

## Mahnič's Brushography as a New Antropogenic Product

**Jure Vuga, professor of art history and doctor of sociology**

The present essay was written as one of the accompanying texts for the exhibition of the academic painter, video artist and innovator in the field of machine painting Dominik Mahnič at the Match Gallery, entitled *Steering the Brush* (19<sup>th</sup> September to 5<sup>th</sup> November 2023). Mahnič's work is part of the art-science tradition, which has always captivated the audience. His painting machine »hand« can only find parallels in our space in the painting machine of Bogoslav Kalaš. Both Mahnič's and Kalaš's work is a time-consuming technique, and it is this very *prolongedness* that symbolically quantifies the value of the work, or rather, dignifies the original-artwork. It is therefore a hybrid, difficult to define fine art work: an original photograph in digital form, or an AI-generated image applied to a canvas by a brush device depositing egg tempera from a petri dish. The status of this object as a new anthropological phenomenon is therefore questionable: the digital image is seamlessly transformed via technology into a painting with an undefined status. Even with Kalaš, the discipline is not able to define with certainty whether his works belong to the category of Pop Art, Conceptualism, Neo-Figurative, Photorealism or perhaps Graphic Art.<sup>1</sup> Both in the case of photorealist painting and in Kalaš's and Mahnič's creative-imaginative approach, photography is above all a tool that teleologically tends towards the painting. But not the hyperrealistic painting as Berko conceives it, the pseudo-realistic depiction of slightly distorted or caricatured figures by Jurij Kalan or the post-media mise-en-scene by Sašo Vrabič. Rather, it is an intermedia(l) hybrid work, which is created at the intersection of different modes of expression and is not purely an artefact, as it contains the inscribed traces of a machine generative process as a signature, a statement or a performative of its own. Intermedia(l) works and projects also raise some crucial conceptual issues in contemporary art, such as the autonomy of the artwork and the notion of authorship,<sup>2</sup> dilemmas that are also relevant in the case of the body of work under discussion. Kalaš uses a vertical line structure that partly interferes with the image, crosses it and contributes to the perception of the

---

<sup>1</sup> Bogoslav Kalaš: *Stroj za slikanje. Pregledna razstava*. = *The Painting Machine: A Survey Exhibition: Moderna galerija = Museum of Modern Art, Ljubljana*, 17. 12. 2015–20. 3. 2016, Ljubljana: Museum of Modern Art, 2016. I would like to thank colleagues from the MG+MSUM documentation archive for the access to Kalaš's personal dossier.

<sup>2</sup> Tadej Pogačar, *Intermedijsko = Intermedial*, Galerija sodobne umetnosti Celje, 3. 12. 2002–10. 1. 2003 Celje 2002 p. 2.

visual whole with a kind of alienation effect. Mahnič's device manipulates the brush, which leaves behind multi-layered applications, a rhizome, an interplay of colour vectors that can move linearly or circularly in the modus of isohypses: the two modes are occasionally even combined. The raster structure contributes to the planarity of the image, while at the same time creating visual »noise« that disturbs the immersion when viewed up close, while the contours blend in when the work is observed from a certain distance. The temporal dimension remains legible from the final product, which in this sense is a painterly *nonfinito* or never-completed work, an open work. And just as a painter must be, even more so from the time of Impressionism onwards, able to judge when to step back so as not to »cram« the painting and oversaturate it with superfluous details, also Mahnič must be able to pinpoint the right moment when to stop the painting machine. Otherwise, it may be the case that at the peak of colour luxury, the product starts gravitating towards a »smudge«. When excessive application of layers of colour destroys the fragile harmony of the composition, there is no alternative but to repeat the operation from scratch on the existing colour base.

Dominik Mahnič presented his so-called »Brushograph 2.0« at the Museum of Contemporary Art Metelkova, as part of the Laboratory for New Media, between the 14<sup>th</sup> of February and the 2<sup>nd</sup> of April 2023.<sup>3</sup> The design of the machine learning-based device dates back to 2016, when he started working on it with software developers Peter Veselinović and Vid Vidmar, and with their help brought machine painting to an enviable level of sophistication. In the past, individuals working within Ljubljana's Cirkulacija 2, whose programmes are supported by the Municipality of Ljubljana, have mostly been involved in some form of robotic drawing. The technique, which he calls brushography, but there is also marker(-pen)ography, is worthy of attention despite some of the limitations that are inherent in it. If Kalaš's machine-produced painting tends towards photorealism, a flawless reproduction of reality, the ethereal dimension of glossy pictures of magazines, the purity of which the artist achieves through the use of airbrush, then, if I follow this suggestion, it seems at most that Mahnič's technique tends towards enhanced pictorialism by applying contrasting layers of complementary colours (using a cmyk+ palette), which in some variations approaches the aesthetics of Pop Art. The brush leaves behind not only lines of different lengths, but also dots, which complement the image, thus achieving a pointillist dimension that is concluded in its fragmentation.

---

<sup>3</sup> <http://www.mg-lj.si/si/razstave/3690/razstava-dominik-mahnic-copicograf/>

It seems that the inner aspiration of this kind of image tends towards a bolder visuality. I dare say that the autonomous internal development of Mahnič's method of machine painting as I have experienced and understood it inclines, without taking anything away from the intermediate stages of visual manifestations in the sense of incompleteness, towards an (even) enhanced pictorial quality of the image as a full affirmation of the expressive potential of this medium committed to technical performative. My somewhat presumptuous thesis is that, unlike Kalaš's works, which strive to remain pure and unapologetically modernist sublime, the maturation of his artistic process shares and is ideally refined by a greater input of chance (contingency), disorder, blot, the vehement carelessness characteristic of the subjective ductus at the core of the impressionist painterly gesture. Mahnič's focus is pure painting, as he himself puts it: »I don't deal so much with theory, I'm more interested in painting than in pioneering and things like that, for me these questions are as important as who was the first to use oil in painting or something like that. Technology is available and I use it.« By allowing a higher speed of machine painting, one could achieve the effect of a sketch-like stroke, but the artist judiciously adds that »it is not possible to represent everything I want to in a single painting« (just as it is not possible to tell all the stories in a single narrative) and that it is about a long-lasting creative process.

Mahnič's predecessors worldwide include Kalaš's unique artistic process or technique, the so-called *aerography*, which he has developed continuously since 1971. The process is based on the principle of transferring the original photograph or motif by means of a mechanical transfer (painting machine) and paints onto a new medium (canvas, paper, etc.).<sup>4</sup> The fundamental difference with Mahnič's work is that Kalaš did not use a computer. Lojze Logar was also supposed to have worked with the machine for some time, but unfortunately not much is known about this. Another innovation from the former Yugoslavia was that of Anton Perich, who built his own painting machine about seven years after Kalaš (1977–1978). Perich, who is considered a pioneer of digital-computer art, also worked with Andy Warhol in the United States, where

---

<sup>4</sup> Kalaš's creative process which begins with an original analogue photograph, followed by colour studies of the photograph, or a slide, which the painter inserts into the machine. The electronic scanner that »reads« the slide is connected to a lever at the end of which is an airbrush. The airbrush arm also moves in sync with the movement of the scanner. The painter's presence at the machine is vital, as he controls the power of the paint spray through the nozzle of the airbrush. The thickness of the line depends on the strength of the spray. The machine essentially works like a kind of inkjet printer, applying vertical traces of colour as long as the lines in between are visible. The colours follow each other in the following order: yellow, red, blue, black. The airbrush operates as an extension of the painter's hand, a bit like a brush in traditional painting. Cf. <https://www.mg-lj.si/si/razstave/1234/bogoslav-kalas-stroj-za-slikanje/>

he moved from Paris.<sup>5</sup> Robot plotters are relevant again today. In 2004, a landmark auction at Christie's and Sotheby's sold works produced by artificial intelligence algorithms. In the international context, we can highlight the contemporary artist Zolloc, who uses a robotic arm to paint. Patrick Tresset uses robots to create paintings and other artworks. The oldest painting machine mentioned in the works of Caroline A. Jones and Patrick Tresset is Tresset's »Rotunda«.<sup>6</sup> According to the artist, »Rotunda« was created in 2005 and is believed to be the first robot that can create a painting.<sup>7</sup> The painting machines discussed by these artists are in many ways similar to the one developed by Mahnič. They all involve some form of automation or robotics used to create art. The machine, which is being developed in Ljubljana, also uses software and algorithms to control the movement of the mechanical arm and add colour.

## THE CLASH BETWEEN THE HYPER-TECHNOLOGICAL AND THE TRADITIONAL

Mahnič boldly proves that his technique is already a relevant medium of artistic expression, even if it requires complex IT knowledge. An unexpected aspect of his procedure is the fundamentally exacerbated dichotomy between hyper-technological and traditional image-making: this is also reflected at the level of colour preparation, which is reminiscent of the days of ancient guild secrets. Delving deeper into his work process reveals not only an astute, even subversive use of visualisation generators in the range of artificial intelligence, but also a practical knowledge of the egg tempera technique, which he mostly learnt online as a self-taught artist. The great advantage of egg tempera, as he explained, is that it is affordable, but it is also a very eco-friendly technique due to the absence of synthetic compounds found in acrylic paints. Mahnič prepares the colours on a daily basis, mixing natural pigments, egg whites (he uses egg yolks only for the warm colours), white damar resin, alcohol and a dash of gum arabic. He has just started using powdered methylcellulose derived from the Mediterranean myrtle plant. He checks the density and viscosity of the paint as an apprentice at the master's *bottega*, according to a formula known today only by conservators and specialists, not by academically trained

---

<sup>5</sup> <https://www.mg-lj.si/si/razstave/1234/bogoslav-kalas-stroj-za-slikanje/>

<sup>6</sup> Caroline A. Jones, *Painting Machines: Industrial Image and Process in Contemporary Art*, Washington, 1997; Caroline A. Jones, *Machine in the Studio: Constructing the Postwar American Artist*, Chicago, 1996; *Human Traits. Patrick Tresset and the Art of Creative Machines*, Laznia Centre for Contemporary Art, Gdansk, 2016; see also: *Le livre des merveilles technologiques*, Pariz, 2016; *Anatomie de L'automate*, Montpellier, 2015; *Sensorium: Embodied Experience, Technology, and Contemporary Art*, Boston, 2006.

<sup>7</sup> The »Rotunda« robot uses two cameras and a robotic arm to create paintings using different brushes. The image is created by software that guides the robotic arm to trace predefined patterns, while cameras help the robot handle the canvas, paint and brushes.

painters. The surface of the paintings is therefore sometimes flaking, other times it is thicker, because the paint is not squeezed out of an industrial tube.

In the iterations of the brushographies, which could also be called *penicillographies* (brush, Latin: *pēnicillum*), it is possible to identify a progression of technical sophistication and motivation. Mahnič is an academic painter who is intensively devoted to painting lyrical landscapes, as well as portraits, so it is not surprising that he chose flowers and scenes from nature, as well as portraits of people close to him, for his initial small-format prototypes. Motivationally, at least at first glance, he seems to remain faithful to tradition, without straying into the great modernist themes whose emblem is the angsty loneliness of the fragmented, vulnerable subject in a decadent world of universal alienation.

The topicality of his painterly realisation is to be found in the conception of the image, the manner of his artistic thinking, which reveals the artist's breadth of range, his sense of *zeitgeist* and postmodern recycling, quotation, appropriation, reinterpretation of genre and religious motifs, and his sense of self-representation or self-historicisation. Roland Barthes observes that »the photographer, like an acrobat, must defy the laws of probability or even of possibility; at the limit, he must defy those of the interesting: the photograph becomes 'surprising' when we do not know why it has been taken«.<sup>8</sup> In the way described above, we are surprised by Mahnič's work entitled »The Launderers«, which is also challenging the plausible; it shows two elderly male proletarians absorbed in their work on the banks of a river, who are not fishermen but a ludic staging of a male version of the laundresses. Even if the habituation of the gaze tries to stereotype the scene into a familiar motif (e.g. fishermen mending their nets), the work tests the consistency of our contemplation: in the absence of a title and other captions at the Museum of Contemporary Art exhibition, it was only the precision of the gaze that rewarded the more persistent viewer with the revelation of the »deceit«. The image depicts anachronistic launderers in a historically realistic manner, such as the one found in other contexts in late 19<sup>th</sup>-century engaged works that as part of a programme represent peasants or proletarians at work – such as the ironers of Ferdo Vesel and Ivana Kobilica. This subversive reinterpretation of launderers, attuned to feminist critique, is almost certainly the only depiction of such a visual motif in the history of fine art, as it has no historical or experiential basis, but was created as an ironic provocation in a series of permutations of the original motif of the laundresses, which,

---

<sup>8</sup> Roland Barthes, *Camera Lucida: Reflections on Photography*, trans. Richard Howard, New York 1981, pp. 34–35.

according to the artist's description and suggestions, was visualised by an artificial intelligence software on commission for the artist. The neologism *periča/periči* or the term launderers in itself in no way suggests that these are male launderers, scrubbing sheets in a stream with Marseilles soap on their hands in order to bring home a freshly washed load. Under the description of men doing laundry, the AI application evokes, among other things, impoverished Asian men in a water basin at a waste disposal site. Mahnič had to age the scene with additional stipulations and then choose between Tuscan casual or Irish sporty launderers. And he chose the classic. In this original motif we can recognise a postmodern strategy, since the launderers only become conceivable and illustrative through a representation that is more real than reality, hence hyperreal in the sense of Baudrillard's notion of the new reality as simulacra, a reality so mass mediated that the fabrication of the real replaces experience for us. The launderers take the form of something bizarre and uncanny within the familiar context, and in this way they correspond to the notion of uncanny as *Das unheimliche*,<sup>9</sup> which is exaggerated to the point of being comical.

Among the colourful group of motifs generated for the artist by this software, there was also one of Christ pacifying the women of Jerusalem in a neo-Renaissance, almost pre-Raphaelite visual language, executed in acrylic with an »isohypical« brush stroke. Mahnič made it his mission to realise a series of Stations of the Cross. He encountered the iceberg of »political correctness, non-discrimination, or non-violence policy« which is coded in the software itself and therefore refuses to visualise the crucifixion. That is why he chose the least problematic eighth station of the cross, but the result is entirely unexpected: we are left with an apocryphal scene that does not coincide with the known biblical depictions. Traditionally, painters have drawn on the text of the Gospels (*Jesus turned and said to them, »Daughters of Jerusalem, do not weep for me; weep for yourselves and for your children.«* Luke 23:28) and decided to depict women with their children. In Mahnič's painting we find a serene Jesus as teacher (not collapsing under the weight of the cross), surrounded by five women, with a curious total absence of children and male figures, among whom we would have expected at least Simon of Cyrene, who helped the Saviour carry the cross. A painter coming from an existing visual tradition would never have approached the elaboration of this motif in this way. In this case,

---

<sup>9</sup> Nicolas Royle, *The Uncanny*, Manchester 2003, pp. 1–3. Summarised after Mateja Kurir, *Arhitektura moderne in Das Unheimliche, Heidegger, Freud in Le Corbusier* [Architecture of the Modernity and Das Unheimliche, Heidegger, Freud and Le Corbusier], Ljubljana 2018, p. 30.

we see once again how the use of artificial intelligence opens up the field of thinking outside established patterns in exciting ways. The last work that the artist began to realise on a large format at the Museum of Contemporary Art was a singular self-portrait with a good sense of self-irony and, even better sense of self-representation. The centre of the canvas is dominated by a full-body pose seen from the back: the painter is standing nude on the slope of Nanos in front of an easel (which he has reconstructed from 19<sup>th</sup>-century photographs), painting *en plein air*. Hence the title of the work »The Plenerist«. Kalaš's female nudes contain a distinctly male heteronormative gaze inscribed in their seams. Mahnič, on the other hand, once again provokes and humorously places himself in the ambivalent position of author-subject and object of the gaze, which, rather than alluding, declaratively evokes and addresses patriarchal taboos fixed in the »**optical** unconscious«.

Walter Benjamin, in *The Work of Art in the Age of Its Technical Reproducibility*, defined the aura as the difference between the original and the copy. If the original painting, as original, has its own historical aura, which reproduction cannot overtake or appropriate, we could say that the aura of Mahnič's works is in limbo: it is stuck somewhere in between. It is precisely this intermediate, liminal, elusive, undefined status that differentiates Mahnič's works: the warrant of authenticity is precisely their elusive hybrid status, which derives from technological production (practice) and no longer from the ritual of painting.<sup>10</sup> »For the Greek philosophers, the ape was such an excellent imitator that art can be nothing else than the ape of nature. With the label *ars simia naturae*, or 'art (is) nature's monkey,' Filippo Villani praised the excellence of the imitation of nature in the works of a certain painter as early as around 1400. But at the end of the Middle Ages, art had to be lifted from its status as a mechanical, artisanal skill to become a respected liberal art in the Italian *cinquecento*.«<sup>11</sup> In industrial and post-industrial society, the technological reproduction of images has taken over the role of mimetic painting: first the camera, film, television, video, the printer, digital media, now the painting machine. Even at this point in time, the maxim is unchanged: art should be elevated and separated from the mechanically reproduced image in order to share the superlative *aura* of the original.

Mahnič is highly sceptical of the opinion that recreating the illusion of algorithmic »inspiration«, the seemingly arbitrary violation of compositional rules as a result of the

---

<sup>10</sup> Benjamin points out that »the artwork's auratic mode of existence is never entirely severed from its ritual function« and that »for time in world history, technological reproducibility emancipates the work of art from its parasitic subservience to ritual«. Walter Benjamin, *The Work of Art in the Age of Its Technological Reproducibility, and Other Writings on Media*, trans. Edmund Jephcott *et al.*, Cambridge and London 2008, p. 24.

<sup>11</sup> Jure Mikuž, *Kri in mleko* [Blood and Milk], Ljubljana 1999, p. 441.

inimitable contingency of mathematical permutations, would contribute significantly to achieving a new conceptual level and a more advanced aesthetics of machine painting and, consequently, to the acceptance of this pioneering technique in the fine art imaginary. He explained his position eloquently in a letter, which I reproduce below in synthetic form, as it contains the core elements of his poetics: *»Basically, machines work as well as we are able to make them. 'Sloppiness' is a matter of bad engineering. Machines have no will of their own. We can, of course, hard-code or soft-code accidents or errors, which is obviously done quite often, especially through various biochemical interfaces, to achieve a certain liveliness, an organic feel, in various ways. I have not tried to do that myself, on the contrary, because there is a myriad of such 'sloppy' machines out there already. It's a different philosophy, but being »sloppy" is not synonymous with a good artwork. The artist, even in a seemingly casual gesture, follows a precise vision. It's the millimetres that make the difference. Supervised non-controllability. No matter how hard we try, in the end there will always be deviations that accumulate throughout the work process and need to be either removed or implemented so that the final look doesn't deviate too much from the original idea, so that the message doesn't get lost. It also depends from artist to artist. I appreciate a lot of things, and in this case I have chosen to do so. The ultimate rule is that there are no rules.«*

In the history of humanity, art has established itself as one of the privileged mediums for learning about reality. One of its primary functions was to accurately record reality: to give a visual state of affairs. The implementation of the arts in science was not without consequences for the rise of civilisation in modern Europe. Cultures that did not cultivate figurative art out of aniconic tendencies began (not only for this reason) to fall behind in the field of science. The fusion of art and science has always stirred the imagination.<sup>12</sup> The development of technology

---

<sup>12</sup> Cosmologically accurate alignment of sacred objects is desirable from prehistoric times onwards, the invention of mathematical perspective in the Renaissance, the quadrature of the circle, anamorphosis, Leonardo da Vinci's studies, Galileo Galilei's precise drawings of the moon's surface, Baroque illusionism, cartography, the invention of photography, film creations such as Fritz Lang's *Metropolis*, Op Art, Escher's works, Calder's mobiles, Jean Tinguely's kinetic sculpture-machines, to Damien Hirst's dissected animals on display, Patricia Picinini's hyperrealistic human hybrids and Neil Harbisson's cyborg art. The first representation of a robot as a self-moving sculpture in the Slovenian space, which testifies to a long-lived fascination with technology, revived in the Renaissance, when the first public clockworks with moving figures appeared in Venice, Nuremberg and elsewhere, can be traced in the automaton figure, which the Master of the Kranj Altar (presumably Master Vid from Kamnik) depicted on the Kranj Altar (today at the Belvedere Gallery in Vienna) around 1500. Worth mentioning are the pioneering role of Janez Puhar, inventor of one of the methods of photography on glass, Černigoj's floating objects from the Triestinian Constructivist Ambient, Noordung's Cosmokinetic Cabinet, and Dragan Živadinov's post-gravitational theatrical abstracts, Robertina Šebjanič's project *Line | +1233 m -1233 m*, which records the sonority of the sea in a vertical zone deep below and above the surface, Marko Peljhan's design of *Macrolab*, Maja Smrekar's *Survival Kit for the Anthropocene*, and the list goes on. Among the world-renowned pioneers of computer art, Edvard Zajec must be mentioned. The Ljubljana-based Ljudmila Association runs programmes in



is accompanied by both a fascination with its capacity and an anxiety about the potential redundancy of obsolete human activities, which will be replaced by more efficient machine work, with the never-finite abolition of the old art media at stake. Not negligible is the alertness to the potential hyper-surveillance made possible by new technologies, traceability, the implementation of ideological social rewards, objectification and, last but not least, the premonition of a dystopian transhumanist fusion of biology and mechatronics. All these nuances are part of the *chiaroscuro* of the machine-painting fabric of Mahnič's techno-facts.

---

the field of intermedia(l) art, which bridges the fields of art and technology. Kapelica Gallery stands out in our space with its presentations of projects in the field of robotics, technological applications, biopolitics and other works of contemporary research-based art.