arts

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Calculated Randomness, Control and Creation: Artistic Agency in the Age of Artificial Intelligence

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Abstract: The recent emergence of generative AI, particularly prompt-based models, and its embedding in many social domains and practices has revived the notion of co-creation and distributed agency already familiar in art practice and theory. Drawing on Actor-Network Theory (ANT) and its central notion of agency, this article explores the extent to which the collaboration between the artist and AI represents a new form of co-creation and distributed agency. It compares AI art with artistic movements such as Dada, Surrealism, Minimalism and Conceptual Art, which also challenged the notion of the autonomous artist and her agency by incorporating randomness on the one hand and rule-based systems on the other. In contrast, artistic practice with AI can be described as an iterative process of creative feedback loops, oscillating between order and disorder, (calculated) randomness and calculation, enabling a very specific kind of self-reflection and entanglement with the alienation of one's own perspective. Furthermore, this article argues that most artistic projects that explore and work with AI are, in their own specific way, a demonstration of hybridity and entanglement, as well as the distribution of agency between the human and the non-human, and can thus be described as a network phenomenon.

Keywords: artificial intelligence; artistic agency; actor network theory; distributed authorship; human-machine collaboration; co-creation

Citation: Dzhimova, Mariya, and Francisco Tigre Moura. 2024. Calculated Randomness, Control and Creation: Artistic Agency in the Age of Artificial Intelligence. *Arts* 13: 152. https://doi.org/10.3390/arts13050152

Academic Editor: Andrew M. Nedd

Received: 26 July 2024
Revised: 27 September 2024
Accepted: 30 September 2024
Published: 2 October 2024

1. Introduction

In recent years, the rise of AI technologies and their use in artistic practices has sparked a debate regarding the concept of authorship, among the wider public and the art world. It is not only the economic and legal issues of authorship and the related question of copyright that are being discussed and negotiated, but also the question of artistic authorship. In this debate, traditional categories of value, such as autonomy (free self-expression), sovereignty, agency and control, derived from the aesthetics of genius, are repeatedly used to attribute artistic authorship to AI or, at the same time, to write it off (Blank 2024, p. 293). From one perspective, AI is disqualified as a creator, an artist, grounded on the assumption that AI can only generate a recombination of the existing (i.e., the training data), and therefore does not fulfil the classical criteria of artistic authorship such as individuality, (absolute) originality and novelty. At the same time, it is pointed out that human authors operate in a similar way, because they do not create ex nihilo. Artists also have a socio-culturally shaped space of experience, characterized by a cultural-historical framework, from which they draw and create something new through the (opaque) process of recombination (Mersch 2019).

However, the recent emergence of generative AI and, in particular, prompt-based models, and their embedding in many social domains and practices, has shifted the focus of the debate from the question of whether AI is capable of being creative and capable of producing art, and whether or not the role of the artist can be ascribed to it, to the question of collaboration, human-machine co-creation, and distributed agency. There are certainly

different positions on these issues. While some authors argue that in human-machine collaboration, AI is merely a tool controlled by the human actor, the artist, and that AI is merely an extension of human creativity (Muscutt and Cope 2007), others argue that both human and machine shape the creative process in interaction, emphasizing a distribution of agency and control (Schröter 2021). Another position points out that although AI shapes the process and creation of the work through its agency, it is still the human artist who has the aesthetic control and responsibility (Misselhorn 2023). Despite divergent opinions, co-creation, co-creativity and distributed agency are currently gaining relevance as concepts in public discourse as AI has become widely adopted in many social practices and realms, far beyond art.

However, the concepts of co-creation and distributed agency are not new to practice, reflection and theory in art. For example, when considering art movements such as Appropriate Arts and Ready Made but also different formats of collective subjects and diverse artistic approaches involving interactive works with machines, computers and automated production processes, as well as the debates on authorship promoted by Roland Barthes and Michel Foucault in the late 1960s (Blank 2024; Misselhorn 2023).

Against this background, the question arises as to why the use of AI technologies in artistic practice has revived the concept of co-creation and distributed agency, already known in theory and practice, and to what extent this is related to the fact that collaboration between artists and AI might represent a new form of co-creation and distributed agency.

In a first step, this article will critically reflect on the concept of distributed agency and, in particular, outline the Actor-Network Theory, since various actors, such as artists, but also curators, art critics, etc., often refer to this theory and its concepts to describe the collaboration between artist and AI. In a second step, the article will turn to practice and briefly sketch artistic approaches such as Dada, Surrealism, but also Minimalism and Conceptual Art, which in their practice have questioned the autonomy and authorship of the artist over the artistic process. Taking into account the theoretical considerations of Rottmann (2023), this sketch will focus on the role of the artist and the artistic self, as well as the relationship to control or delegation of control over the artistic process. Finally, the third section, will address the question of to what extent artistic work with contemporary AI (such as generative deep models), represents a new mode of co-creation and distribution of agency between humans and machines when compared to the artistic approaches described above.

2. Actor-Network Theory (ANT) and Its Implication for AI Art

Actor-network Theory (ANT) is a theoretical and methodological approach developed by Science and Technology Studies (STS) scholars Michel Callon, Bruno Latour, John Law and others (Callon and Latour 1981, 1992; Callon 1986; Law 1986). The basic idea of this approach is that society consists not only of social relations, but also of constantly shifting hybrid networks, i.e., connections and dependencies between humans, but also between non-human entities such as material things, technical artefacts or discursive concepts (Callon and Latour 1992). The process leading to the construction of an actor-network is described as a transformative process in which the activities of all the actors involved mutually enable and constrain each other, thereby changing each other. Actors do not precede their networking; they are produced by the networking process. The emphasis is therefore on the unity of actor and network and on the term 'actor-network'. Although ANT, as Hensel and Schröter (2012) noted, consists of a variety of different approaches and reformulations, which later also led to post-ANT (Law and Hassard 1999), the discussion involving AI art and the associated question of co-creation and distributed authorship is primarily related to one of its central concepts, namely the notion of agency. According to ANT, and especially according to Latour's reading, "*anything that does modify a state of affairs by making a difference is an actor*" (Latour 2005, p. 71). Thus, agency is attributed to both human and non-human entities.

This does not mean that ANT postulates that things and machines are to be regarded as subjects and social actors and that people are to be treated as objects, but that it assumes an interweaving of humans and non-humans that form a network. One of Latour's popular examples of such entanglement is the man with the gun: neither the man nor the gun alone kills, but the interweaving of both entities, with their specific potential for action, so that the act of murder can take place (Latour 2006). Thus, by focusing on the network and its constant recomposition, ANT attempts to overcome the common subject-object dichotomy. In this respect, as noted by Hensel and Schröter (2012), ANT is seen less as a theory than as an "*anti-reductionist heuristic*" that is concerned with the description of actor networks. Applied to the context of art, this means, in a very abbreviated form, that all the entities, such as the artist, the studio, and all the materials, objects, technologies, tools, infrastructures, etc. involved in the practice, form an actor-network in a dialogue-based process in which agency is distributed. Neither does the artist have a finished idea in her head, which she merely translates into materiality through complete control of the instruments, nor do the instruments and objects completely determine the artist's creative possibilities. Rather, depending on the configuration of the given network, the artist's agency is expanded, shifted, supplemented, modified, or—to use the vocabulary of ANT—'translated' (Callon 1986).

Inspired by ANT some empirical studies examine the role of non-humans involved in the artistic process, revealing that the agency of materiality, and engagement with it, is crucial to the process by which artworks are created (Rubio 2012; Yaneva 2003a, 2003b; Schürkmann 2018; Lehmann 2012; Berger 2012). For example, Rubio (2012), in his study of the production of Robert Smithson's earthwork sculpture "Spiral Jetty" (1970), shows that the concrete form of the artwork was not a simple and direct mechanical realization of an abstract idea in the artist's mind, but that the artwork unfolded step by step as a result of the various practical problems and constraints, but also the possibilities and solutions that emerged from working with certain technologies and materials. So, the site and the materiality functioned as "*affordances*" in the sense of Gibson ([1979] 2014), which made certain ways of thinking and acting possible. Accordingly, the artistic creative process is defined as a distributed process between humans and non-human entities that are interwoven in a network. Thus, there are neither subjects who completely control materiality and their environment, nor determining technologies and objects, but rather actor networks, an interplay between humans and non-humans or, in the terminology of Pickering (2012), a "*dance of agency*" in which (human) actors alternate between phases of activity and passivity and in which human and material agency mutually condition and enable each other in an interplay of resistance and adaptation.

However, assuming that the distribution of agency applies to social practices in general, and therefore to art in particular (and thus to all art practices), two interrelated questions arise: whether, and if so, what is different or novel about the co-creation between the artist and AI; and why does the long-known concept of distributed agency and authorship become relevant precisely in the current context of AI and its use in artistic practice?

We defend that in the artistic process in general the materials and tools involved have an agency, be it through their resistance (Pickering 1995) or their affordances (Gibson [1979] 2014), and thus exercise control in the creative process without the human actor (the artist), having actively transferred this agency and control to them. In the case of AI art, however, the delegation of autonomy and control to the non-human, (the AI), is intended by the artist. Certainly, the reasons for this delegation of autonomy and control may be very different and vary depending on the artistic approach. However, in the use of AI systems in artistic practice, there appears to be two types of delegation of control: (a) the unintentional delegation of control, on the one hand and (b) the intentional delegation of control on the other, or in Morris's ([1970] 2010, p. 88) terminology, a '*controlled loss of control*'. For example, the work "Teratoma" (2017) by the artist Mario Klingemann ends up in black and white, as he noted, not because he intended it that way from the start, but because this decision arose in the course of the artist's examination of the limits and resistances of the materialities

involved, in this case in the course of the training process of the generative neural networks he used for this work (Klingemann 2017). Just as Pickering (1995) characterizes scientific practice in his theoretical approach as a dialectical process of resistance and adaptation, which he metaphorically describes as "the mangle of practice", in which goals are not fixed at the outset, but evolve and transform in the temporal confrontation between human intentionality and the resistance of materiality, Mario Klingemann (2023) also describes the use of AI, in this case generative neural networks, in his artistic practice.

> *"Once I had enough training material the next challenge was the training. It turned out that training a model is not as straightforward as it sounds like. It often felt like trying to put down a too-large carpet into a room that is too small: there was always some bubble popping up somewhere and if you flattened it then it popped up in a different corner. In practice this meant for example that I had managed to get my face model to generate very convincing eyes, but then it created nasty artefacts in the smoother skin areas. Trying to fix that by training more or changing the architecture resulted in nice skin details, but suddenly the eyes got smudged again. There seemed to be a limit as for how much such a model could learn which is for example the reason why the "Teratoma" series is black-and-white: by not having to learn color the model had more capacity to focus on textures."*

This kind of agency and control described by Mario Klingemann (2023), which the tool exercises over the creative process and shapes it, happens without the artist having actively delegated this agency and control to the tool. The resistances of materiality and the resulting deviations from the artistic concept occur unexpectedly and unpredictably. They are initially a disturbance to which the artist has to adapt, rather than an inspiration. Certainly, this disturbance may later prove to be a source of inspiration, but above all it is a resistance of the materiality that the artist did not expect. And this mode of loss of control over the creative process different from the intentional delegation of control, in which the artist has decided from the outset to work with a tool, in this case an AI, that is expected to produce the unexpected, the surprising, the unthinkable, since a key characteristic of contemporary AI is its opaque and incomprehensible mode of operation. In addition, contemporary neural networks can perform complex transformations, i.e., find complex correlations in the data that humans would not even think of, and thus achieve new and surprising results. This also applies to Generative Adversarial Networks (GANs) as a particular group of artificial neural networks, introduced by (Goodfellow et al. 2014), which are able to generate new data from input and have therefore been widely used by artists in the last decade.

Working with AI, and particularly GANs, means that the artist is intentionally collaborating with a non-human entity whose functioning is often incomprehensible and therefore influences the creative process in unpredictable ways, leading to results that are beyond the artist's control. However, it is the artist who has intended this state of loss of control over the creative process and the production of the unexpected. The unexpected is therefore to some extent to be expected, it is calculated by the artist. Indeed, artists often point to the unpredictability inherent in neural networks and their emergent properties as what makes AI interesting as an artistic medium. The artist Roman Lipski (2024), for example, argues that "*the beauty of using AI as an artistic tool lies in the constant surprise it brings*".

However, this characteristic of working with AI, namely the calculated unexpected and the deliberate delegation of control over the creative process, is not exclusive to AI art, but has a long tradition in art.

3. The Aesthetics of Surprise and the Overcoming of the Boundaries of the Artistic Self

The intended delegation of human autonomy and control to non-humans and the resulting unpredictable, unimaginable, unexplored, surprising etc. results are not new in art practice. Rather, the "*aesthetics of surprise*", as Rottmann (2023) argues, has a long tradition in art and encompasses a variety of different artistic practices and art movements as well as analog and digital art forms. Examples of such artistic approaches include Dada,

Surrealism, Action Painting, but also Minimalism and Conceptual Art, as well as so-called Generative Art, which, according to Galanter (2016), is not limited to computer-based or high-tech art.

Although these artistic approaches are very heterogeneous, using different processes and techniques and practiced in different historical, cultural and technological contexts, many of these artistic practices share a similar motive: That is, the delegation of (partial) control over the creative process and the associated claim to overcome the boundaries of the artistic self. Representatives of Dadaism, for example, developed and practiced the cut-up technique, in which an existing text is cut up and the fragments are then randomly rearranged to create a new work. Similarly, the Dadaists worked with images by creating collages and montages that were also based on chance, such as the artist Hans Arp, who created a series of collages by dropping squares of contrasting paper onto the surface of a larger sheet and then sticking them where they landed on the page. The introduction of randomness was a way for the Dadaists to challenge the bourgeois norms of traditional art production and to question the role of the artist and their (absolute) control over the artistic process. The Dadaist tradition, based on irrationality and randomness, led to Surrealism, whose proponents sought to eliminate the "*control of sanity*" (Rottmann 2023) by referring to the psychological automatism. They considered automatism as a way of overcoming conscious control of the artistic process and unleashing the creative power of the unconscious through different methods such as through dreams, hypnosis, drugs, etc. Surrealists considered this approach as a way of overcoming the culturally, intellectually and historically shaped boundaries of the artistic self that have been imprinted on it through socialization, education, culture, etc. Inspired by the Surrealists, the proponents of Action Painting, above all Jackson Pollock, also left the creation of the picture to randomness, using an immediate and dynamic painting technique that was considered spontaneous and intended to limit the artist's conscious influence on the process of finding form. However, as Rottmann (2023) notes, the Surrealist technique of automatism and the method of Action Painting remained in an anthropocentric mode in that the role of the artist with her—although unconscious—self, her emotions and her spontaneity were crucial to the creation of the works. This contrasts with subsequent art movements such as Minimalism and Conceptual Art in the 1960s, which also pursued the motif of overcoming the boundaries of the artistic self and its limitations and cultural imprints, but by delegating the artist's control to an external system that partially automated the artistic process. In this sense, these art movements claimed to operate in a mode of depersonalization, and externalization (Rottmann 2023). By delegating some, or all, of the processes within artistic practice to an external system or rule-based media such as matrices, diagrams, net papers or computer algorithms, these artistic approaches aimed to remove personal taste and handwriting and thus subjectivity and personal bias from the artistic process.

Accordingly, the work was to be at least partially self-generating and thus contain a moment of (self-) surprise. As Morris ([1970] 2010, p. 88) notes, these processes of automation 'open up the work and its interaction with the artist's behavior to additional forces beyond his personal control'. For example, conceptual artist and theorist Mel Bochner (1997, p. 8) noted: "*For me, the use of self-generating procedures to make art was a liberation from the limitations of my own ego. It was an escape from individualism through the objectification of process*."

Furthermore, the delegation of control over the creative process through the use of a rule-based system applies not only to Minimalism and Conceptual Art of the 1960s, but also to Generative Art in general, based on Galanter's (2016) art theory, according to which the key element of Generative Art is a system to which the artist relinquishes partial or complete control. Furthermore, this system could be, as he argues, "*a set of natural language rules, a computer program, a machine, or other procedural invention, which is set into motion with some degree of autonomy contributing to or resulting in a completed work of art*" (Galanter 2016, p. 4).

Although the artistic practices and art forms briefly outlined here seek to question the role of the artists in the creative process as well as to overcome the boundaries of the artistic self, they do so in very different ways. While the Surrealists, using the method of automatism, operate in an anthropocentric mode in which the self and self-expression are at the center, Dada on the one hand, and Minimalism and Conceptual Art on the other, operate in a mode of externalization, or depersonalization. The focus is not on the self and its expression, but on an external entity, a system based either on disorder and randomness, as in the case of Dada, or, by contrast, on rules and order, as in the case of Minimalism and Conceptual Art. This is not surprising, given that these artistic movements emerged in very different historical periods, with their own discourses on art and creativity. While Dada and Surrealism arose out of a rejection of the logical-rational, conventional and bourgeois understanding of art, Minimalism emerged against the backdrop of the Cold War, the advent of the computer and cybernetics (Rottmann 2023). It was also during this period, in the 1950s and 1960s, that creativity was increasingly seen as a resource and was researched, systematized, instrumentalized and propagated in various military, psychological, economic and socio-political contexts (Reckwitz 2012; Mareis and Rottmann 2020). As Rottmann (2023, p. 139) notes, Minimalism not only addressed aesthetic categories such as authorship and control, but also pointed out that even a practice based on rule-based systems could produce the unexpected, the unplanned. It was therefore also a critique of the promise of automation and its associated control and rationality.

This brief digression should illustrate that the intentional delegation of autonomy and control, and thus working with the unexpected, the unthinkable, with an aesthetic of self-surprise, has a long tradition in art history and is not unique to artistic practice with AI. However, given the different contemporary discourses on creativity from those of the early 20th century or the 1960s, and the rapid technological developments in the field of AI, it is to be assumed that collaboration with contemporary artificial neural networks unfold in new ways, and that the reasons for working artistically with autonomous systems and thus with an aesthetic of the self-surprise are quite different.

4. The Process of Oscillation between Control and Controlled Loss of Control as a Specific "Dance of Agency"

The term AI art encompasses very heterogeneous practices and, in this sense, art forms, as the various artists come from different fields and have different technological, media or visual art backgrounds, use a range of different technologies and applications, pursue different goals and, accordingly, have very different artistic approaches. As Ploin et al. (2022, p. 30) illustrate in their study, some artists write their own algorithms from scratch, others use off-the-shelf algorithms, and third use existing algorithms but modify them for their own purposes. In addition, the artists trained the models on existing, curated or self-created data sets. Furthermore, artists work and experiment with AI in very different ways, with fundamentally different attitudes objectives from experimental-exploratory to critical-reflective, resulting in different aesthetics (Scorzin 2023). As curator Laura Elliott (2022, p. 83) noted, "*some technical artists, such as Mario Klingemann and Alexander Mordvintsev, focused on aesthetic novelty and beauty, while critical media artists, such as Coralie Vogelaar and Constant Dullaart, were more concerned with the commentary, meaning and history within each work*." Furthermore, the artistic exploration of AI spans more than a decade, if we consider the introduction of machine learning architectures such as deep neural networks in the second half of the 2010s and the provision of more accessible technologies to artists as a point in time. In addition, there were artists such as Harold Cohen and David Cope who were already working with AI in the 1970s and 1980s.

However, despite the wide temporal range and heterogeneity of AI art practices, there seems to be something that many of these practices have in common, namely the motive of working with AI to push the boundaries of one's artistic self and the limits of one's artistic approach. Mario Klingemann (2023), for example compares AI with "*a 'parascope'—an*

instrument of inspection—that allows us to observe and discover things which are beyond our reach, such as the microscope or the telescope did before". The artist Sofia Crespo (2023) also refers to the microscope to illustrate that both the AI and the microscope make things visible that cannot be seen with the naked eye. Similarly, the artist Memo Akten (2018) describes AI as an "extension of our mind and body". The artist Kevin Abosch (2023) explains how he started working artistically with AI and points out that he saw AI as an opportunity to expand his own artistic practice.

> *"My exploration into AI is part of a broader quest to understand my identity and how I connect with the world. Years ago, I began to wonder what would happen if I fed my own photographs, taken with intention and care, into a machine. Would it be possible for the machine to learn from my imagery and then generate new works that are extensions of my art? I wanted to see if the resulting creations would evoke an emotional connection for me. This experimentation started years ago with early generative adversarial networks."*

Referring to the ability of generative deep models to recognize patterns at different levels of abstraction in huge amounts of data, and thus to make this data extraction tangible, as well as the ability of these models to rearrange elements in new ways and to generate new, "*unthinkable*" variations through randomness, many artists describe working with AI as an extension of their own personal or even human perspective. As the artist Feileacan McCormick (2022) from the artistic duo Entangled Others noted:

> *"It (AI) allows us to make tangible the distilled essence of vast swaths of data that would be incomprehensibly complex to us as human individuals in a manner that is possible to interact with intuitively. (. . .) We see a lot of our work as trying to find ways of using systems in order to augment our creative process, to externalise certain parts of what would otherwise be an entirely internal personal practice and thus be able to explore with a far vaster range of potential variation (thanks to randomness) through constructing feedback loops that explore the many different ways of creating performative rulesets."*

By incorporating generative deep models such as GANs or diffusion models into their own artistic practice, artists are delegating control of the artistic process to an external system, similar to Dada, but also to Minimalism and Conceptual Art, i.e., in a mode of externalization. However, there seems to be also differences at a practical or operational levels. According to Galanter (2016) and his reference to complexity theory, neural networks are complex systems that combine order and disorder at the same time. On the one hand, similar to Dada, randomness plays a central role, because the incorporation of randomness into deep neural networks is crucial to their ability to output multiple possibilities from the same input, generating variation rather than the same result over and over again. At this point, the processuality of the machine, of the system, is beyond the artist's control. Many artists describe this delegation of control as inspiring and see it as an opportunity to develop ideas beyond their own perspectives. For example, the artist Kevin Abosch (2023) notes: "*Control with AI is different. It's not about mastery over craft but about embracing the unknown and integrating it into the creative workflow. (. . .) Artists who are not afraid of the unknown and who can work with this lack of control will master the use of AI in their art*".

On the other hand, generative deep models are certainly not purely random systems without rules. Although their rules are often opaque, there are many levels at which the artist has control over the process, such as designing the model's architecture, creating the data set, and conducting model training. Furthermore, by directly modifying the latent vector as in the case of GANs, the artist can exert some control over navigation through the so-called latent space—the space in which the high-dimensional data—such as an image—is distilled into a low-dimensional space in its essential characteristics. Thus, in the case of GANs artist can directly manipulate even the generative process. In fact, the act of selecting a particular trajectory through the latent space can be observed in many artistic practices, as for example in the work "Three Latent Body Problem" (2019) by Mario Klingemann, where the process of creation is made tangible (Klingemann 2019).

Thus, in contrast to Minimal and Conceptual artists such as Carl Andre, Mel Bochner, Roberth Smithson, Sol Lewitt, (to name just a few), who use simple, highly ordered geometric, numerical and combinatorial systems as generative elements in their work (Galanter 2016), AI artists work with complex systems that combine rules and order on the one hand, and randomness and disorder on the other.

Accordingly, artistic practice with AI can be described as a constant interplay of (calculated) randomness and calculation, as a dialectical process that oscillates between control and deliberate loss of control. The artist Refik Anadol (2020), for example, uses the term 'controlled randomness' to describe this process:

> *"I would say that I use data as pigments in my work. Data and file formats are pigments and these pigments can take many different forms. Data is not just a series of a few piles of numbers, but always a calculation. Calculation and computer systems are always calculation, that is somehow in the nature of things. But it is rather controlled randomness. That's how I end up with individual works, for example. (. . .) When you bring together the frontier of imagination with that of what is technically possible and these two worlds collide, then you have exactly this chance discovery. This moment is not so easy to calculate. But when it happens: Eureka!"*

Furthermore, working with AI is also described by many artists as an iterative process, characterized by continuous feedback loops between input and output and in this sense between the artist and the tool. The artists prompt the AI to generate the preliminary output they are looking for, but the AI's often unexpected output prompts them to adapt the idea, change it, or even redirect and rearrange the artistic workflow. For example, the artist Roope Rainisto (2024) notes:

> *"I have some idea that I want to do these types of pictures, for instance in Vacation. But it's only when I start to create, and I see the results, I see the choices. And after I do that 5 times or 10 times, each time I go deeper and deeper. I might then change my plans, or find something that was much more interesting than the thing that I had in my mind the first place. And I don't think that's a bad thing. That's a good thing. It's a feature, it makes AI art interesting, and you start to go deeper and deeper. And I think that's the way almost all AI artists that start with AI work. (. . .) But I think that the more time you spend with this, the more you start to feel the urge to go deeper and start to explore or to need to create something that feels more personal to you. And that's why I find this process so much more fascinating than writing poems or books or playing in bands, writing songs and so on. I've done a lot of arts, but I just find this process to be so fascinating."*

The feedback loops enable the artists to learn and explore not only the AI's mode of operation, but also their own artistic practice, their own role within the practice and their own aesthetic preferences and biases, which unconsciously flow into the process and influence the different decisions. The system thus enables a mode of aesthetic self-reflection. On the one hand, the machine learns the aesthetic strategies and preferences of the artist and imitates them; on the other hand, it produces unpredictable deviations from them, to which the artist can react in an ongoing process. As the artist Kevin Abosch (2023) notes:

> *"While AI is a tool, it does influence the art significantly. Artists using AI may talk about collaborating with the machine, but I think this is an anthropomorphization I disagree with. The artist brings their experience, intention, and narrative to the table, while the AI, as a mirror/prism, reflects and distorts this input, often revealing a complex reflection of the artist's subconscious. The process changes how artists perceive and feel, permanently altering their perspective."*

As Schröter (2021) notes with reference to Frederic Jameson (1991), this is a "*surrealism without the unconscious*", but in a new way, namely under highly technological conditions—"*the artist is split here into "himself" and a virtual double that imitates and transcends him. He does not express himself, but is reflected in an active mirror*". The artist Feileacan McCormick (2022) argues in a very similar way: "*These feedback loops, wherein we input data into a certain*

system or ruleset and intuitively navigate the outputs, become a means of continuously exploring just how much machines can surprise, but also more crucially, hold up a mirror to our own aesthetic preferences and biases". Similarly, the artist Anna Ridler (2022) described working with AI: "*It is my work but also not my work—recognizably me (especially the first one (image)) but nothing I would have been able to do by myself. Watching it is a very odd sensation like catching a glimpse of yourself in a mirror before you realize it is you*".

Accordingly, AI artists also seek to access the unconscious, however unlike the Surrealists, not to unleash its creative power, but to reflect on and critically question unconscious personal (aesthetic) preferences and prejudices in particular, but also the human anthropocentric perspective in general. By embedding a complex technology such as AI, which can recognize regularities and mirroring the biases and limitations of one's own artistic practice and is also capable of unpredictability and unexpected rearrangements through randomness, AI is seen as a way of creating space for the expansion of one's own human perspective by entangling it with machine vision and, in this sense, with the non-human perspective.

Accordingly, working with AI can be described as an iterative process of creative feedback loops, oscillating between order and disorder, chance and calculation, control and controlled loss of control, thus enabling a very specific kind of self-reflection and entanglement with the alienation of one's own perspective. Thus, the distribution of agency is not exclusively specific to artistic work with AI, but artistic practice with AI is nonetheless a specific 'dance of agency' (Pickering 2012) that takes place in a particular configuration of human and non-human entities, which has only been hinted at in this article and requires in-depth empirical and ethnographic investigation.

5. AI as "Network Phenomenon"

The artistic practice using and incorporating contemporary AI such as deep generative models is characterised by its own specific 'dance of agency', described here as a process of creative feedback loops oscillating between computational order and randomness. Furthermore, this entanglement, this process of oscillation between control and controlled loss of control, and in this sense the distribution of autonomy and agency, is not something that remains concealed in the artist's studio but is staged and demonstrated in most artistic projects. And that brings us to the possible answer to the second question formulated at the start of this article. Hybridity, and the distribution of agency and authorship are well known concepts in practice and theory. However, in the current context of AI and its use in artistic practice, these concepts gain particular relevance, as most artistic projects that explore and work with AI are, in their own specific way, a demonstration of hybridity and entanglement, and thus the distribution of agency between the human and the non-human. Although most artists describe AI as a tool, artworks are staged as the emergent product of co-creativity, collaboration and interplay, and this interplay is made perceptible in different ways depending on the artistic approach. In some works, such as those of Mario Klingemann and Memo Akten, Isabella Salas, Helena Sarin, Robbie Barrat, the artistic duo "The Entangled Others", to name but a few, the very aesthetic and formal language refers to the inclusion of the artificial, synthetic, algorithmic and, in this sense, non-human, and reveals its signature. The artwork "Specious upwellings" by 'Entagled Others' (Entagled Others 2022–2024) or the artwork "All Watched Over By Machines Of Loving Grace" by Memo Akten (2021) could be seen as examples of this aesthetic. In the works of Refik Anadol and Sougwen Chung, the reference to distribution of agency is made by the fact that AI itself appears as a tangible co-producer and creative agent and acts performatively in the work, whether as a visualization medium, as in the case of Refik Anadol (2022)'s work "Unsupervised-Machine Hallucinations-MoMA", or as a robotic arm, as in the case of Sougwen Chung (2021)'s performative installation "Assembly Lines". In the works of the artist Pierre Huyghe, the distribution of agency is staged in a particularly impressive way. He choreographs installations and hybrid arrangements in which the artwork comes into being from the dynamic interaction of various agents, of which AI is only one of many.

The focus is therefore less on the final state of the artwork or the "artificial intelligence", but rather on the ongoing process of the artwork's emergence and the ongoing process of "artificial learning" (Tait 2024). Such a processual, hybrid arrangement is presented, for example, in the video installation "Liminal" (2024), part of Pierre Huyghes' solo exhibition of the same name at the Venice Biennale (Huyghes 2024). "Liminal" (2024) is a monumental simulation of a faceless, naked human body moving in response to real-time information received from sensors embedded in the physical environment. The exhibition is also accompanied, among other works, by two human-machine hybrids called 'idioms', wearing sleek golden masks that monitor the spaces they are in and the visitors they encounter; an artificial intelligence gradually translates this information into a new language so that they can communicate with each other.

As Scorzin (2023) notes, AI art wants to be understood as an expression of a new co-creativity, cooperation and coexistence between artists and AI, between humans and non-humans, and thus as a network phenomenon. Accordingly, by staging the complex and distributed nature of agency and authorship, AI art refers to these well-known concepts and discourses, while at the same time giving them renewed relevance in the public and stimulating the discourse on co-creativity, coexistence and collaboration between humans and machines in its new specific way.

6. Concluding Remarks

Finally, it can be concluded that AI art is practiced, but also staged and demonstrated, in a way that claims to overcome not only the boundaries of one's own artistic self, but also the human anthropocentric perspective. Accordingly, AI art echoes a discourse that began years ago in the face of the climate and Covid epidemic crises, moving away from a purely anthropocentric view. Certainly, even before the rise of AI, non-human rhetoric has saturated contemporary art discourse and practice, and many artistic productions in recent years have focused on the post-anthropocentric topic. However, the rapid development of AI technologies has not only forced the discourse of human and non-human collaboration, co-creation, and the coexistence of human and machine, but has also provided art with a medium that makes the network, hybridity, and distribution of agency tangible to both artists and audiences like no other medium before it.

Author Contributions: Conceptualization, M.D. and F.T.M.; methodology, M.D. and F.T.M.; validation, M.D. and F.T.M.; formal analysis, M.D. and F.T.M.; investigation, M.D. and F.T.M.; resources, M.D. and F.T.M.; data curation, M.D. and F.T.M.; writing—original draft preparation, M.D. and F.T.M.; writing—review and editing, M.D. and F.T.M.; supervision, M.D. and F.T.M.; project administration, M.D. and F.T.M. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Data Availability Statement: No new data were created for this article.

Conflicts of Interest: The authors declare no conflicts of interest.

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