

AI in Artistic Creation: Tool, Gadget, or Aesthetic (R)Evolution *Text-Image Platforms*

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ABSTRACT: This article examines the evolution of AI-based image creation platforms using GANs and Text-Image procedures. It analyzes the commercial predominance of their objectives, as well as their tendency to neglect in-depth reflection on the image as a form of language, and the consequences these choices have for this form of creation.

By exploring the historical development of AI, the article shows how today's platforms, despite, or because of, their ability to simulate reality in a realistic or even hyper-realistic way, are engulfed in a quest for neutrality or Disneyfication of the image, and must impose successive self-censures that limit their creative diversity that, ultimately, only perpetuate the underlying fears and prejudices of the US society from which these platforms originate. The author calls for a polysemic approach to the image, integrating aesthetic and theoretical perspectives that make Text-Image a genuine tool for reflection on the nature of the visual, comparable to what conversational AI is for oral language. In addition to a number of examples, the author offers a visual case of Text/Image analysis.

This work on image generation by platforms working with text/image algorithms is part of a larger ongoing research project on AI and its implications for visual artistic creation. Because it deals with a new field that is still under construction, and therefore in constant and rapid evolution, some of the results presented here may find themselves outdated in a short period of time. Nevertheless, as we indicate in the conclusions to this article, we feel it is important and urgent that aesthetic and humanities/social sciences analyses should be involved in the very formation of this new form of creation.

1. INTRODUCTION

Image creation has long been a project and ambition of AI, yet its development has often been considered secondary to that of conversational or textual AI. Thus, the means, procedures and forms of research that have accompanied the development of these two forms of AI have developed in different ways.

1950, with the introduction of Alan Turing's famous test [Turing, 1950], appears to be one of the earliest dates in AI research, but it wasn't until 1956 [McCarthy, 2004] that the term appeared for the first time, and in 1964, with ELIZA, that the first practical attempt at a conversational form of artificial intelligence was

developed. The aim of this program [Pickover, 2021], which takes the form of a psychotherapeutic exchange, is clearly, according to its developer Joseph Weizenbaum, to study the nature of the language of communication between man and machine. In this way, it is a double reflection on language, both human and computer.

It was not until eight years later, in 1972, that artist Harold Cohen developed an autonomous image-creation algorithm [Roth, 1978]: AARON. Initially, the program enabled the computer to draw abstract forms, but later, in the 1980s, Cohen oriented it towards the creation of figurative forms, before returning, in the following decade, to the original abstract work. AARON's artworks have been exhibited several times at such prestigious art events as Documenta 6 in Kassel in 1977, the Stedelijk Museum in Amsterdam in 1978 and, most recently, in 2024, at the Whitney Museum in New York.

For our purposes, it's important to emphasize that this work, recognized as pioneering in the creation of images by an autonomous algorithm, was carried out in the context of artistic creation and by an artist. Nevertheless, it was preceded,

at a very early stage, by work on images carried out in the context of global AI research. As early as 1963, Thomas Evans considered images to be a fundamental tool for the elaboration of artificial intelligence programs and developed the ANALOGY program [Evans, 1963], which used visual creation as a basic element for his work in this field. Despite its very promising results, image creation remained a relatively peripheral field, and it wasn't until 2012, with the arrival of Deep Learning, working on the basis of neural networks [Schmidhuber, 2022] and above all, from 2014 onwards with the emergence of GANs (Generative adversarial network) that autonomous image creation took off [Mazzone & Elgammal, 2019]. GANs are an autonomous learning system based on two antagonistic neural networks, one responsible for generating the image, the other for discriminating those that do not appear sufficiently "real". The two networks train each other [Callens, 2022].

Two points are of particular interest to our work. The first is the fundamental importance given to the "realism" of images in this autonomous creation technology, and the second is the fact that this system has been commercialized on a large scale very quickly. As early as 2017, i.e. 3 years after their emergence, major technology companies appropriated this technology, GANs, in its Text-Image form (creation of an image from a text, or *prompt*, request), and launched or attempted to launch their platforms in a market that had become highly competitive [Abbott & Thibault, 2024]. Indeed, it's important to remember that GANs have undergone other methods of development, particularly in the form of Image-Image, and that, apart from GANs, other possibilities for visual creation were being developed. If the GANs were successful, it was mainly because of their "good results" or, more precisely, because of their "spectacular realism" (in literary terms). The choice of GANs in Text-Image form, in addition to its rapid success, raises many questions, particularly about its ability to become a real creative tool.

2. THE LIMITS OF TEXT-IMAGE

The development of Text-Image has, in fact, suffered from several biases, not all of which are technological in origin, but which also derive from the absence of a solid theoretical basis for this form of creation. These problems are present as much in the objectives and the conception of the platforms, as in the restrictions they have had to impose on themselves to compensate for their inability to provide other, more relevant responses to the criticisms levelled at them. These restrictions, combined with the technological limitations that make this form of creation more spectacular than useful, have repercussions on research, where little theoretical or practical work is devoted to this form of visual creation. So, when theorists or artists do take up this tool, it's usually to denounce or demonstrate these biases. It's these various aspects that we're now going to examine in detail.

1 - limits to the objectives

The development of Text-Image platforms was primarily driven by commercial criteria. In the race to establish themselves in front of AI users and capture a highly promising share of the market, it was necessary for the major technology companies to offer a high-performance tool that could serve as a showcase for their various AI platforms, and thus attract and attempt to win the loyalty of the general public. Text-image seemed to be a tool that matched these needs very well: it offers the most universally accessible form of image-generative AI, even the most democratic (with free versions) thanks to its direct and simple use [Herliyani, Agustini, als, 2024].

In this "exclusively" or "principally" commercial perspective, the images were created from a single textual request (single *prompt*) and the results, realistic or even hyper-realistic (photographic), had to be immediately understandable by a non-expert public [Soma Shiva Sai Babu & Rekha, 2024]. The creation and development of this form of visual creation was therefore highly pragmatic, based above all on the "verisimilitude" of the image and the rapidity of the results. All this was done in great haste, fuelled by the competition between AI platforms, whose aim was reduced to demonstrating the ability of an algorithm to create ex-nihilo images as realistic as those produced by photography.

2 - limits of conception

In this context, where immediate and eminently pragmatic results were expected, there was little space for in-depth research into the nature and structure of the image and visual perception, conceived as a form of communication and expression. Development work was mainly attributed to computer scientists and graphic designers [Oppenlaender, 2022], and excluded art historians, semiologists, artists and philosophers specializing in the image, marginalizing their reflections and contributions on the image. This point constituted a significant and fundamental difference with the work of developing and implementing conversational AI, which from the outset was accompanied by deep reflection on language, its nature and its structure [McTear, 2021]. In Text-Image platforms, and in contrast to Text-Text AI, all polysemous content must be reduced to create images that can be read and understood by everyone at first glance. Images thus become self-evident, needing no explanation or context to be decoded.

By establishing the principle of "single prompt" image creation, i.e., the creation of images from a single text given by the user, used by almost all of these platforms (Stable Diffusion may, occasionally, be an exception), the platforms opted for great ease of work for their algorithms by limiting the possibilities given to users and making any exchange and modification of the visual created impossible [Ramesh & al., 2021]. Indeed, any request to adjust an image is impossible, and results in the creation of a new ex-nihilo image by the machine, without it being possible to preserve any element existing in the previous one. This unique prompt is, moreover, limited (again to simplify the machine's work) by the number of words that can be taken into account by a platform, typically between 75 and 150¹. This makes it virtually impossible to create complex or precise images. The algorithm starts from a global understanding of the prompt, rather than the specified details, which avoids or reduces the number of errors [Radford et al., 2021]. In this way, the most frequent concepts or those easiest to visualize are preferred, while visual elements that do not coexist in the training data are eliminated, thus avoiding any apparent visual inconsistency.

3 - Self-censorship

The most important technology companies offering image creation platforms come from and are domiciled in the USA, so it's not at all surprising that they follow the pressures and criticisms that characterize this society today, and convey its values. So, far from responding or seeking to respond to a universal ethical ideal, they are subject to and react specifically to US legal and social fears, which occupy a very (too) important place on AI platforms. To satisfy the laws and expectations of the various countries or regions in which they operate, they have to add, to the limits imposed by the USA, those more specific to the place in which they operate. This accumulation of restrictions means they lose some of the "qualities" they used to rely on to win over the public, as the main and often only response they manage to give to the criticism levelled at them (sometimes pushed and encouraged by rival companies) is self-censorship.



Figure 1: Image created by DALL-E for a prompt asking for a Hyperrealistic Landscape

This self-censorship seems to be no more than a short-term, case-by-case solution to the many legal and social conflicts and fears generated by the lack of clear, solid conceptual positions for the "Text-Image" tool. In fact, the areas and forms of these self-restrictions are multiplying all the time, and the list of self-imposed precautions is getting longer. For example, platforms consider any representation of a nude body as pornographic, or, to "prevent" the creation of fakes, they restrict the photographic effect (DALL-E) of their "creations" to guard against any possible "misuse" of them (fig. 1). These measures have very limited effectiveness, and

¹ This information is rarely provided by the platforms themselves and is mostly found in blogs and discussion forums, such as "reddit.com". Copilot's website, for example, states only that "Copilot is currently limited regarding the number of words it can process per prompt."

mainly concern the private use of images created by AI. Indeed, deep fakes make very little use of images, preferring the simpler and more effective use of text templates. In cases where a still image is used, retouching an existing photo is far more efficient than the ex-nihilo creation provided by the AI text-image.

In addition, one of the points on which the platforms remain deliberately unclear, and which comes on top of the restrictions already mentioned, is that of the origins of the images they use, because of the copyright issues involved. Indeed, GANs need to train on a very large number of images to become efficient, and the platforms use the images most frequently posted on the various social networks for this training, but also to orient their "creations" in the direction of user demand. These images posted by everyone are their sources. However, to elude legal disputes and the complicated infrastructure required to obtain authorization from different users, they simply avoid any too obvious resemblance to an existing image, without trying to solve the problem.



Figure 2: Firefly confuses a supremacist image with a supremacist image

To these restrictions must be added control over images showing explicit violence, or conveying polarizing, hateful or discriminating political discourse. This control is exercised, as with the previous ones, solely on the basis of the words included in the *prompt*. So, for example, Copilot (Microsoft) refuses to show a *Suprematist* image, named after the Russian artistic movement of the early 20th century, for fear of confusion with white *Supremacism*, the movement that advocates the superiority of white men, even though the platform knows and has perfectly identified the difference between the two terms.

But Firefly (Adobe) responds to the same request to create a *Suprematist* image, by creating a typical *Supremacist* one, clearly confusing the two terms (fig. 2). There thus seems to be a considerable lack of clarity in the very notions that these platforms use and are capable of handling.

3. THE CONTRADICTIONS



Figure 3: An apartment in Berlin, Copilot



Figure 4: A house in a landscape, Stablediffusion

Despite the multiple self-censorship they try to apply across the board, text-based image-generating platforms are not immune to the biases implicit in the US society from which they originate, and have difficulty, for example, in dealing with issues of social inequality. To avoid their images being used as “fake”, Dalle makes, according to its rule, a non-hyperrealistic representation when asked to show “a rich young man”, but on the other hand, the same platform derogates from this principle and gives a photographic image for “a poor old man”. For Dalle, it wouldn't occur to anyone to use the latter to create a “fake”. The case clearly illustrates the Disney vision that these platforms want to convey, and that they believe they are in front of their users' desires. Implicitly, and therefore

much more difficult to identify as a form of exclusion [Bourdieu, 1979], these platforms tend to give a rich or well-off context for all the images they create, even if nothing in the message implies this. "An apartment in Berlin" is above all a beautiful upper-class apartment in Berlin (fig. 3), "a house in a landscape" is a beautiful house architect's work (fig. 4), "a car reflected on a surface" is always a powerful, luxury car (explicit BMW brands, even) and/or sports car (fig. 5), and so on. Most Text/Image creation platforms seem either unaware of the notion of "poverty" or have difficulty making it visible. Thus, even when the prompt explicitly asks to create "a black cat in a *poor* apartment", Copilot pudimentarily transforms the word "poor" into "modest" showing itself incapable of materializing this concept and, in its place, presents a picture that has nothing particularly austere at all (fig. 6). Even more eloquent examples are produced by Firefly from the prompt: "a poor young man" (fig. 7), where just a few (blurred) elements in the background may suggest that the word has been retained.

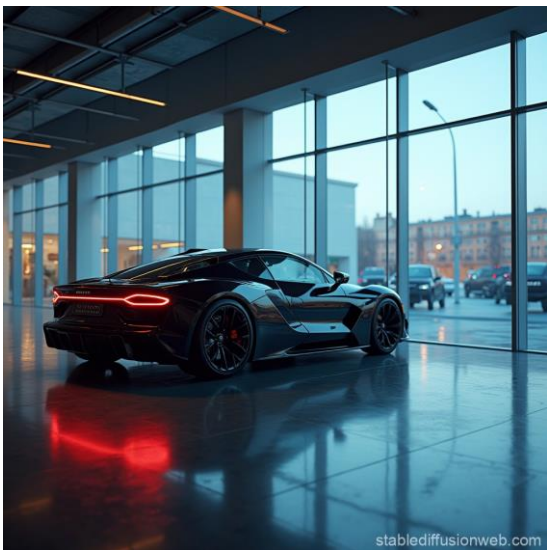


Figure 5: *A car reflected on a surface, Stablediffusion*

4. CONSEQUENCES

The cases and subjects on which platforms must exercise self-censorship can, and probably will, continue to multiply exponentially, because the basic issue has not been addressed or taken into account: no image is neutral. The very fact of giving a "positive" value to certain terms implies a form of devaluation for its opposite. The multiplication of restrictions that engineers impose on their algorithms at best only masks the problem for a time, as they fail to seek out and consider the possibility of creating images that generate critical analysis.



Figure 6: *A black cat in a poor apartment, Copilot*

These lacks lead to an impoverishment of images, whose quantitative proliferation does not mask their loss of diversity. All the creations of these platforms have an unmistakable "family resemblance" to publicity imagery, and tend to impose a simplified visual uniformity more conducive to "gadgetization" and consumerism than to the "democratization" of AI.



Figure 7: *A poor young man, Firefly*

These limits are perfectly perceptible in the small amount of theoretical or practical research that this form of creation generates. While many visual artists make extensive use of AI – including strategically to appear as artists of "their time" – they overwhelmingly prefer other forms of AI to Text/Image, in particular video, like *I'm Here 17.12.2022 5/44* by Holly Herndon and Mat Dryhurst (exhibition *Apophénies, interruptions. Artistes et intelligences artificielles au*

travail, MNAM, Centre Pompidou Paris, 2024), or conversational forms, including for visual artists, like *Tales of Narrativelessness* by Eric Baudelaire (same exhibition at the MNAM), or even immersive forms, which are nonetheless often reputed to be as playful and easy as the images produced by Text/Image, like the exhibition *Pixel* by Miguel Chevalier (Grand Palais Immersif, Paris, 2024).

The art market as a whole has taken AI-created art on board, and sometimes manages to sell it at very high prices: for example, *Everydays: the First 5000 Days* by Beeple (real name Mike Winkelmann), sold for \$69.3 million; *Portrait d'Edmond de Belamy*, by the Obvious collective, sold for \$432,500; or *The Portrait of Alan Turing*, created by the Ai-Da robot and sold for \$1.1 million. However, these cases remain rare for the moment, and mask the fact that sales of AI-created art are almost non-existent in the mid-to-low end of the market. If, in 2022, this form of creation (art made by AI) broke the 500 million euro barrier in worldwide sales [Maubant, 2024], this sum needs to be put into perspective by comparing it with that of all AI investments, which in the following year accounted for 241 billion dollars. Artistic creation thus corresponds to just 0.207% of total investment in AI. As for the global art market (Art Basel / UBS annual report), which was down by 4% on the previous year to a value of just \$65 billion, AI creations accounted for just 0.769% of the total. But what is most significant for our research is the fact that none of the works cited above used Text/Image platforms, and that these had no place in art market transactions.

In terms of theoretical research, the situation is no better. In a preliminary survey we carried out on the catalogs of the BnF (Bibliothèque nationale de France), Google Scholar, Library of Congress and NY Public Library, and which will be the subject of a later publication, we found that a great deal of confusion reigns in the field. For example, a search using the keywords "Art AND Artificial intelligence" yields a large number of hits, but very few of the results actually correspond to the subject: 3% for all BnF titles and 5% on Google Scholar. By way of comparison, for searches such as "Art AND Photography", or "Art AND Video" on the same catalogs, the relevance rates are well over 50%, even 66%. What's more, in the precedent results, no search is devoted to the question of Text/Image creation. Conversely, more than

half of them focus on the "ethical" issues of artistic creation and AI, confirming the place that the legal and social fears we mentioned above are taking in this field.

5. CONCLUSION

Text-image relationships are far from new. They are part and parcel of the entire history of art, and can be traced back to the very origins of writing, where both text and image converge. They are still intertwined in Egyptian hieroglyphs and medieval illuminated manuscripts. And while the possibilities offered by a single prompt using between 75 and 150 words may seem particularly limited, a single verse from Homer or the Bible has nourished the imagination of artists and their works, sometimes for centuries.



Figure 8: one on three chairs, 1965, Joseph Kosuth, MoMa, New York

We should also mention contracts between patrons and artists, which for several centuries in the West constituted a very common form of agreement regulating the execution of a visual creation, sometimes in great detail, based on a text. Throughout the Middle Ages and the Renaissance, these contracts were very frequent, even if cases where both the text of the commission and the artwork produced have been preserved are rare [Poilpré et al., 2013]. These commissions give us many clues about the passage from text to image and show us that, on the whole, the result very rarely corresponded exactly to the written commission, without it being possible to determine whether the change of program was due to the artist's freedom, a change of mind by the patron or a new agreement between the two. One of the best-known examples of a work made by contract, and therefore of the relationship between the patron and the artist (and between text and image), is Enguerrand Quarton's *Coronation of the Virgin*

[Sterling, 1983], which serves as the basis for a visual reflection that the author is currently developing on the same subject.



Figure 9a: Gilles, 1718-1719, Antoine Watteau, Musée du Louvre, Paris

In the contemporary period, the Text/Image relationship has remained prolific and has been a source of numerous creations. Let's recall the fundamental role it played in the creations of conceptual art, illustrated by Joseph Kosuth's famous creation *one on three chairs* (fig. 8), in which the artist presents three versions, corresponding to three different notions, of the same chair: the physical object, its definition and its image. This was a reflection on creation and language, which also included a humorous allusion to the mystery of the trinity. In addition to the *Enguerrand* project mentioned above, this research into Text/Image also includes other creations, in particular *Gilles*, inspired by this Kosuth creation. *Gilles* is based on a much earlier work (1718-1719): Watteau's painting of the same name (Musée du Louvre, also called *Pierrot* - fig. 9a), for which I ask ChatGPT to give as detailed a description as possible (fig. 9b), without giving its title or author, but just the image. Subsequently, I use this description as a prompt from which various Text/Image platforms will produce images (fig. 9c) which I relate to each other, applying the same Kosuth conceptual principle: three different visions of the same creation. From this same image, I then ask the AI to analyze the colors and the surface they occupy in the painting (fig. 10), and then to create an abstract image, again using the Text/Image principle, from these elements.

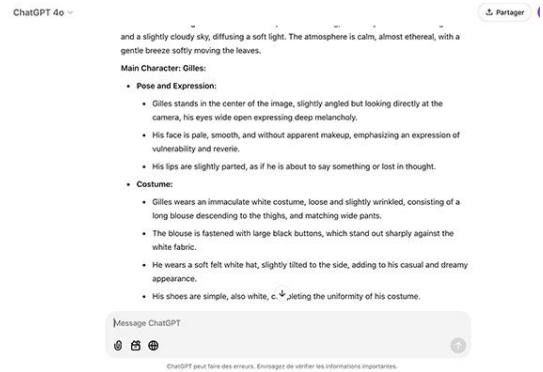


Figure 9b: Gilles, prompt, 2024, Velasco & ChatGPT



Figure 9c: Gilles, 2024, Velasco & Firefly.

The main aspects to be retained from these creations is its attempt to appropriate a technology in order to explore its limits and possibilities, and to understand how the machine “sees” and what it “sees”, but above all, the desire of this creation to help us understand what we, human beings, see, what we don't know how to see, and what we don't want to see. Indeed, the current problems of Text/Image creation platforms can, in this context, only be seen as natural within a disruptive technological evolution, and that, all things considered, can be compared to those experienced by the image at the time of the advent of printing, where it followed a very significant loss of quality compared to the manuscripts that preceded it. This comparison seems all the more apt given that the emergence of this mass-production technology enabled a form of “democratization” of writing, books and images, reminiscent of that which accompanied AI and its use by Text/Image [Barbier, 2012].

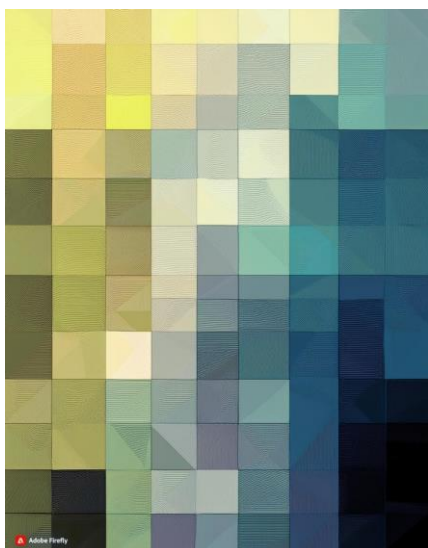


Figure 10: Gilles 02, 2024,
Velasco, ChatGPT & Firefly

The losses in quality and diversity generated by technological advances are therefore not irreversible, and can be made good. To achieve this, we need to bear in mind that, under no circumstances is the image a mere transcription of the text, but that it carries its own content and language, which may even contradict or modify the meaning of the writing that accompanies it or, as in the case of a prompt or commission contract, is at its origin. For Text/Image to become a genuine creative tool, it must integrate theoretical research and practice, including the participation of researchers in the field of images (and not just computer science) who develop a reflection on the very nature of the visual, as well as the intervention of artists (and not just graphic designers) who experiment with the multiple possibilities of this tool. Indeed, we are all in the process of discovering this instrument, AI, including (or especially) the very professionals who have built and developed it, and consequently we are all, users and designers alike, in the process of learning about it, understanding it, but also defining its uses and possibilities.

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