AI, Automation, Creativity, Cognitive Labor

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Introduction

Let me begin with a somewhat bizarre article from the Frankfurter Allgemeine Zeitung from 29 August 2022. Under the title, "Who's afraid of DALL-E 2"[1], it addresses the fact that software like DALL-E 2, Midjourney or Stable Diffusion is now available on the Internet, software that uses artificial intelligence to generate images out of text prompts (Böhringer 2022). The article states in its sub-headline: "Art from artificial intelligence has reached the threshold of commercialization. Illustrators and comic artists fear for their jobs and feel cheated of their ideas".[2] Many artists are upset that machine-learning systems learn from their images to simulate their style – and then put out images in the style of the artist for free, so to speak. As the article explains: Style cannot be easily protected by copyright. A new kind of class difference is feared: on the one hand, a monoculture of automated art production for the masses, as it was actually already imagined in Orwell's *Nineteen Eighty-Four*; and some very expensive real work by real artists for the few on the other.

This may or may not come true; what I want to discuss is the configuration of AI, automation, creativity and labor in its historical transformations. My chapter has four parts. First, I want to point to the fact that long before computers and AI emerged there was already a relation between artistic creativity and the automatic at the beginning of the 20th century. Secondly, I want to discuss a configuration of the 1960s regarding the simulation of artistic style. Thirdly, I want to present some preliminary musings on the non-automatability of artistic work. In my fourth part I want to discuss, very briefly, the situation today – and to suggest, based on a paper by Hal Foster (1996), the notion of 'style without museums'. In the fifth part, I offer a short conclusion that invokes the work of Actress aka Darren J. Cunningham.

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[1] Original title: "Wer hat Angst vor DALL-E 2?"

[2] Translation Schroeter, original quote: "Kunst von Künstlicher Intelligenz hat die Schwelle der Kommerzialisierung erreicht. Illustratoren und Comiczeichner fürchten um ihre Jobs und fühlen sich um ihre Ideen betrogen".

It needs to be stressed that the problem of automation and creativity has a multifaceted genealogy going back at least to the beginning of the twentieth century – perhaps even earlier when we think about the nervous discussions on the possibilities of producing art with photography in the 19th century. One argument then was that the automatic image generation in photography and the unintended detail would contradict the idea of artistic intentionality (see for this interesting discussion Kemp 1980: 88). Since then the question of automation, automatism etc. haunted the question of art.

Art, de-automatization, automatism – at the beginning of the 20th century

At the beginning of the twentieth century there were parallel developments which center around notions that are not identical, but at least similar and all are connected to the 'automatic' in a wider sense.

a. There was Russian Formalism and especially Viktor Shklovsky, who argued that the task of art is to 'defamiliarize' perception, to 'make it strange'. Shklovsky saw quotidian perception marked by automatization. "Automatization eats things, clothes, furniture, your wife, and the fear of war" (Shklovsky 2015: 162). He did not explicitly refer to industrial automation – but his famous essay 'Art as Device' appeared 1917, four years after Ford first installed a famous assembly line for the production of cars. Nevertheless, Shklovsky sometimes refers e.g. to the car as a paradigmatic example. Ginzburg writes, quoting Shklovsky: "'We know how life is made and how Don Quixote and the car are made too'. Literary criticism as a scientific enterprise, art as a technological artifact" (Ginzburg 1996: 8). In another passage Shklovsky explicitly mentions the "automatic age" (quoted in Platonov 2016: 19) and he is quoted as follows: "The machine changes man more than anything else" (in Lvoff 2016: 65). Art, on the other hand, should present things (or processes) anew – so that we as beholders could see them, in a way, as for the first time. Art was not supposed to change the political implications of industrial automation or the conditions at workplaces, but at least it could change and refresh a petrified perception. Automatization and perceptual automatism were to be estranged by art to provide a fresh look onto the world.

b. Automatisms also played a role in a very different field of art that emerged only a few years later than Russian Formalism, namely Surrealism. This was related to notions of psychic and bodily automatisms that emerged in psychology and psychoanalysis in the late 19th century – and these somewhat automatic psychic processes were often modeled after media technologies. Surrealism developed (amongst others) so-called strategies of automatic writing and drawing, e.g. Breton (2007) wrote a nowadays famous essay on 'the automatic message' in 1933. The surrealists thought

to transcend quotidian, rational consciousness by these techniques; the idea was to release unconscious impulses and energies.

Surrealism's discourse on automatic strategies in art was very different from Shklovsky's approach. While Shklovsky expected of art to overcome automatization, Surrealism used 'automatic strategies' – however, the surrealists did not understand 'the automatic' as a set of mechanized, formulaic forms (as Shklovsky did) but on the contrary as that, which, by its spontaneity, disrupted rational consciousness. The goals, however, were comparable – to transcend conventional, quotidian consciousness, to open up new possibilities of perception and presumably action. I will come back to these early strategies of art to cope with the automatic below.

A constellation in the 1960s

We make a jump to the 1960s. After 1945 new technologies emerged – computers began to spread, from 1946 to 1953 were the Macy conferences on cybernetics and in 1956 the Dartmouth conference was held, which developed the notion of "artificial intelligence". It was, among other things, the promise of these radical new technologies that led to ever new waves of fear of automation. As Amy Bix (2000) has shown in her magisterial study *Inventing Ourselves out of Jobs*, automation and its advantages in terms of productivity and its possible disadvantages in terms of unemployment were intensely debated issues in the United States after 1945 and especially since the 1960s. Whatever is nearly automatically done by humans, whatever is a human automatism can in principle be automated. In fact, in *Understanding Media* by Marshall McLuhan (1994: 346–359) from 1964 there is a somewhat enigmatic last chapter on automation. Even emerging media theory could not do otherwise than to react to the discussions on automation and labor in the US in the 1960s. Only some years later the idea emerged to produce artworks in a certain style with the aid of computers.

In 1967, Michael Noll published his essay "The Computer as a Creative Medium". Noll argued that "creativity has universally been regarded as the personal and somewhat mysterious domain of man" (1967: 89) and describes the computer as a new medium for the artist and speaks of the cooperation between artist and this medium. But although he does not argue that computers should or could replace artists, the experiment he describes is in a way about precisely that. He made a synthetic Mondrian and asked a presumably non-representative sample about the two images:

> In general, these people seemed to associate the randomness of the computer-generated picture with human creativity whereas the orderly bar placement of

the Mondrian painting seemed to them machinelike. This finding does not, of course, detract from Mondrian's artistic abilities. (1967: 92)

His experiment is about simulating a style of an artist to produce works that could substitute the artist – since the non-expert subjects identify the simulation as the real artwork. In that sense, Noll formalizes cognitive labor. Interestingly, at the very beginning of his paper Noll discusses the question of "how does an artist work" (1967: 90) and tries, starting from an anecdote by Henri Matisse about his stepwise work-process, to get to grips with the creative process:

> Most of all, the Matisse anecdote suggests that the artistic process involves some form of "program", one certainly more complex than the anecdote admits, but a definite program of step-by-step action. Without doing too much violence to our sense of what is appropriate, we might compare it to a computational hill-climbing technique in which the artist is trying to optimize or stabilize at a high level the parameter "excitement". (1967: 90)

There have been further attempts to automate style, for example in the work of Kirsch and Kirsch (1988). The authors demonstrate these methods with algorithmic descriptions of the styles of Richard Diebenkorn and Joan Miró and the generation of new compositions in their styles.

Although Noll's work pointed in that direction, however, art was not rationalized away and transformed, via real subsumption as Marxists would put it, under an industrial regime of mass production.

Some theoretical reflections: Why can artistic work not be automated?

Artistic work seems to be a type of work that seemingly cannot or should not be formalized, algorithmized, and automatized. But why? At least at first glance, the art market looks exactly like any other market: artists have to earn money with their work and their 'works'. It is not a realm of freedom, but only a kind of service or consumer goods industry that serves a special market. But on consumer markets we find lots of products that are mainly produced by machines and have no authorial signature attached to it (although there are things like brands, of course). But the idea of art without the intervention of a human author or causer – and even if her role consists precisely in demonstratively withdrawing – does not seem plausible to us. But even if we don't want to use a nowadays obsolete notion like 'genius' as the by definition non-automatable, we still insist on a certain originality and newness in art that is not the result of random processes (although randomness can be used, but as part of an original strategy). On the one hand this need for non-random-

newness this is what you would expect under market competition, on the other hand this is in a way exactly what Shklovsky's de-automatization means – art has to give something 'new'. This idea, if we accept it, seems hardly to be reconcilable with programmed machines, insofar a program by definition seems to mean to automatize a set of given, known and knowable steps.

Luhmann (2000: 38) remarks: "The artist's genius is primarily his body". One could say that *the separation of knowledge from the working body*, characteristic of the progression of capitalism and perhaps first discovered by Marx and then especially underlined by Harry Braverman in his study *Labour and Monopoly Capital*, does not or cannot take place in art. In that sense art remains in an uneasy, complicated relation to skilled handicraft. This also means that the work of art is somewhat removed from capitalist wage labor, since the artist is not separated from the means of production – e. g. her unique gesture with a brush. Her style.

But where does this indexical and juridical correlation of knowledge and body come from? For even if an artist – like Noll, for example – was to define himself precisely by delegating all work to machines, we would still call the result 'a work by Noll' and the original idea would be to delegate the work of art to machines. Another example: The work by Donald Judd is according to Sebastian Egenhofer (2008: 214; translation J.S.) "dissolved in the anonymity of the industrial dispositive". Nevertheless, it would still be pointless, if another person or simply a company, based on the knowledge of how it is made, were to produce the same object again, as it is also done in principle in the industrial production of identical copies of, say, a chair – it would not be possible to recognize this reproduction as a work of art. Building on this, I would like to provide another example: Elaine Sturtevant borrowed the screen printing matrices from Andy Warhol for the *Flowers* and remade the *Flowers*. In 1991 she even made an entire exhibition with *Warhol Flowers* – and Warhol is said to have once said, referring to the production process of the *Flowers*: "I don't know. Ask Elaine". (quoted in Arning 1989: 44) Andy understands himself as a machine and Elaine knows the algorithm. Nevertheless, Sturtevant's appropriation of Warhol's knowledge is not a rationalization of Warhol's work in the sense that Sturtevant now simply makes 'cheaper Warhols', but she rather makes 'Sturtevants'. Works of art must not correlate between knowledge and *a false body* – this would be what we call forgery. But Sturtevant does not forge – she connects herself to a body of work that simulates another body of work. And this simulation directs our attention exactly to the complex relation of art and automatic re-production. Of course, we can produce inexpensive reproductions of *Flowers* as posters (which do not count as work of art, but its reproduction). Warhol's life ended in 1987 and that stopped the production of original 'Warhols' – and that is a necessity: In the long run, the mortality of artists makes artworks scarce and that's why they have market-value.

In Noll (or more general in "Information Aesthetics") the works of art are removed from their historical context and are reduced them to abstract structures that

can be formalized. This also seems to reappear in recent AI art: "That might be an inevitability of AI art: Wide swaths of art-historical context are abstracted into general, visual patterns". (Bogost 2019) Art is de-historicized and re-stylized. Style wins over history. And therefore, the artists mentioned at the beginning are right: When style (or even 'form') wins over history than they are substitutable. Then it is enough to have an image in the *style* of Warhol. It would not be any more necessary to link a given artifact indexically to an historical artist-body. This can be seen as a danger for the art market. It can be seen as democratization. One could even argue, that having the stylistic options in, let's say DALL-E or Stable Diffusion, is not very different from buying Warhol- or Van Gogh-Posters in IKEA, only that we can now be oh so creative prosumers, mixing our own Warhol-meets-Van-Gogh-meets Star Trek-Cocktail. Similarly to all discourses of prosuming this might be highly ideological – a pseudo-creativity that produces the illusion of mastery over the archive.

Style without museums

Today there is again a nervous and multifaceted discussion on the future of work, given the challenges of robotics and AI. Some people think nothing will change and capitalism will adapt as it did in the past; some people think it will be different this time and that is a bad thing; some people think it will be different this time and that is a good thing. I have addressed these complicated discussions elsewhere (Schröter 2019).

Apparently, again, art it is not directly threatened by computerization. Art does not appear in the highly discussed and controversial Oxford research report by Frey and Osborne from 2013, according to which 47% of work can be automated in the near future: the only activity that resembles artistic work is that of the 'art director', who gets off quite lightly with a 95th place on the computerizability probability list.

The problem, however, might not be that an AI system substitutes the work of an artist. The situation seems to be that all styles are available at a fingertip. In his 1996 essay, "The Archive without Museums", American art historian Hal Foster mused about the expanding academic discourse and institutions called *visual culture* in contrast to the discourse of *art history*. Visual culture, with its eroding of dichotomies between high / low, art / non-art etc. and in this respect an offspring of Cultural Studies, was much debated at that time. Foster is very skeptical about 'visual culture' as a disciplinary field. In his essay, he discusses the historical, institutional and technological conditions, which led to the emergence of that field. Right at the beginning he contrasts these conditions with those that led to the emergence of art history. He proposes three different conditions for each field.
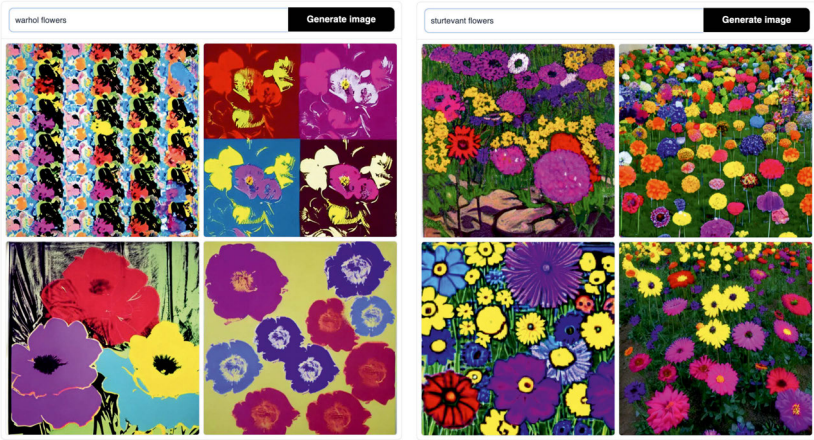
The emergence of art history is founded on a) the foregrounding of the 'constructive aspect of the artwork'; b) the interest in 'alien', non-european art fostered by

19th century imperialism – both a) and b) are shared, according to Foster, by art history and modern art – and c) the technologies of photographic reproduction: "Art history relied on techniques of *reproduction* to abstract a wide range of *objects* into a system of *style* – as defined in diacritical terms by Wölfflin in *The Principles of Art History* (1915) [...]". (97). The 'system of style' is also what organizes the logic of museums (115). Subsequently Foster characterizes the conditions that led to 'visual culture'. He mentions a) the "visual virtuality of contemporary media"; b) the interest in "cultural multiplicity in a post-colonial age" and c): "Might visual culture rely on techniques of *information* to transform a wide range of *mediums* into a system of image-text – a database of digital terms, an archive without museums?" (97).

It seems that the performance of style by AI systems like DALL-E does in some aspects belong to the paradigm of visual culture. They are based on databases of images taken from the net and in that sense on an archive without museums. The post-colonial cultural multiplicity is also a characteristic trait of our contemporary situation – although there might be significant biases in DALL-E and similar software, due to the dataset. But the notion of 'style' is, for Foster, connected to the paradigm of art history and its media: "After photographic reproduction the museum was not so much bound by walls, but it was bordered by style". (115) It seems that this abstraction of a wide range of *objects* into a system of *style* is very characteristic for contemporary AI-based visual culture. In contemporary AI-based visual culture, however, we find less a system, but a heterogeneous multiplicity of styles. As Roland Meyer (2022; translation J.S.) put it in a short and concise essay on DALL-E: "Style here can mean the individual style of a canonized artist, but also the image qualities of certain technical media or the look of popcultural imagery". AI-software systems produce *style without museums.*

The images are generated with Stable Diffusion, one is made from the prompt "Warhol Flowers", the other from "Sturtevant Flowers". We see that the style of Warhol is quite accurately generated in the left image. But actually the right image should look the same or at least more similar. But history is erased – the deconstructive gesture of appropriation which only operates historically cannot be reproduced. Ok, to be fair, I should have tried "Sturtevant Warhol Flowers" as prompt…

Fig. 1, 2: Stable Diffusion, prompts: Warhol Flowers and Sturtevant Flowers.

Conclusion

A last example to conclude: My final example addresses the work of Actress aka Darren J. Cunningham – a highly interesting DJ who creates experimental electronic music and is introduced in the blurb of the Transmediale in 2019 as follows:

> Young Paint has been progressively learning and emulating the shadowy, unpredictable, UK bass- and rave-inspired music of Darren J. Cunningham, aka Actress. Over the course of 2018, the AI-based character has spent time programming and arranging Cunningham's sonic palette, learning not only how to react to his work, but also to take the lead with the occasional solo. A life-size projection of Young Paint working in a virtual studio parallels Cunningham's performance on stage, visualising their collaboration. (Transmediale 2019).

Obviously, Young Paint is not conceived only as a tool, but also as a partner, automatizing and at the same time transforming the *style* of Actress. Cunningham mirrors himself in a machine learning system that on the one hand learns and mimics his aesthetic strategies, but on the on the other hand produces unforeseeable digressions. This is a kind of 'surrealism without the unconscious' as Jameson (1991: 67–96) has put it, but in a new and critical way: Cunningham forms with his double a new assemblage – Actress / Young Paint – which enhances his aesthetic self-reflection. I have discussed this example at length elsewhere (Schröter 2021), interesting here is only again: *Style* is separated from the author – somewhat like in the case Noll's Mondrian – but recursively modifies the author itself. Therefore, style becomes re-

cursive and the author, Cunningham, itself is de-automatized, to use Shklovsky's notion. He has to react to the contingency produced by Young Paint. This might be the new aspect of interactive systems collaborating with artists, although one could say that this was also a strategy of the surrealists already.

As I have outlined in this chapter, the relation of artistic and creative labor to 'the automatic' in a wider sense has a long and complicated history. There are substantial differences between various usages of 'automatic' and its attendant problems and imaginaries. From the discussion on artistic photography in the 19th century, de-automatization in Russian Formalism, automatic writing in Surrealism – to serial objects in minimal art and Warhol's Factory mimicking the industrial and automatized production processes, to Appropriation Art and beyond. In that sense, the contemporary experiments are not so new anyway, but embedded in a long genealogy in which art (or at least some forms of art) struggled with the meaning of creativity, the emergence of 'the new' and the disruption or confirmation of hegemonic perception, the role of the author and / or forms of her withdrawal, the form and economic entanglements of artistic labor and the active resistance and intervention of the technological media of art. The case of Actress / Young Paint is an example of a recent experiment that addresses some of these questions. A genealogy of art and 'the automatic', however, is still missing, as far as I can see.

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