AI Creativity and Chance Operations

Dieter Mersch

The following considerations are devoted to determining the extent to which artificial systems can be creative in terms of artistic practices. Only those aesthetic productions that have been generated solely by means of AI programs are discussed. The central question concerns the nature of their "creative *momentum*," i.e., whether the attribution of genuine creativity to formal machine processing is adequate or stems from a category error. The thesis is that in all AI projects—whether historical ones or recent models such as Convolutional Neural Networks (CNN), Generative Adversial Networks (GAN), or Large Language Models (LLM) —random parameters are used at a central point in order to produce creative moments, confusing creativity and randomness.

Neural networks and machine learning

"Computer art" is not a precisely defined phenomenon; many forms can be distinguished, including collaborative projects between artists on the one hand and AI, robotics, and network systems on the other. In addition, there are all kinds of interactive projects in which control is achieved through dialogical interaction between humans and machines. In contrast to this, only *genuine AI projects*—those that claim to have already solved the creativity-problem by getting the machines themselves to act creatively—are considered below.

If one attempts to gain a heuristic overview of the various solutions that circulate today, three main forms can be distinguished so far:

a) *AI projects* that originate from identification programs such as image and facial recognition and use them against the grain. Images are generated depending on previously entered data sets that are taken from existing databases and whose character remains recognizable in the output of the

programs. One example is the so-called "Inceptionalism" project founded by Alexander Mordvintsev and Mike Tyka, both Google employees.

b) *Compilative projects* that recombine a large amount of historically given input like works of art, either by imitating a certain style of painting or by mutating motifs over time on the basis of statistical averaging and thus creating new "works." Examples include *The Next Rembrandt* (2016), a project initiated by Microsoft in collaboration with Delft University of Technology, the Mauritshuis in The Hague, and Amsterdam's Museum Het Rembrandthuis on behalf of the advertising agency J. Walter Thompson, as well as the widely-discussed portrait *Edmond de Belamy* by the French artist group Obvious (2018), which was auctioned for USD$432,500. They are mainly based on GAN.

c) *Prompt-based design projects* based on text-to-image generators such as DALL-E, Midjourney, or Stable Diffusion, to name just the best known. They are continuations of LLMs such as ChatGPT, which in turn has now gained a number of competitors including Grok and Lama. They react to certain textual descriptions, whereby the results vary greatly depending on the accuracy or vagueness of the input, but all in all they are nothing more than *illustrations of voice commands*.

This in turn must be distinguished from art productions in which artists misappropriate various AI systems and draw on specific "aesthetics" to create immersive or critical works of art based on (1), (2), and/or (3)—Mario Klingemann, Refik Anadol, Christa Sommerer, Travor Paeglen, and Hito Steyerl come to mind. Their discussion is omitted in the following because their works are based on artistic principles that conceal rather than exhibit the genuine share of AI-generated creativity. Instead, the focus is on programs that pretend to be creative in a human way in their own right. Prompt-based design projects based on text-to-image generators are also omitted because their creative potential is too meagre; not only because they depend on human-set prompts, but also because repetition and thus cliché reign supreme in them.

In contrast, the focus is on the first two image generators mentioned above in order to investigate their inner mathematical structure. Upon closer observation, they add something new to what the computer experiments of the 1960s launched, namely artificial productions by means of random parameters: statistical optimizations that proceed economically and thereby stage systematic mutation leaps alongside a much richer source material. They work through massive networking, above all by strengthening and weakening connections

and their weights using matrix calculations into which filter functions are woven. The decisive factor here is the use of an "aesthetic" Turing test to verify the originality of their artistic and creative status by testing the quality of the results, comparing their artificial productions with works by existing artists *cora publico*.[1] The assertion is that, if no difference can be recognized for the time being, i.e., if we are dealing with an *undecidability*, we must credit computer art—as Turing postulated for machine intelligence—with an equally original and creative rank as artistic creations. However, the comparative situation fails to take into consideration, first, the difference between undecidability and indistinguishability, because it is not possible to infer the latter from the former, and second that, as Arthur Danto has demonstrated on the basis of Andy Warhol's *Brillo Boxes* (1964), the distinction between art and non-art is not a matter of the *aisthēsis* alone. The artistry of an object is by no means determined only by visual appearance; rather, art is first and foremost a way of thinking whose expression does not submit to the appearance of visibility.

The criticism presented below is thus based on the fact that the technical procedure of artificial art and creativity and, as a result, the recognition of a work or an action as "creative" or "artistic," differ seriously (i) from a proper understanding of creativity and art itself; and (ii) because AI is based on a short-circuited concept of art and creativity, since the actual momentum of artistic *creation* in all computer models in question comes from a *probabilistic caesura as a marker of difference* that promises the simulation of autonomous acts. In this way, (iii) the aesthetic Turing test—like the original one—turns out to be a paralogism that says nothing.

Aesthetic AI projects based on image and facial recognition programs

This refers us back to the actual, seemingly "creative" image generators, whereby for reasons of space we will focus paradigmatically to CNNs and GANs alone. In order to understand them and their potentials, one must

1 On the problem of an aesthetic Turing test, see Catrin Misselhorn, "Wie ein handelsübliches Urinal," *Süddeutsche Zeitung*, February 21, 2025, https://www.sueddeutsche.de/kultur/ki-kunst-christie-s-auktion-li.3203930?reduced=true (last accessed 22.2.2025).

penetrate to the heart of their mathematical functions. In fact, the first models that triggered a certain hype about the intrinsic creativity of computer programs were, in addition to game programs—in particular chess computers such as Deep Blue or the AlphaGo from Deep Mind—and neural networks, preferably used for image classification or object recognition. The most powerful of these are CNNs, based on massive parallel connections of different *layers*.[2] Their mathematical structure is grounded in multidimensional, linear systems of equations, but in such a way that it is not their solution itself that is of interest, but the distribution and calculation of their "weights" or coefficients, whose order can in turn be written down as matrices. Decisive for their transformation, which provides the actual recognition, are again the so-called "convolutions," i.e., specific functions, which generate third functions by composition, which induce the strengthening or weakening of the network connections. A certain *black box character* is ascribed to their mode of operation, insofar as it is unclear even to their designers according to which criteria the machines make their decisions—which are of course not *theirs*, but effects of their calculations. Above a certain level of complexity, *emergences* necessarily arise which—even in equation systems—no longer appear logical, but rather approximately so. Where darkness prevails, people tend to attribute independent or magical properties, as if machines resemble living creatures.

In addition, the functional structures used, by focusing on frequency distributions, deviation rates, or Gaussian curves, i.e., on statistical measurements, make the results appear as if they exceed the simple determinative random processes of earlier eras. In truth, they do nothing more than shift them.[3] Correspondingly, their systematic application—according to Margaret Boden's theory of creativity,[4] which underlies most descriptions of AI art projects as authoritative—produces "interesting," sometimes "surprising" or "unanticipated," results, superficially appearing to be "new." The attributes that Boden herself classified as insufficient, however, seem to be enough for

2 Cf. Yann LeCun, *Generalization and Network Design Strategies*, Technical Report CRG-TR-89-4 (University of Toronto, 1989), https://yann.lecun.com/exdb/publis/pdf/lecun-89.pdf. For the history see: K. Kavukcouglu and C. Farabet, "Convolutional Networks and Application in Vision," in *Circuits and Systems (ISCAS): Proceedings of 2010 IEEE International Symposium* (2010), 253–56.

3 For an overview, see Philip Galanter, "Computational Aesthetic Evaluation: Past and Future," in *Computers and Creativity*, ed. Jon McCormack and Mark d'Inverno (Springer, 2012), 255–93.

4 Margaret Boden, *The Creative Mind: Myths and Mechanisms* (Routledge, 2003).

many *artificial artists* to promote their productions as "creative," even if they are selective and lack a sense of global narratives, let alone whether they meet human-relevance criteria. In contrast, there is a *persistent precedent for reception-aesthetics* in computer-art theories, that, where confronted with opacity, sense the potential for authentic creative leaps, because it looks as if the programs generate original material. However, it is not aesthetics of reception that are decisive for art and creativity, but aesthetics of production: It is not *what appears* a surprising twist that is essential, *but the underlying artistic thinking, its experimental arrangement and its epistemic content*, that is decisive, and in contrast to that, *what happens in the machines mathematically when they generate their artifacts*. To speak of "art" or authentic creativity therefore indeed seems hypertrophic.

Fig. 6: Alexander Mordvintsev, image from the Deep Dream series.

Look for instance at Alexander Mordvintsev's Deep Dream series (Fig. 1). What is happening here? The image shown is based on an application of CNN,

but oblique to its actual function.[5] A large number of hidden "computer layers" are interconnected and provided with a large number of equally standardized inputs, usually simple animals or objects, which in turn are converted into discrete sets of numbers in order to be computable: in this case dogs and other animals. A primitive semiotic approach is at the basis here in order to teach machines recognition. It is important to pay attention to the theoretical foundations in order to understand their reductionism. This is because the method imposes specific conditions on the input, *namely clearly labelable data sets* that originate from plain representation (the primitive semiotic approach)—i.e., clearly specified objects that can be assigned the name "dog," "cat," and the like. The recognition process is thus basically rooted on an *indexical orbis pictus system* that, after a period of avant-garde abstraction, literally makes pictorial representationalism absolute again. It is not necessary to know what "cats" and "dogs" are; rather, their recognition requires quantifications which, as with facial identifications, are based on measurements—e.g., of *landmarks*, a procedure from cartography—which, as we know, can occasionally lead to confusion in the case of cats and dogs.

According to his narrative, Mordvintsev, from Google Zurich, had the idea one sleepless night, supposedly in order to understand how the machines work internally, to stop their processes in the middle, as it were, and feed the intermediate result back into the recognition machine as a new input, and to do this repeatedly, contrary to the original intention. Then, in the middle of the recognition process, discrete sets of numbers emerge, which, retranslated into images, reveal strange entities—chimera-like hallucinations that still prove their dog-like nature, but distorted. We are thus dealing with a mixture of indices, i.e., the production of hybrids or bastards that seem to resemble unusual, uncanny nocturnal creatures, but whose random generation is by no means compatible with what we understand by creativity or art. Although, according to Margaret Boden's minimal criteria, they certainly represent "the surprising," "the unpredictable" or "the unusual," and "newness," this is not enough to see

5 For more details on how it works, see Alexander Mordvintsev, Christopher Olah, and Mike Tyka, "DeepDream: A Code Example for Visualizing Neural Networks," *Google Research* (blog), July 1, 2015, https://research.google/blog/deepdream-a-code-example-for-visualizing-neural-networks/. See also Alexander Mordvintsev, Christopher Olah, and Mike Tyka, "Inceptionism: Going Deeper into Neural Networks," *Google Research* (blog), June 18, 2015, https://research.google/blog/inceptionism-going-deeper-into-neural-networks/; Arthur I. Miller, The Artist in the Machine: The World of AI-Powered Creativity (MIT Press, 2019): 58ff.

the pictures as a creative work of art worthy of being exhibited. "Mordvintsev's adventure … was to completely transform our conception of what computers were capable of. His great idea was to let them off the leash, see what happened when they were given a little freedom,"[6] comments Arthur I. Miller in *The Artist in the Machine*, one of the seminal monographs on machine creativity. Their "little freedom" gives rise to phantoms like those from schizophrenic drawings, whose stylistic presence Mordvintsev dubbed, together with Google employee Mike Tyka, who enthusiastically embraced the idea, "Inceptionalism."[7]

An exhibition at Google Art Space in San Francisco in 2015 displayed the collection to the public, with such success that both Mordvintsev and Tyka have since described themselves as computer scientists and computer artists at the same time. However, it is no coincidence that the name "Inceptionalism" is reminiscent of avant-garde styles. So here we have the first "works" of a new generation of AI-supported computer "art" which, however, does not present a new movement in art, but at best some *psychedelic kitsch*.[8]

Compilative AI art projects

The next stage of so-called "creative" AI programs is far more sophisticated, in particular the GANs designed by Google employee Ian Goodfellow in 2014, as well as the subsequent CANs by Ahmed Elgammal. Goodfellow's GANs, which are the paradigmatic focus here, were originally used to generate "realistic" looking images from certain templates. In other words, it is the exact reverse of image recognition: images of objects or faces are generated synthetically from large amounts of data, for example by changing resolutions, filling gaps, applying styles or composing new images from a series of historically predetermined ones.[9] GANs are the basis of most of today's "creative" image generators, but we owe their misappropriation for art production to such spectacular examples

6 Miller, The Artist in the Machine, 59.

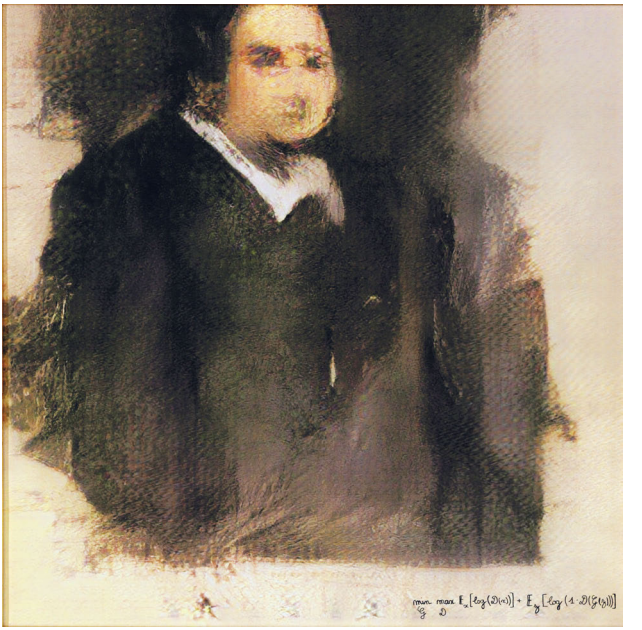
7 Miller, The Artist in the Machine, 66.

8 Cf. Dieter Mersch, "Creativity and Artificial Intelligence. Some remarks on a critique of algorithmic rationality," *Zeitschrift für Medienwissenschaft*, no. 21 (2019): 65–74; Mersch, "Ideen zu einer Kritik 'algorithmischer' Rationalität," *Deutsche Zeitschrift für Philosophie* 67, no. 5 (2019): 851–73.

9 See Ian Goodfellow et al., "Generative Adversarial Nets," in Advances in Neural Information Processing Systems 27 NIPS 2014) (2014), https://papers.nips.cc/paper_files/paper/2014/hash/5ca3e9b122f61f8f06494c97b1afccf3-Abstract.html.

as the aforementioned portrait *Edmond de Belamy* by the French arts collective Obvious, which first triggered the hype surrounding "AI art."

Fig. 7: Obvious (Hugo Caselles-Dupré, Pierre Fautrel, and Gauthier Vernier), Edmond de Belamy (2018)



GANs operate dialogically on the basis of two CNNs that compete with each other. The aim is to create structurally random but creative, i.e., autonomous, images. The first program acts as a *generator* (G), the other as a *discriminator* (D), which evaluates the output of the former according to certain criteria, which in turn are derived from an underlying input set. So, what "dogs" and "non-dogs" are for the classical image recognition of *convolutional networks*, real or non-real or artistic or non-artistic-looking images are for the GANs, whereby "creation" and "criticism" alternate—however, the anthropomorphizing way of speaking should not obscure the fact that we are still dealing exclusively with the *operativity of pattern recognition*, which works statistically and does not "judge" at all.

As the actual aim of the GANs—in contrast to predecessor models—is to *simulate image models by using mathematical patterns*, only the *generator* is initially

relevant, while the *discriminator* has restrictive functions. Like Bense's concrete poetry of the early 1960s, the generator starts with random numbers, while the discriminator comes up with the image material trained from the databases and corrects it by simply deciding if p ε G also belongs to D or not. Hence, we are dealing, right from the start, with a twofold concept of chance: First, the random selection of an initial image p in G, and second, the randomly selected set of images as a benchmark for D, which serves as a criterion for the entire process of competition. What then happens is the successive generation of order from random chaos, which converges approximately to a certain point by using optimization processes. As with all recognition and generation programs, the discriminated evaluations are thus based on probability values, so that a third random measure comes into play, because none of the programs work exactly; we are always confronted with statistically-smoothed threshold values that break off where no further substantial improvement can be achieved. Both pre-trained *convolutional networks* in this way compete against each other, whereby, in accordance with the competitive situation of the two networks, we are confronted with a game manual that emphasizes the ludic character of the overall production. The generator G, hence, delivers improved outputs step by step along the outputs of the discriminator D, thanks to so-called *loss functions* known from economics, until D no longer considers them as errors or deviations.

Mathematically, the process is based on formal game-theoretical premises, as introduced by Oskar Morgenstern and John von Neumann, in particular the so-called mini-max-method and the so called "Nash equilibrium for zero-sum games," which can be used to solve optimization processes with the help of gradient methods according to the formula

$$\min \max E_X [LOG(D(X))] + E_z \log(1-D(G(z)))]$$

The formula is also known from the signature of the portrait of *Edmond de Belamy*, whereby the name "Belamy" as a French translation of "Goodfellow" not only pays homage to the architect of the GANs, but the signature also serves as a reproduction of the central algorithm—standard to machine learning programs—on which Goodfellow grounded the entire two-sided generation process. However, this process should not be regarded as straightforward, inevitably leading to a hypothetical convergence point, for a number of "accidents" can happen along the way—such as the frequent "mode collapse," which consists of concentrating on a certain type of image so that the various outputs are too similar, and the process is ineffective. Sometimes the game also ends in circulation or empty noise, especially if the networks are dysfunction-

ally coupled. Moreover, the parameters can be set too tightly and the gradients too small, so that the process expands endlessly. The mathematics of systems is therefore by no means devoid of experimentation; rather, it is the product of a pragmatics based on various tests and trial-and-error procedures.

At the same time, one can see what this kind of "creative" image generation aims at, especially when it is used to generate art. We are consistently dealing with (i) *probabilistic functions* and (ii) *optimization procedures*; while (iii) the generation of images owes itself to a *ludic procedure* that Roger Caillois, in his classification of the ludic, would have assigned without hesitation to the category "agon," i.e., to a very specific, binary-structured form of play, typical of economical conflicts.[10] All three elements enter into the process of *creatio* and, together with the actual parameters of chance, define the specific *momentum* of machine creativity, which is only indirectly able to depict the necessary difference, the acausal "leap." The ludic reason (iv), on the other hand, also has its origins in the economic with its game strategies trained on a competitive situation, so that the underlying type of reason forms an *economic rationality* alongside the *functional-mathematical* one.

The production of creativity and art is therefore not based on *aesthetic principles*, but exclusively on *mathematical and economic decisions*. If we move specifically from pure image generation—which can encompass any type of imaging, including fictitious photographs such as those on the website *This Person Does Not Exist*[11]—to the question of artworks that make an *explicitly creative claim*, a fifth element should be added, because (v) the "art machines" incorporate *material extracts from all possible art-historical epochs* in the first place. They therefore obtain their basic data from museum repositories or public databases such as Rhizome Artbase and the like in order to elicit the characteristic features that are used to generate "new" products as genuine AI creations; for example, in the case of *Edmond de Belamy*, 15,000 head portraits from the period between the fifteenth and twentieth centuries.[12] Using mini-max-functions, the AI averages these historically canonized works of art and emulates from them what

10 Cf. Roger Caillois, *Man, play, and games* (University of Illinois Press, 2001).

11 https://thispersondoesnotexist.com/.

12 Miller, *The Artist in the Machine*, 119ff.; Hanno Rauterberg, *Die Kunst der Zukunft. Über den Traum von der kreativen Maschine* (Suhrkamp, 2021), 48ff. See also Ahmed Elgammal, "What the Art World Is Failing to Grasp about Christie's AI Portrait Coup," Artsy, October 29, 2018, https://www.artsy.net/article/artsy-editorial-art-failing-grasp-christies-ai-portrait-coup.

appears to be "new." The crucial point then is that *the source of machine creativity* is *the art of mankind*, so that the machines *"learn" and continue into the future what has already been done in the past*. There is no artificial newness in a machine-like sense, but only human creative work and its variation or permutation. The writer Daniel Kehlmann therefore aptly referred to AI as a "secondary user" in his Stuttgart speech on the future, *Mein Algorithmus und ich*,[13] just as Noam Chomsky has flatly accused it of ongoing plagiarism.[14]

However, because machines *project into the future what was already there in the past*, they lack any actual innovativeness. Instead, the possibility of their *inventio* remains tied to the past, true to Nelson-Goodman's dictum that "to create" means "to re-create."[15] Indeed, the quantity of existing works is multiplied many times over in an arbitrary way, so that the creative shrinks to a certain manner of mutation or varying repetition. Caesuras—such as the historical caesura around 1800, the transition to subjective-romantic art, or around 1900, the change to the disruptive avant-gardes—do not occur in this way. The radicality of a break is not in the disposition of machines; it takes humans to break and—as Hannah Arendt characterized the creative act—to begin anew. It is therefore no wonder that, projected into the future, machine creativity and its capacity will gradually become weaker and poorer because it is based solely on *repetition, chance, and variation*. In other words: *AI creativity and AI art necessarily tend to degenerate* successively *with increasing use*.

Evaluation and analysis

This brings us to the end of a brief evaluation, which again can only be sketched for reasons of space. The deception and misdirection of the entire debate about "genuine art and creativity from computers" obviously lie in the fact that the concept of creativity remains essentially misunderstood or naïve, because in its kernel human creation originates from a *reflexive mode*. It cannot be substituted by random processes, just as it is not sufficient to rely just on evolutionary mutation or on repetition and variation. Reflexivity is to be understood in

13 Daniel Kehlmann, *Mein Algorithmus und Ich. Stuttgarter Zukunftsrede* (Klett-Cotta, 2021).

14 Cf. Noam Chomsky, Gary Marcus, and Jeremy Kahn, "Debunking the great AI lie," Web Summit, November 14, 2022, YouTube video, 32:23, https://www.youtube.com/watch?v=PBdZi_JtV4c.

15 Nelson Goodman, *Ways of Worldmaking* (Hackett Publishing Company, 1978).

the literal sense: as *reflectere* in terms of referring back or turning around. We therefore understand creativity not as *a positive capacity of producing something new*, nor as *invention*, but as a primarily *negative force*, as expressed in turning back the gaze, or turning around thought. We do not deny that the concepts such as intuition, inspiration, imagination, or even association and figuration, can be useful; however, at best they refer to the *condition of the creative*, not to its *source or leap and thus to what creativity does or causes in particular, and what makes it happen in the first place*.[16]

Every *creatio*, to begin with this Latin term, reveals itself through its situatedness, i.e., its temporally boundedness, and its relation to the intrinsic constellation of a cultural epoch. It thus *responds* to its inner contradictions and unsolved problems, its obstacles or fundamental impossibilities as they show themselves in the limits of what can be said, imagined, and thought. Their structure and conditions, their excluded and included, enter into the creative act which, as a negative practice, literally seeks to leap over and resolve them (and not "solve" them in a solutionist sense). Creativity thus requires a "leap out," as it were, as the Polish aphorist Stanislaw Jerzy Lec said about the "Open Sesame": "I want to get out."[17] Therefore the actual *creatio* does not seek the entrance, but the exit. The primary experience that ignites the creative *momentum* is thus an act of liberation in the face of closed orders, being trapped in obstructive structures and the apparent hopelessness of opening or unlocking them. *For this reason, the paradox is the prime place where creativity arises*; the creative does not follow any derivation or deviation from rules, no sudden occurrence or coincidence, and certainly not the deterministic mathematical operations. Nor is its source the "nocturnal shaft" of Hegel's images[18] or Sigmund Freud's unconscious or the *écriture automatique* of surrealism. Rather, the creative act derives from the undecidability of paradoxical constellations, their "impossible possibility," and the attempt to destroy their confinement and limitations. It is precisely this impossible possibility that the concept of creativity shares with that of art, which is why there is an intimate connection between them.

16 On the connection between creativity and reflexivity, see Dieter Mersch, "Sprung in eine neue Reflexionsebene," in "Ressource Kreativität," special issue, *Kunstforum International* 250 (2017): 136–49.

17 Stanislaw Jerzy Lec, *More Unkempt Thoughts*, trans. Jacek Galazka (Funk & Wagnalls, 1964).

18 Georg Wilhelm Friedrich Hegel, *Werke*, vol. 10, *Enzyklopädie der philosophischen Wissenschaften* [1817] (Suhrkamp, 1979), 258ff.

The fact, however, that creativity has its reason in something other than a combination of chance and variation, that it is fulfilled in "the different" rather than the revelation of the new, and that art has its meaning in liberating thought and perception from the narrowness of the common-sense-cage rather than in some spectacular aesthetic appearance that at best serves decorative purposes, should be outlined in more detail with respect to a few basic principles of its significance. They anchor their practices, as a social institution, together with science in the open space of what can be addressed as "cultural *episteme*." In contrast, AI art localizes the artistic solely in the ludic as well as in design practices; therefore, it devotes its value exclusively to the visible or audible and relates it to the externality of its bare appearance and the experience it induces. It thus restitutes an understanding of art that consecrates it again to *aisthesis*. This is why values such as beauty, intensity, and immersiveness return as preferred aesthetic feelings and criteria of its evaluation. This in turn is opposed to concepts of art developed in the entire history of aesthetics, i.e., those from Antiquity, handed down through medieval and modern art, and peaking in recent avant-gardism and post-avant-gardism. It also contrasts any understanding of art from the perspective of the aesthetic and its epistemic impact. Correspondingly, what art is and what leads us to label certain objects, representations, images, musical compositions or installations, performances, novels, and the like as "artistic" lies deeper than what is simply accessible to the senses.

This requires a consistent shift from a preference for reception aesthetics to a perspective of *production*. Consequently, an aesthetic is advocated that understands art and creativity from *practices of composition* in the literal sense of *com-positio*, the *interconnection of the disparate*. Here, disparity aims at the heterogeneous, i.e., recalcitrant material, visual, or acoustic breaks, incomparable things or incommensurabilities that react alien to one another and whose gaps or cracks allow the happening of another appearance and thus make the invisible visible or the inaudible audible. A *specific form of thinking* is embodied in this exposition of the invisible or the inaudible. It can be apostrophized as an independent cognitive practice. Our crucial point is: it is incongruous with any act AI is capable of. This is because this exceeding concept of aesthetic thinking cannot be traced back to the formal *logos* or to structures of logical rationality, as embodied in mathematics, or to statistical or numerical pattern recognition, as used in machine learning. *Logos* refers to the mind, to order; likewise, logical rationality must be separated from reason. Instead, AI, whether algorithmically terminated or grounded in probability theory, remains anchored

in pure logic and "formal syntaxes." They not only lack meaning—at best, the modeling of the semantic in AI models follows a second-order syntax—but above all the uniqueness of a *sense of meaning*. It also follows from this that the concept of thinking in general and of aesthetic thinking in particular cannot be predetermined "logocentrically"; rather, any logical or logocentric concept of thinking is misleading. This is why, in our *Epistemologies of Aesthetics*,[19] we spoke of "art" being a *different kind of thinking* and at the same time *something other than thinking*, i.e., thinking outside the logocentric mode.

How is this otherness to be understood? More fundamental than rational structure in thinking is, as Kant rightly emphasized, *synthesis*. *Synthēsis* literally means "bringing together"; that is, in thinking, linking different or disparate elements together, placed in a series or related to one another. The standard form of this sequence or connection is "predication," which admittedly privileges a certain form of *synthēsis*, namely the propositional statement "A is p," which assigns a property to a subject and identifies its determination with this feature. Propositional thinking is rooted in the identification of the non-identical, as Theodor W. Adorno put it,[20] which in turn obeys the logic of inclusion: substances are broken down into a number of attributes and conversely "de-identified" by this number.

In contrast to the discursive, the aesthetic is about a *different kind* of connection. It can best be understood in terms of "montage": different things are "tied together" in their very differentiality (*com-positio*) and thus left in their difference as well as their disparity. They resonate with each other in such a way that an epistemic added value emerges from them. Therefore, if logical thinking is founded in the logic of identity, aesthetic thinking obeys an "alogic" of differences. This means that art proves to be a different way of thinking in the sense of an other-than-logocentric way of thinking, namely a specifically *aesthetic–practical way of "heterogeneous interconnection."* The expression "heterogeneous interconnection" deliberately makes use of a *contradictio in adiecto*, because the preferred form of such connections is disruption, contradiction, or the paradoxical. Adorno therefore defines their structural mode in particular—as the core concept of his philosophy of art—as a "synthesis without judgment."[21] It is non-judgmental because it gets by without concepts

19 Cf. Dieter Mersch, *Epistemologies of Aesthetics* (Diaphanes, 2015).

20 Cf. Theodor W. Adorno, *Negative Dialectics*, trans. E. B. Ashton (Routledge, 1990).

21 Cf. Theodor W. Adorno, *Ästhetik (1958/59)*, ed. Eberhard Ortland (Suhrkamp, 2017); see, especially, the 19th lecture, 294ff. See also Dieter Mersch, "Die ästhetische Synthesis.

for the time being, because it does not proceed in a determinative manner, but rather brings non-identical things together in a "constellation" or "configuration," whereby the prefix "con" again reminds us of the "together with" of the compositional. The decisive factor in this *nondeterminative syntheses of the aesthetic* is thus the "compositional" in its literal meaning of linking or interweaving disparate elements in its singularity, whereby everything possible can be linked or put together: blocks of different sounds, narrative strands, individual words or colors, things that are foreign to each other such as felt and grease or the like. You could argue that AI does this too. But its image processes systematically synthesize pixel by pixel and step by step *from bottom up*. The nature of the compositional proves to be *atomistic* in the same sense *as analytic and syntactic*. Moreover, as we have seen, AI compiles; it assembles different patterns that it has taken from human arts and the "art of the world" and combines them together into new meaningless sensations without any sense of their compositional "drama" and thus without any epistemic surplus.

Conclusion

Combing entities and putting different objects together is therefore not enough to turn them into something that we perceive as "creative" or "artistically significant" or to produce something that we are inclined to call "art." Any kind of combination can lead to an artistic *momentum*, but not every kind induces an *artistic* momentum. So, what must be added? In our opinion, the decisive moment that brings an artistic and creative *surplus* lies in the fact that we are dealing with bulky, contrary, or contradictory constellations, with the interconnection of the incompatible or incommensurable, which can become significant because it creates a tension in itself and uses contradictions to "make the constellated elements dance," as Karl Marx said of social relations. The thesis is then that an epistemic added value, a reflexive gain, can emerge from the combination of disparities, and it is only this epistemic added value and its immanent reflexivity that trigger a creative leap and turn an *aesthetic* artifact into an *artistic* one.

Zur Form künstlerischen Denkens," in *Praktiken ästhetischen Denkens*, ed. Silvia Henke, Dieter Mersch, et al. (transcript, 2021), 53–82.

Creative thinking "thinks" in this mode of its own. AI cannot work in this way.[22] At best, it generates something that allows such events to occur by chance. But this emergence is not a matter of the programs, but a happening in the eye of the beholder. This is why the randomness and chance that come into play here again are not in themselves creative but, rather, like those famous monkeys randomly hitting keys on typewriters for an infinite amount of time who must "almost surely" eventually produce the complete works of Shakespeare.[23]

22 For more details, see Dieter Mersch, *Kann KI Kunst?* (Halem Verlag, forthcoming 2025).

23 The infinite monkey theorem was first published in Émile Borel, "Mécanique Statistique et Irréversibilité," *Journal Phys.*, 5th series, 3 (1913): 189–96. It exemplifies a statistical lemma concerning the relationship between probability and infinity.