Where Machine and Muse Meet[1] – Towards a Creativity of AI Art

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Introductory remarks

Art was and is regarded as a field of human creativity, which far exceeds machine processes. However, the discursive separation into mind and machine has a long tradition preceding digital art, aptly described by Stefan Rieger as "negative semantics". According to Rieger, this tradition can be found in the guiding values of the Goethe period, which was dedicated to individualisation and therefore also distinguished the mechanical as "disdainful" (2018: 117). In the historical tradition, the individual and the mechanical are mutually exclusive, as is still vehemently advocated in art discourse today. Dieter Mersch (2019: 66), for example, currently argues against the procedures of artificial intelligence, stressing that the history of cybernetics postulates an abbreviated "homology of logical structures and the synaptic activity of nerve cells". For him, the close entanglement of consciousness and technology is the hallmark of the historical and current debate about artificial intelligence. Mersch contrasts the negative impact of cybernetic thinking and digital technology with phenomenological considerations of body knowledge, which do not fit into the equation of consciousness and machine. On this basis Mersch then formulates a "critique of 'algorithmic rationality'" that positions itself beyond algorithmic creativity.

> The astonishing simplicity of the definitions is all oriented to the ideas that were not only swept away by the artistic avant-gardes of the 20th century more than 100 years ago, but they do not even suspect anything of a specifically epistemological dimension of the aesthetic. They consistently fade out what makes art art in the first place: reflexivity as the opening up of another knowledge. Instead, under the sign of a preference for rationalism and hard sciences, a direct connection is drawn between 'natural' creative

1 The title was supplied by ChatGPT.

> activities such as the development of life and the 'social' or 'historical' virulence of the arts, regardless of essential incompatibilities. (Mersch 2019:73, translation A.K.)[2]

Taking the mathematical basis of artificial intelligence, Mersch strictly rules out the possibility of aesthetic creativity, since art opens up a different kind of knowledge which cannot be achieved within digital contexts. Although Mersch's focus on art as a knowledge of the "Other", his definition of art and creativity appears quite normative and follows a traditional concept of art, where the aura of art is at the centre. It completely leaves out the avant-gardes of early modernism and later conceptual art, such as Marcel Duchamp's presentation of the urinal as a mass-produced object into the art world. It additionally, as Jan Løhmann Stephensen underlines in his chapter for this volume, ignores the fact that creativity only emerges in the artistic process. Following Stephensen, creativity emerges as a productive category and cannot be "read backwards" (Stephensen in this volume).

Cybernetics as creative impetus

Mersch's discursive confrontations between computerised rationality and creativity echoes a confrontational discussion between Joseph Beuys and Max Bense, having taken place at the 67th Forumsgespräch "Meinung gegen Meinung" (1970) in Düsseldorf. Here Bense defended a rationalist, mathematical concept of art against the mythological creativity of Joseph Beuys. Contrary to Joseph Beuys' expanded concept of art, who "thought that everything you put down like that is already aesthetic" and whose understanding of art culminated in "human art" (Pias 2008: 76), Max Bense's concept of cybernetic art contains "not least a suspension of the human being" (Pias 2008: 76). For Bense, in view of cybernetics and the emphasis on information and feedback processes, had at least implied this. In addition, Bense's aesthetics is neither limited to digital processes nor does it take the Turing machine as the starting point for its considerations. In his theory of the aesthetic, the aesthetic measure re-

2 Original quote: "Die erstaunliche Simplizität der Definitionen orientiert sich sämtlich an den Vorstellungen, die nicht nur bereits vor mehr als 100 Jahren von den künstlerischen Avantgarden des 20. Jahrhunderts hinweggefegt wurden, vielmehr ahnen sie nicht einmal etwas von einer spezifisch epistemologischen Dimension des Ästhetischen. Konsequent blenden sie aus, was Kunst allererst *zu Kunst* macht: Reflexivität als Aufschließung eines *anderen* Wissens. Stattdessen wird im Zeichen einer Präferenz für Rationalismus und *hard sciences* eine direkte Verbindung zwischen ‹natürlichen› Kreativitäten wie der Entwicklung des Lebens und der ‹sozialen› bzw. ‹historischen› Virulenz der Künste gezogen, ungeachtet wesentlicher Inkompatibilitäten". (Mersch 2019:73)

sults from the density of information. In this sense, Bense adheres to the category of the aesthetic and the creative (Krewani 2016: 11–12).

Following the thinking of the mathematician George D. Birkhoff, who had developed a formula for aesthetic order and complexity, Max Bense offered a theoretical approach to aesthetic processes and inherent complexities. In his concept, art functions as a "generator for innovation", aesthetics equals technologies, and it can compete with the natural sciences (Hörl / Hagner 2008: 35). Bense's ideas do not refer to the practical aspects of computer technologies, and neither does he conceptualise digital cultures. His concept of density of information (*Informationsdichte*) turns into an aesthetic theory:

> It is […] easy to see that the measure of creation as the measure of innovation is given by the contribution of information, while the measure of communication as the measure of order is sensibly determined by the contribution of redundancy. Any measure of creation further achieves what is expressed by the classical art-theoretical term originality, while the measure in which an aesthetic state or a work of art becomes communicable or can be identified is a question of its recognizable order, as a redundancy, which roughly corresponds to the classical term of style. (Bense 1998: 316)[3]

With the impact of informational density as an aesthetic and creative concept, Bense offers a theory of art that overrides the limits of computer technology towards a general theory of communication. He claims a shift in the reception of aesthetic processes towards the acceptance of informational density. Informational density thus becomes the measure of the aesthetic. In Bense's thinking, technology functions as a superior instance to bypass contradictions. Art is not evaluated along the lines of historical categories but along the lines of technological standards that stand for objectivity and functionality. Here, Bense concludes that

> with the change from the historical knowledge to the technological knowledge appears a new understanding of time. Disregarding that the old concept of education is oriented along the lines of the past, a new concept of education takes its place, which gears towards the future of our civilization and technological reality. Future history proves to be receiving towards an

3 Original quote: "Es ist […] leicht einzusehen, daß das Kreationsmaß als das Innovationsmaß durch den Informationsbeitrag gegeben wird, während das Kommunikationsmaß als Ordnungsmaß sinnvoll durch den Redundanzbeitrag bestimmt wird. Jedes Kreationsmaß erreicht weiterhin das, was durch den klassischen kunsttheoretischen Begriff Originalität ausgedrückt wird, während das Maß, in dem ein ästhetischer Zustand bzw. ein Kunstwerk kommunizierbar wird bzw. identifiziert werden kann, eine Frage seiner erkennbaren Ordnung, als einer Redundanz ist, was in etwa dem klassischen Begriff des Stils entspricht" (Bense 1998: 316)

> understanding of time, which is fundamental for the technological knowledge. (Bense 1998: 316)[4]

Unfortunately, these ideas were not influential in German avant-garde art, where Fluxus and Happenings were dominant. This was largely due to the prominence of the artist Joseph Beuys, who refuted technology within artistic processes (cf. Krewani, 2016: 62). Claus Pias contrasts the avantgarde-movement with Bense's technological aesthetics, and he concludes that around 1970 the case of Bense's cybernetics was lost. In his view, the 1968 students' movement and the prevalence of spontaneous models of art had finished off Bense's "peculiar and often broken technicality" (cf. Pias 2008: 79).

Loops and feedback processes have long been at the basis of modern art, in this way they represent a less well-known path into contemporary art. The famous painter of abstract images, Karl Otto Götz, claimed that the knowledge, he had acquired as a radio operator during World War 2, provided the basis for his abstract paintings. Thus, he noted that

> stimulated by the appearance of well-known interference patterns in radar operation, I sat down with technicians and attempted to evoke various optical phenomena on the luminous screen and to control them electronically [...] Television technology opened up new avenues for us in the production and control of kinetic elements of form and structure. (Götz 1959: 47; translation A.K.)[5]

Götz achieved his creative input through a form of feedback technology. Although this may be not comparable to AI Art, with the paintings of Götz, a technological function provides the basis for the creative process in another medium.

These examples remind us to re-evaluate the role of technology within aesthetic processes. Dieter Mersch conceives of technology as a modern, rational and biased process, since all computational processes subsume to a form of rationality, which is

4 Original quote: "Mit dem Übergang vom historischen zum technischen Bewußtsein kommt offensichtlich ein neues Zeitverhältnis zum Ausdruck. Davon abgesehen, daß der klassische Bildungsbegriff wesentlich an der geschichtlichen Vergangenheit orientiert ist und ein neuer mehr und mehr an seine Stelle tritt, dessen Sinn und dessen Niveau durch die Zukunft unserer Zivilisation und ihrer technischen Realität bestimmt werden, erweist sich die die zukünftige Geschichte, also die offen vor uns liegende Zeitlichkeit, als die wesentliche, die entscheidende innerhalb des technischen Bewußtseins". (Bense 1956: 16)

5 Original quote: "Angeregt durch das Auftreten bekannter Störbilder im Radarbetrieb setzte ich mich mit Technikern zusammen und versuchte, verschiedene optische Phänomene auf dem Leuchtschirm hervorzurufen und elektronisch zu steuern [...] Die Fernsehtechnik eröffnete uns neue Wege in der Hervorbringung und Steuerung von kinetischen Form- und Strukturelementen". (Götz 1959: 47)

one of the foundations of modernity (Mersch 65). This point may be true in the narrower sense, but technology is always embedded in wider cultural contexts, which interact with technological processes. Contradicting Mersch's too narrow concept of technology, Gilbert Simondon asserts the tension between an inner logic of application and an outer, social or aesthetic logic of technology as a prerequisite for the functioning of technical ensembles. Simondon opts for a technological imaginary that feeds into the technical processes:

> The real perfection of machines, which we can say raises the level of technicality, does not correspond to an increase in automatism but, on the contrary, relates to the fact that the functioning of the machine conceals a certain margin of indetermination. It is such a margin that allows for the machine's sensitivity to outside information. It is this sensitivity of information on the part of machines, much more than any increase in automatism that makes possible a technical ensemble. A purely automatic machine completely closed in on itself in a predetermined operation could only give summary results. (Simondon 1980: 4)

From this perspective, technical or digital functions also prove fruitful for aesthetic productions and conceptions of creativity in technical contexts. The history of technology and technical design thus becomes an area in which the "technical milieu of our being in a comprehensive sense is de- and restabilised, our 'operational memory', our values and symbols are formed and changed, and operational behaviour acquires a consistency that can be handed down" (Hörl / Hagner 2008: 8, translation A.K).

Viewed against this background, a discussion of creativity and artificial intelligence should consider the dynamic exchange between specific technologies, their technological environment and creative processes. These feedback processes between technology and society have been documented in the artistic appropriations of cybernetic theory. Interestingly enough, cybernetics brought about a variety of artistic experiments that conflated cybernetic theory with computer graphics. A prominent exhibition of computer art was *Electronic Abstractions* (Cherokee, IOWA, 1953), which figured as the first exhibition of 'computer art'. The project was conceptualised as a touring exhibition and it presented 50 photos of Ben J. Lapowsky's series "Oscillons". The images were produced with a computer, were realised on a cathode-ray-oscillograph were photographed from the screen. (Piehler 2002: 45).

The first European exhibition of cybernetic art was presented in London in 1968 with the title *Cybernetic Serendipity,* curated by Jasia Reichardt, whom it took three years to organise the exhibition. Facing the rising presence of computers in the military and the administration, Reichardt looked out for their potential in the creative world. Computers, she stated, "have so far neither revolutionized music, nor art,

nor poetry, in the same way they have revolutionized science" (McCray 2022: 696). For this reason, she decided "to showcase the 'possibilities' of computers and other 'cybernetic devices' as well as the 'relationships between technology and creativity'. She wanted to demonstrate the often-unseen linkages between computers, cybernetics, and creativity, with examples of 'machine-aided' creative processes" (McCray 2022: 696).

As was characteristic of early computer and media art, Reichardt discovered her exhibits in the cooperation with the young computer industry and research institutes of technology (Piehler 2002: 51). Regardless of the art works' origins, this was the first world exhibition of what later on was called 'media art', since it covered experiments with light, graphics and animation, kinetic objects and interactive installations (Piehler 2002:52).

The press release for the London exhibition underlines its technological features and its proximity to cybernetics:

> Cybernetics – derives from the Greek "kybernetes" meaning "steersman"; our word "governor" comes from the Latin version of the same word. The term cybernetics was first used by Norbert Wiener around 1948. In 1948 his book "Cybernetics" was subtitled "communication and control in animal and machine." The term today refers to systems of communication and control in complex electronic devices like computers, which have very definite similarities with the processes of communication and control in the human nervous system. A cybernetic device responds to stimulus from outside and in turn affects external environment, like a thermostat which responds to the coldness of a room by switching on the heating and thereby altering the temperature. This process is called feedback. Exhibits in the show are either produced with a cybernetic device (computer) or are cybernetic devices in themselves. They react to something in the environment, either human or machine, and in response produce either sound, light or movement. Serendipity – was coined by Horace Walpole in 1754. There was a legend about three princes of Serendip (old name for Ceylon) who used to travel throughout the world and whatever was their aim or whatever they looked for, they always found something very much better. Walpole used the term serendipity to describe the faculty of making happy chance discoveries. Through the use of cybernetic devices to make graphics, film and poems, as well as other randomizing machines which interact with the spectator, many happy discoveries were made. Hence the title of this show. (Reichardt 1968)

The optimism with which the new technologies are welcomed is striking: technology was considered as innovation within the artistic experience, as art historian David Mellor affirmed:

> A dream of technical control and of instant information conveyed at unthought-of velocities haunted Sixties culture. The wired, electronic outlines of a cybernetic society became apparent to the visual imagination of an immediate future [….] drastically modernized by the impact of computer science. It was a technologically utopian structure of feeling, positivistic and 'scientistic'. (Mellor in Shanken 2010: 56)

One of the famous presenters was the British artist and theorist Gordon Pask (1928–1996) (Fernández 2008: 163), whose works provide a perfect example of cybernetic art. Contrary to theoreticians/artists like Jack Burnham or Roy Ascott, who had been looking for a connection between art and computers, Pask developed his artistic goals in a cybernetic context, and as a consequence he figures as one of the "most prominent and likely least known" English cyberneticists (Fernández 2008: 163). As Pickering affirms, Pask's involvement in cybernetics started in the theatre, where he participated as an undergraduate and together with Robin McKinnon-Wood founded a theatre company called "Sirenelle", being dedicated to staging musical comedies (Pickering 2002: 426). Pask expressed interest in the integration of a computer into the theatre-performances and constructed a "succession of odd and interesting machines, running from a musical typewriter, through a self-adapting metronome to the so-called 'Musicolour machine'" (Pickering 2002: 426). The Musicolour machine was a cybernetic device that functioned like a homeostat, a performance "centered on a feedback loop running from the human performer through the musical instrument and the machine itself into the environment (light show), and thence back to the performer". (Pickering 2002: 427) Pickering goes on and argues that the human part of the machine could interact with the machine and explore the infinite possibilities offered in this contact (Pickering 2002: 427).

Pask's oeuvre consists of six books on education and cybernetics, 200 essays, music and plays as well as artistic projects (Fernández 2008: 163). His best-known work, the *Colloquy of Mobiles*, also presented at the exhibition in London, emerged from his interest in communication and communicative feedback-loops. Contrary to some of the neighbouring artworks, the *Colloquy* did not directly interact with a computer: Pask arranged five large mobiles hanging from a metal bar at the ceiling, interacting with each other. The mobiles were "tri-dimensional sculptures powered by motors, individually programmed and also partly computer driven". As part of the experiment, the actual computer was hidden in the metal bar at the ceiling (Fernández 2008: 165). The single elements were provided with a tool permitting interaction and communication. In terms of the self-organisation of systems, Fernández offers the following conclusion: "Colloquy met some of the requirements for self-organizing systems that Pask had identified 10 years earlier. In his opinion, self-organizing systems were 'systems that we regard as though they have elements in them that make decisions'" (Fernández 2008: 166).

The euphoric attitude towards cybernetics' possibilities is also voiced in the social and cultural discourses of the 1960s and 1970s, as the Expo 1967 in Toronto clearly demonstrated, which focused on cybernetics in all aspects of cultural and social life (Borck 2008) Even the idea of the Planet Earth as ecological system was based on the connection between early cybernetics, computer- and counterculture, as Fred Turner demonstrates (Turner 2008: 69–102).

AI Art

The innovative dimensions of cybernetics are updated and reflected in the discourses on artificial intelligence (AI) and its aesthetic dimensions. From a technological point of view, the discussion about AI and art has taken on a current dimension with the introduction of Neural Networks from 2015 on, which can be described as a paradigmatic change within computing (Sudmann 2018: 57–59). Accordingly, the resurged research interest in Neural Networks is due to a publication from Krizhevsky/Sutskever/Hinton from 2012, which explored the possibility of image recognition by reducing the error rate more than 50% and rekindled the interest in Neural Networks (Sudmann 2018: 61). In contrast to 'symbolic AI', which could generate intelligent procedures, the new Neural Networks were designed to simulate thinking processes through a large number of interconnected processing nodes, or 'neurons', which work together to process information and make predictions or decisions based on that information. At a high level, a Neural Network takes in input data, processes it through multiple layers of interconnected nodes, and produces an output. Each node in the network is connected to multiple other nodes and processes a small portion of the input data. As the data passes through the network, it is transformed and combined at each node, with the output of one node serving as the input for the next node. This process continues until the final output is produced (Sudmann 2018: 60).

The strength of the connections between nodes, and the weights assigned to each node, determine how the network processes the input data. These connections and weights are adjusted through a process called training, in which the network is presented with a large number of examples and the correct output for each example. The network then adjusts the connections and weights based on how well it is able to produce the correct output for each example (cf. Sudmann 2018: 59–61).

Neural networks are a powerful tool for AI and machine learning, and have been applied to a wide range of tasks, including image and speech recognition, language translation, and decision making. In the context of art, Neural Networks have been trained to understand the style of canonic painters or musicians, and lets the networks reproduce them. "The Next Rembrandt", for example, is a project in which a Neural Network was trained on a dataset of Rembrandt's paintings and then used to

generate a new painting in the style of the Dutch master (https://www.nextrembrandt.com). The network Deep Dream operates to construct surreal or 'dreamlike images'.[6] The Deep Dream programme uses a Convolutional Neural Network (CNN), a special type of Neural Network designed for processing images and visual data. CNNs are a type of artificial Neural Network specifically designed to process data with a grid-like topology, such as an image. They are particularly useful for tasks such as image classification and object detection, as they are able to automatically learn features and patterns in the data. The Deep Dream programme can then be used to alter the image and create new, surreal-looking images. This is done by using the CNN to amplify and manipulate the objects and shapes in the image. The result is an image consisting of nested, distorted, and fantastical shapes and patterns (Miller 2021: 90).

The creation of images is mainly brought about by the so-called Generative Adversarial Networks (GAN). The GAN is a type of Neural Network that is composed of two parts: a generator and a discriminator. The generator produces mismatched outputs, such as images or audio, based on the input data it is given, while the discriminator attempts to distinguish the fake outputs from the contents of its data base. The two parts compete with each other, with the generator trying to produce outputs that are as realistic as possible, and the discriminator trying to become better at detecting fake outputs. This competition drives the network to improve, resulting in the generation of high-quality fake outputs and even creative results (Miller 2021:92).

A very prominent and much-discussed result of a GAN is the digital portrait of the fictitious Edmond de Belamy, by the artist-collective *Obvious*. Although generated and signed by a GAN, the portrait was sold at Christies for 432.500 $. Although its creation definitely undermined the idea of art and artistic authorship, it rather figures as a reflex on the commercialisation of international art markets (Schröter 2021: 100). As has been argued above, Neural Networks are able to act as creative agents within artistic processes, but they cannot fulfil this function within the art system, since it does not allow for a position within. And, additionally, the networks cannot (yet?) understand the cultural and stylistic dimensions of their creativity (Miller 2021: 90). For examples, Belamy's portrait falls short in comparison with historical and actual contemporary portraiture. But apart from these inner dynamics of aesthetic creation, AI artworks reflect upon the structures and discourses of the art system in different ways. Edmond de Belamy's portrait points to its commercial aspects. By signing the painting with the GAN algorithm, the concept of the authorial artist figure is deconstructed. The sale confirms Michel Foucault's position on the "author function" (Foucault 1977 [1969], 124–131) insofar as the "individual author-genius became the leading paradigm for all the arts – despite the obvious ex-

6 (https://deepdreamgenerator.com)

istence of author collectives and artist workshops" (Heibach/Krewani/Schütze 2021: 2). In the case of Belamy, it is still to be questioned, who can claim the authorship-rights to the work of art: the art-collective *Obvious* or the software designer Robbie Barrat, who developed the algorithm (Schröter 2021: 100)

A look behind the facades of the concept of authorship reveals its instability. In particular, modernist artists such as Elsa von Freytag-Loringhoven and Marcel Duchamp set out to undermine the idea of individual authorship by inserting ready-mades into the art system. According to Anke Finger (2021: 122) these pieces "return us to fundamental questions regarding authorship that may help contribute to the focus on media authorship and media environments that simultaneously accommodate authors, non-authors, curators, collaborators, collectors and editors – all producing remixes and mash-ups across the arts and across media".

In this way, stimulating artworks have emerged that actively dismantle the concept of the author and reveal a network of aesthetic interactions. If this approach is transferred to the products of artificial intelligence, the respective works take on a different significance. It is no longer about the simulation of canonical works, but about the productive and creative use of artificial intelligence. Miller (2021: 97) predicts a convergence of artificial and human intelligence in creative work and expects a shift in the definitions of creativity as human-machine interfaces continue to improve. He claims that "consciousness is created through data processing, and there is no reason why consciousness cannot be programmed into a machine".[7]

Due to the changing technical conditions and qualities of software, the question of the connection between creativity and artificial intelligence must be continually revised. This fact also applies to Dieter Mersch's (2019, p.71) arguments, which do not take into account the new technological circumstances: Although mentioning Alan Turing's Turing machine and its computational capacities, he still insists on a difference between calculability (*Berechenbarkeit*) and non-calculability (*Nichberechenbarkeit*). The difference between these values bring about creativity, as Mersch (2018, 719 argues: "there is a gap between computability and non-computability which cannot be closed and which, as a difference, cannot itself be returned to an algorithmisation".[8]

With all due caution, however, it can be assumed that Neural Networks function differently from a Turing machine, as Sudmann (2018: 66ff) elaborates: While the Turing machine digitally operates with the 0/1 units and thus follows the von

7 Original quote: "Bewusstsein entsteht durch Datenverarbeitung, und es gibt keinen Grund, warum man Bewusstsein nicht in eine Maschine programmieren kann".

8 Original quote: "ergibt sich ein nicht zu schließender Abstand zwischen Berechenbarkeit und Nichtberechenbarkeit, der als Differenz nicht selbst wieder einer Algorithmisierung zugeführt werden kann".

Neumann computer architecture, artificial neuronal networks do not follow this architecture, but they work in a parallel structure, as Sudmann argues:

> Secondly, it is important to emphasise that the massively interconnected neurons that are activated by an input fire together or in parallel, and in this way they form a complex emergent system, which ultimately overcomes the discreteness of the elements of which they are composed [...] This extreme or massive parallelism of information processing is another essential characteristic of artificial neural networks, which distinguishes them from the serially organised Von Neumann architecture that is still dominant today. (Sudmann 2018: 67)

Miller (2021: 95) supports this point of view by underlining the networks' capability in surpassing the data structure and generating 'independent' decisions, which have not been programmed in advance.

Luciana Parisi (2018: 99) connects to the idea of the learning capability of artificial Neural Networks that is not structured as a top-down process, "but as a trial and error data mining through unconscious and non-hierarchical orders from decision processes". The differing knowledge processes define the form of machine learning, which she considers to be based on conclusions (abductive) and being apt for reflecting on the limits of thinking, which allow for a certain indeterminacy of thinking processes (109). Consequently, she proposes to consider machine learning as a form of experimental inferentialism (in the sense of information the we derive from our senses) to understand the incomputable reality and machinations of data (111).

These reflections on the operations of Neural Networks point to a new formation of knowledge and media. Pointing to the list as a historical formation of media, knowledge and statement, Irmela Schneider (2006) argues that media undergo stable connections with knowledge in the sense that all knowledge is brought about by media. Applying this trias to a contemporary structure, we have to admit that the impact of artificial Neural Networks is eminent and thus bring about a change in knowledge systems. Whereas the laboratory has clearly functioned as a part within knowledge systems, Neural Networks have taken their place as well, especially within the cultures of everyday life.

Contrary to the cultures of the everyday, however, where networks figure as "cryptic, invisible arrangements" (Sudmann 2018: 63), Neural Networks are visible in aesthetic creations and here they cause controversial discussions on account of their creativity. For this reason, AI art is able to reveal the couplings of media, statement and knowledge in its specific artworks.

Conclusion

This chapter looks at the complex relationship between art and AI. In historical retrospect, it was possible to show the extent to which a connection between technology and art was established with the help of the cybernetic claim to art. However, in its early days, technical art was not integrated into the art world, but existed in parallel, mainly in the technical universities.

The shift in emphasis of artistic creativity to machine processes raises questions about the status of authorship. It becomes clear that authorship in artistic processes functions only as a blank space in the discourse and as a sales strategy. With regard to the avant-garde productions of early modernism, Anke Finger (2021) clearly shows that many works of avant-garde art provide a reflexive network between materials, media and creative actors.

The newly developed Neural Networks continue a programme developed in cybernetics by organising independent feedback and learning processes. Creative work thus becomes the hallmark of digital intelligence. Questions about the specific creativity of Neural Networks thus also always touch upon the social, structural and aesthetic dimensions of the art system, and are ultimately linked to the concept of art.

Another aspect of neural creativity that cannot be ignored arises from the networks' working methods. As has become clear in the meantime, the results of the networks depend on their data situation and their respective input. The input or visual archive of the networks comes from aesthetic and/or social decisions. These interfaces provide the space for a creative, aesthetic cooperation between machine and artist, thus opening up the network of materials, procedures, media and art business that was already in use in the avant-gardes. The creative, artistic intervention in the networks' ways of working opens up a reflective approach to their ways of working, as Inke Arns (2021) points out. With this creative intervention in the workings of artificial intelligences, a traditional function of art, that of critical reflection on contemporary societies, has been restored. And, at the same time, is the unsettling intelligence of artificial thinking domesticated?

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