated as a signifier or signpost in his paintings the hands take on a new role”, according to a recent press release (Hauser & Wirth 2024). The link between abstraction and figuration hovers on the brink of collapse - an intuitive interplay between chaos and control (Binlot 2025). Rouy acknowledges the role of intuition in his creative process: “Intuition is such a vague thing to say, but it’s such a human and important thing, because it’s applied by what we know and you know what we don’t as well” (Binlot 2025). Thus, for me, the human hand and innovation to the schemata is evident. In an interview Rouy identifies the influences on his portraits as Francis Bacon, Lucian Freud and Jenny Saville amongst others (Binlot 2025). Rouy thus positions his work thoroughly in the schemata of portraiture. Although, the assessment is made with the knowledge that the portrait was indeed created by a human artist with paint on a canvas. The portrait is enigmatic, haunting and provides a good comparative image for the Hiscox self-portrait created through the leveraging of forty artists’ paintings of themselves.

4 Conclusion

By means of a conclusion, it is asked what or who is returning our gaze in these portraits examined above? The portrait as genre in art history is renowned for the engagement between the subject and the object, the artist and the sitter, the self and the other. Evidently the returned gaze in the AI generated portraits, whether generated through prompts or dataset, constitute a new and surprising gaze.

How is the image-text debate reinforced in prompted portraits, or are we dealing with a new compensation? In my analysis the asymmetry and dominance of text outweighed the creative image-making. In addition, if the notion of the schemata as integral part of the art creation process that works through making before matching, how does this formula play out in portraits created by predetermined datasets? In the examples discussed it is

proposed that the algorithm first matches before making, which indicates another approach to creativity all together.

Can an artwork generated by using AI be creative? Yes, I think so. Is all art made by humans creative? No, not in my experience. AI is a sophisticated and intelligent tool, but it is a tool, nevertheless. Tools such as oil painting, mirrors, and photography revolutionised art creation, and that is the similar contribution of Creative AI.

References

Barranha, Helena. 2023. Reinterpreting artists' self-portraits through AI Derivative Creations. In D. Lengyel & A. Bienert (Eds.), *EVA Berlin 2023: Elektronische Medien & Kunst, Kultur und Historie*: Staatliche Museen zu Berlin - Preussischer Kulturbesitz.

Binlot, Ann. 2025. George Rouy explores the human body as both subject and medium. *Document*, April 25, 2025. https://www.documentjournal.com/2025/04/george-ruy-explores-the-human-body-as-both-subject-and-medium/

David M. Berry. 2025. Prompt anxiety. *Stunlaw. Philosophy and Critique for a Digital Age* (June 6, 2025). https://stunlaw.blogspot.com/2025/06/prompt-anxiety.html?m=1

Du Sautoy, Marcus. 2019. *The creativity code: Art and innovation in the age of AI*. The Belknap Press of Harvard University Press: Cambridge, Mass.

Berryman, Jim. 2024. Creativity and Style in GAN and AI Art: Some Art-Historical Reflections'. *Philosophy & Technology* 37 (2): 61. https://doi.org/10.1007/s13347-024-00746-8

Bogos, Ian. 2019 The AI-Art Gold Rush is here'. *The Atlantic* (March 6, 2019) https://www.theatlantic.com/technology/archive/2019/03/ai-created-art-)

Christie's. 2018. Obvious and the interface between art and artificial intelligence. December 12, 2018. https://www.christies.com/en/stories/a-collaboration-between-two-artists-one-human-one-a-machine-0cd01f4e232f4279a525a446d60d4cd1

Clough, Patricia Ticineto, ed. 2018. *User Unconscious: On Affect, Media, and Measure.* Minneapolis: University of Minnesota Press.

Drimmer, Sonja, and Christopher J Nygren. 2023. Art History and AI: Ten Axioms. *International Journal for Digital Art History* 10:5.03-5.11.

George Rouy. The Bleed, Part I. 2024. Press release Hauser & Wirth, London, October 7 - December 21, 2024. https://hauser.prezly.com/george-rouy-the-bleed-part-i

Gombrich, Ernst H. 1960. *Art and Illusion. A Study in The Psychology of Pictorial Representation*. Princeton, NJ: Princeton University Press.

The first true self-portrait of AI is revealed | Hiscox Group. (November 12, 2024). Retrieved August 8, 2025. https://www.hiscoxgroup.com/news/press-releases/2024/27-11-24

King, Michael. 2023 'How to Visualise Emotions and Create Amazing Portraits with Midjourney AI Image Generator'. *Medium* (February 14, 2023)

Kreminski, M. 2025. Endless forms most similar: The dearth of the author in AI-supported art. *AI & SOCIETY*. https://doi.org/10.1007/s00146-025-02326-6

Lawon-Tancred, Jo. 2024. George Rouy has landed his first Hauser and Wirth Show at age 30. What's behind his stratospheric rise? *Artnet*, October 25, 2024. https://news.artnet.com/art-world/george-rouy-hauser-wirth-2547149

Mitchell, W.J.T. 2013. *Iconology. Image, text, ideology*. Chicago & London: University of Chicago Press.

Ruoy, George & Charlie Mills. 2024. *Selected Works 2017-2023*. Tarmac Press.

Simone, Natale and Leah Henrickson. 2024. The Lovelace Effect: Perceptions of Creativity in Machines. *New Media & Society* 26 (4): 1909–26. https://doi.org/10.1177/14614448221077278.

Wasielewski, Amanda & Sean Cubitt. 2023. *Computational Formalism*. The MIT Press.

Westall, Mark. 2024. Hauser & Wirth Now Represent George Rouy. *FADmagazine*, May 23, 2024. https://fadmagazine.com/2024/05/23/hauser-wirth-now-represent-george-rouy/

Wood, Christopher. 2009. E.H. Gombrich's 'Art and Illusion: A Study in the Psychology of Pictorial Representation', 1960. *The Burlington Magazine* 151 (1281): 836-839.

Zylinska, J. 2020. *AI-Art. Machine Visions and Warped dreams*. London: Open Humanities Press.