

Bio-AI: The Aesthetics and Ethics of Data Animism

Joanna Zylinska

King's College London, Department of Digital
Humanities

Bio-AI as a Relational Technology of Life

Visitors to galleries, parks and other public and commercial spaces are frequently faced with large-scale media art installations rendering artificial intelligence (AI)-generated data as pixel movement. At times dismissed by critics as mindless visual seduction, mere screensavers with anaesthetic properties, such works offer audiences a digital encounter that demands a more rounded critical response. It is my contention in this article that they enact a form of 'data animism', with AI taking on the function of a biomachine that mediates life. In its ability to not only capture movement but also move us, bodily and affectively, while allowing us to see and experience that movement at one remove through various technologies of mediation, it was cinema that was originally presented, by thinkers such as Henri Bergson, Jean Epstein and Gilles Deleuze, as a source of animist impulses. At a time when cinema has become a much more private and narrative experience, can we consider that the role of the life-channelling medium has passed on to generative AI (genAI)? Taking on board the justifiable concerns about planetary extractivism, the depletion of human and planetary resources by the insatiable technology of machine learning and the threat of human extinction, I will speculate through the course of my argument on the extent to which genAI can be said to make us re-experience the very sensation of being alive under the current techno-social regime. The article will close with a modest proposal for ethical data animism: an idea that pursues more equitable forms of life, artistic production and technological engagement while recognising the ecological fractures that criss-cross our hybrid media existence. This idea will also be performed through a recent visual project of mine, *Les Fleurs du métal*.

To speak of bio-AI in this context is to acknowledge that AI has not merely positioned itself as an external computational tool operating in the service of human intelligence, but that it has become embedded in the very conditions of life itself. From the algorithmic mediation of our techno-social infrastructures to its increasing incursion into our bodies and minds, AI is actively shaping what it means to live, to perceive and to know. In its capacity for pattern recognition, decision-making and, some claim, understanding (Mitchell & Krakauer, 2023; Zylinska, 2024b), it is also redefining the parameters of life and its processes (European Commission, 2025; Qiao, 2025). The prevailing anxieties surrounding AI – its potential to make human labour obsolete, exceed human cognition or even bring about planetary destruction – highlight the extent to which this technology is implicated in not just our sociopolitical but also our existential concerns. The contemporary techno-social regime can be aptly described with Achille Mbembe's (2019: 66) concept of 'necropolitics', a set of circumstances whereby state and corporate actors determine 'who is able to live and who must die', while themselves being in charge of the *very conditions* of habitability and survival. It is in 'the subjugation of life to the power of death' that a supranational power regime is being inaugurated today, according to Mbembe (2019: 92), rooted as it is in the multiple tragedies of racism, slavery, colonialism and financial capitalism. While Mbembe is not writing specifically about AI, his theoretical framework lends itself to analysing AI's overarching logic and reach. The increasingly automated necropolitical structures that drive the current supranational regime extend from predictive policing (Benjamin, 2019) to algorithmic governance (Eubanks, 2018), surveillance capitalism (Zuboff, 2019) and environmental extraction (Crawford, 2021). AI does not threaten human autonomy in some dystopian, science-fictional future: it is modulating planetary and species survival through resource consumption, data extraction and the reconfiguration of social, economic and political relations.

This article thus positions AI, particularly genAI, as a phenomenon that both produces and is produced by specific material, ecological and sociopolitical entanglements. Using the concept of digital ecologies, which offers a 'framework for researching digitised human-nonhuman relations which favours situated understandings of digitisation as a material, affective, and plural process' (Turnbull *et al.*, 2023: 4), it understands AI as a 'relational technology of life':¹ a socio-technical system that actively modulates the conditions of existence in its biological and social renditions. To name it 'bio-AI' is to recognise that AI operates as a fundamental infrastructure of life. Both a structuring and destabilising agent within what we might term, with a nod to Gregory Bateson (1972) and Félix Guattari (2000),

‘ecologies of the mind’ and ‘ecologies of the wild’, AI participates in the recursive loops of extraction and activation that shape life processes at various scales. Yet, as Turnbull and colleagues (2023: 20) argue from the perspective of digital ecologies, which are always situated and plural, ‘the same technologies which enable ethically questionable practices of digital capture, monitoring, control, and commodification incubate potentials for producing convivial futures’.²

The notion of AI as an unstable, mutative system resonates with the broader understanding of digital ecologies as recursive and self-modifying. Just as biological ecosystems evolve through mutation and adaptation, technological systems, too, are subject to ongoing processes of rewriting and reconfiguration. We as human users and subjects of these media systems are equally enmeshed in this instability: our cognitive patterns, perceptual habits and sensory experiences are continually reshaped by the feedback loops of AI-driven infrastructures. To inhabit this landscape is to recognise ourselves as buggy entities, constantly negotiating the threshold between stability and rupture, between what is determined and what exceeds programmability.

Data Animism: From Spectacle to Encounter

A striking activation of AI in the production of hybrid ecologies takes place in immersive installations that draw audiences into projection rooms or open-air sites saturated with data-driven imagery on high-resolution screens. Often featuring synthetically generated nature motifs, such installations envelop spectators in waves of pulsing colour and orchestrated movement. The visuals are frequently accompanied by soundscapes, heightening the sense of immersion. Pushing through the narrative about the unity of all living beings, the *Works of Nature* show by London-based collective Marshmallow Laser Feast (Department of Jobs, Skills, Industry and Regions, 2024), staged at ACMI in Melbourne in 2023–2024, exemplifies this aesthetic, but similar visuality features in more mainstream large-screen ‘experiences’, such as *Frameless* in London or *teamLab Borderless* in Tokyo. With works of this nature, audiences are being enveloped in what the *Post-AI Journal of Art* recently called ‘pixel dust’. Featuring ‘moments of data gorgeousness’, such installations reveal an ‘expensive ... obsession with floating pixels’ which results in nothing more than a ‘flattened, dead aesthetic’ (Ultra, 2024).

While many critics do indeed dismiss such works for their seductive visual hollowness, I want to suggest that those ‘pixel dust’ installations could be read as staging a digital experience that demands more than

just their aesthetic appreciation – or, indeed, dismissal. Audiences frequently respond to them by being transposed into a semi-meditative state, attuning their moving bodies to the exuberant flow of what look like flowers, plants and corals unfolding on screens. Making visitors sense their own media(ted) being, these kinds of works enact what I propose to term ‘data animism’, rendering AI as a biomachine that channels life. As anthropologist Katherine Swancutt (2019) explains, ‘animism is a particular sensibility and way of relating to various beings in the world. It involves attributing sentience to other beings that may include persons, animals, plants, spirits, the environment, or even items of technology, such as cars, robots, or computers’. In recent years animism has been seen as an opening within the over-rationalistic and still frequently positivist knowledge frameworks of the West. Moving away ‘from the colonial notion of animism as the primitive beliefs of the colonized’ (Ingawanij & Ross, 2022), it has served as one of the steps on the path towards the decolonisation of our episteme by foregrounding ‘an experiential and relational practice of living’ (Ingawanij & Ross, 2022) between humans and non-humans. For Ingawanij (2021: 549–550), there is a strong ethico-political dimension to animist thinking: emerging where ‘lives and habitats have been made precarious and increasingly untenable’, animism returns agency to the powerless, allowing them to imagine and enact the possibility of living, relating and future-orientating within existentially threatened worlds. It is in the ascription of animist lifeness to AI technology – and the accompanied felt sensation of their own enhanced vitality in tandem with the AI animations on screen – that audiences can trace a passage beyond AI’s necropolitical strictures, as I will argue in what follows.

The Animism of Early Cinema

There is a long tradition of interpreting various media in animist terms, with early cinema being perceived by many 20th-century theorists as possessing a strong capacity to conjure vitalist impulses. Film audiences reacted dramatically to the motion on screen when seeing a locomotive barrelling towards them in the Lumière brothers’ 1896 *Arrival of a Train at La Ciotat* (Myers, 2020). Similarly, in films such as Thomas Edison’s 1894 *Boxing Cats* (McGoon, 2007) or Georges Méliès’s 1902 *A Trip to the Moon* (Billi Brass Quintet, 2018), movement was central to the cinematic experience, with the film projector repurposing static frames into fluid, lifelike sequences. Early viewers reportedly engaged with these illusions in collective corporeal ways, reacting to the movement on screen, moving their bodies in response to that movement – and thus also feeling themselves moved. In this way, early cinema foregrounded movement as an experience of being alive. Kamila Kuc states that

films such as *Boxing Cats* and Frank S. Armitage's 1900 *Skating in Central Park* (Eye Filmmuseum, 2012) were 'exercises in capturing life unawares' (Zylinska *et al.*, 2016), revealing as they did, to cite Tom Gunning (2006: 383), 'the magical possibilities of the cinema'. All of these films inscribe themselves in the framework of what Gunning (2006: 382) has called a 'cinema of attractions'. The unique power of early cinema (i.e. pre-1906 and predominantly pre-narrative) was, according to Gunning (2006: 381), a 'matter of *making images seen*'. Cinema was thus 'less ... a way of telling stories than ... a way of presenting a series of views to an audience' (Gunning, 2006: 382), 'supplying pleasure through an exciting spectacle' (Gunning, 2006: 384). Gunning's claim that movement was the whole point of cinema suggests that film's origins lay in unleashing a lifelike motion that was profoundly animist.

Read in this context, animism became a framework for capturing – and containing – not just the delightful horror of the new but also the sensations evoked in viewers by that novelty. As filmmaker and writer Jean Epstein (2012: 289) observed, 'one of the greatest powers of cinema is its animism. On screen, ... objects take on airs. Trees gesticulate. ... Every prop becomes a character'. We can thus see that, since its early days, cinema has been a medium that heightens our awareness of being alive. It not only immerses us in movement but also situates us within the flux of time, making us acutely conscious of duration. Inga Pollmann (2018: 19) makes the important point that the experience of early cinema 'was not purely that of a mechanical technology that confirmed a mechanistic approach to the world, but rather of a living medium that quickened and expanded the ... sense of what life might be'.

Bergson, Deleuze and the Mediated Perception of Life

Many 20th-century philosophers, from Martin Heidegger (1962) in *Being and Time* to Jean-Paul Sartre (1956) in *Being and Nothingness*, posited that human existence was defined by its forward motion towards its final destiny, a 'being-towards-death', to use Heidegger's term. Rather than merely affirm finitude, philosophy and art offer us ways of engaging with time as an unfolding continuum. Cinema in particular was seen by early 20th-century thinkers as enabling an encounter with life's flow, its rhythms and interruptions, its duration and persistence rather than just its demise, having emerged 'precisely at the time when biologists and philosophers were debating the nature of life and how life could be represented, and cultural critics were seeking to develop methodologies for adequately describing the

specificity of life in contrast to inanimate matter, especially machines' (Pollman, 2018: 18).

Henri Bergson, a philosopher of life writing at the turn of the 20th century, developed his thinking on movement, time and creative evolution in a way that was intimately, if somewhat uneasily, entangled with cinema. His concept of *élan vital* (vital impetus) positioned life as synonymous with movement, change and duration (Bergson, 1911). Despite these affinities with cinema's moving image, Bergson dismissed cinema as 'false' movement, an illusion that spliced together discrete still images to manufacture continuity. In his view, cinema replicated the limitations of human cognition, which tends to analyse life in artificial segments rather than apprehend it as a dynamic whole (Bergson, 1911). This kind of movement was ultimately illusory for him. Cinema, with its mechanical sequencing of images, could never truly capture life's becoming: it could only approximate it through an artificial assemblage.

It was not until Gilles Deleuze's *Cinema 1: The Movement-Image* (1986) and *Cinema 2: The Time-Image* (1989) that Bergson's ideas were fully integrated into film theory. To begin with, Deleuze argued that Bergson could not *see* cinema, at least not fully. His critique did not posit that Bergson had misunderstood cinema's mechanics, but that he had not grasped its radical potential: its ability to rethink movement, perception and time beyond human-centred frameworks. In response, Deleuze positioned it as a medium that revealed the very essence of time. He wrote: 'Cinema does not give us an image to which movement is added, it immediately gives us a movement-image' (Deleuze, 1986: 2). Claire Colebrook (2002: 29) has elaborated on this idea, arguing that, for Deleuze, cinema was a fundamental event of techno-modernity: 'Only with cinema can we think of a mode of "seeing" that is not attached to the human eye. Cinema, then, offers something like a "percept": a reception of data that is not located in the subject'. In this formulation, cinema unmoors perception from anthropocentric constraints. It offers a way of thinking that does not proceed through human sight alone but rather through machinic vision – i.e. through the lens of technical mediation. Pollman (2018: 39) argues further that 'films called on the spectator as a living, sensing being' while complicating 'earlier notions of life by providing spectators an opportunity to witness a technologically produced liveliness; that is, the experience of seeing life outside itself'.

What Does It Mean to Truly Experience a Medium?

If Deleuze's critique of Bergson invites us to reconsider what it means to truly *see* cinema while seeing oneself as a living subject, it also raises broader questions about the epistemology of media and the forms of perception they engender in different historical periods. If cinema, as Deleuze argued (and Colebrook after him), offered a perceptual shift beyond the human eye, then what do contemporary computational media, especially AI-driven visual systems, do to our modes of seeing the world? Moreover, is *seeing* even the most appropriate paradigm for engaging with AI-driven art installations on large screens? In an era when machine learning operates not through direct visualisation but through probabilistic modelling, inference and latent space interpolation, perhaps the visual epistemic framework of cinema no longer suffices. If Deleuze saw cinema as an event of modernity – interwoven as it was with electricity, urban expansion, capitalism, colonialism and industrial time – then AI-generated imagery must be understood within its own technological and political milieu. It is an event not so much of mechanically driven industrial modernity but of its computationally led post-industrial counterpart.

Just as Deleuze found in cinema a reconfiguration of time and perception, we must now consider how AI transforms the conditions of visibility, materiality and mediation in the age of advanced computation, when movement is no longer the result of mechanical animation but of statistical prediction and probabilistic synthesis. When machinic vision generates images without a prior referent, it produces not a record of lived experience but a speculative rendering of visual possibility. Cinema, as a historical medium, trained us to overlook its gaps, to accept the illusion of motion as seamless. GenAI, by contrast, operates through discontinuity, its artefacts often betraying the fractures of algorithmic interpolation, the probabilistic stitching together of synthetic forms. If cinema has historically been about hiding the cut, AI-generated images force us to confront the invisibility of the source, pointing to the latent space from which they emerge. In this sense, the question is not merely whether genAI extends or departs from cinematic traditions but how it reconfigures our very relationship to time, movement and being alive. If cinema once gave us the sensation of being carried forwards – an awareness of temporality as passage – AI-generated images prompt us to reconsider what it means to inhabit media when the referent is no longer traceable, when movement itself becomes a speculative construction.

In the post-Covid era of multiplatform streaming and multiple handheld screens, cinematic experience has become personalised and privatised, while remaining locked to ever-predictable (and algorithm-dependent) narrative structures (Frey, 2021; Gilbert, 2022). Hollywood cinema continues to move viewers, but it does so emotionally, affectively, through special effects and story-based genres such as romance or horror. GenAI seems to have inherited cinema's original biomachinic capacity, crafting enthralling experiences around the pure affect of motion. In AI-based installations, a collective bodily experience resurfaces, with audiences literally immersed in pixel oceans, which is reminiscent of early film spectators reeling from illusions on screen. Does that pivot automatically result in vapid spectacle, or can it generate moments of renewed aesthetic potency? My stance, coloured by earlier scepticism, is that we do need a critical perspective on what 'feeling alive' means in these immersive experiences. We need to question who is included in and excluded from such spaces, and to what extent 'being moved' relies on extractive infrastructures, or on public relations campaigning for Big Tech. Yet I also claim that those immersive spaces of AI-driven media art might open a horizon for re-engaging with life, time and movement, especially if we embrace a potential ethical orientation of the projects on offer.

The Techno-Flower as a Biomachine

Flowers serve as privileged media for exploring AI's capacity to evoke or simulate life.³ Their ephemeral bloom and hybrid sex, and the nature-cultural processes of cultivation and breeding involved in their coming into being, make them potent symbols of hybrid ecologies. In his essay 'The Work of Art in the Age of Mechanical Reproduction', Walter Benjamin (1968) evokes 'the highly auratic' figure of 'the Blue Flower', aka Novalis, this 'unattainable object of romantic quest, the incarnation of desire' (Hansen, 1987: 204), as a model for corporeal attunement that can only be felt through technological mediation. Sarah Cooper (2022) has proposed the concept the techno-flower in her discussion of an early British natural history film, F. Percy Smith's 1910 *The Birth of a Flower* (van Dijk, 2019), which features colour-tinted time-lapse footage of a variety of flowers seductively opening up to the viewer's gaze. For Cooper (2022: 2), 'it is not the filmic mediation of nature that is witnessed in *The Birth of a Flower* but the performative constitution of flowers in the land of technology'. Her examination of the history of the depiction of flowers on various surfaces, from prehistoric engravings through to nature films and digital simulations, suggests that 'what is at stake here is human entanglement with technology in the treatment of nature Flowers seduce people into propagating them [while] film plays [a role] in

fuelling desire for their continuing circulation’ (Cooper, 2022: 2). The reading of the cinematic medium as a life-enhancing technology is driven by on- and off-screen movement: of vegetal and human bodies, of viewers on the other side of the screen moving with the rhythm of the cinematic tape – which is itself in motion – and of the flowers visualising life processes through the application of the stop-motion technique, which shows them growing and opening up at speed.

The animist sensibility of flowers captured on cinematic screens has returned in many immersive genAI art works. I would now like to turn to three such projects which revolve around floral imagery: Refik Anadol’s large-scale data visualisations in *Living Archive: Large Nature Model*, Anna Ridler’s *Mosaic Virus* and Mat Collishaw’s *Alluvion* and *Heterosis*. The mediated techno-flower that makes an appearance in these works will be read here as a form of biomachine.

Refik Anadol’s large-scale installations envelop visitors to galleries, parks and stadia with AI-generated data rendered as pixel movement. Sprawled on the gallery floor at London’s Serpentine, undulating in front of his large vertical screen at MoMA (2025), or dancing around his installation organised by the Onassis Stegi and held in a park in Athens, audiences attune their bodies to the exuberant movement of what look like flowers, plants and corals unfolding on the screen, with pixels seemingly popping out to be touched. Mimicking early time-lapse videos of blossoming flowers and other forms of spectacular cinematic movement, Anadol’s fluid vegetation allows us to ‘translate its striving toward the light, its search for space, its stretching, wriggling and unfolding, into our bodies and connect these movements to those sensations produced by the movements of our own muscular and nervous tissues’ (Pollmann, 2018: 134). His *Living Encyclopedia* project visualises data from various rainforest sites (Dataland, 2025). The concept is visually mesmerising yet also somewhat ethically fraught. While viewers find themselves enthralled by the shimmering dance of digitised flowers and fungi, they must at some point reckon with the fact that resource demands – high-powered servers, energy consumption – underlie AI’s contribution to planetary exploitation. Anadol’s emphasis on ‘nature’s beauty and complexity’ (Dataland, 2025) ironically depends on industrial-scale computation that relies on non-renewable materials.

Would it be unfair to say that the language and logic behind his *Echoes of the Earth: Living Archive* project (shown at the Serpentine in 2024 and incorporated into the *Encyclopedia*) is akin to carbon offsetting used by Big Tech? Anadol explains: ‘The installation wraps the gallery walls in AI generated images inspired by data of flora, fungi and fauna

from over 16 rainforest locations globally, which was collected using technologies such as LiDAR and photogrammetry' (Serpentine, 2025). The work includes *Artificial Realities: Rainforest*, which marks 'the longest continuous generative AI visualisation on nature to date' (Serpentine, 2025), employing the Large Nature Model, the world's first open-source genAI model dedicated to nature, to offer its digital simulacra. Environmental concerns are not the only issue: Anadol's works are often dismissed by critics as mindless visual seduction, large-scale lava lamps or screensavers with anaesthetic properties.

Taking all these criticisms on board, I want to propose that Anadol's works can be seen to be performing something that goes beyond mere extractivist data kitsch. In the mobility of the experience unfolding between the pixel, the data set, the screen infrastructure, the wider environment and the viewing public, they enact a form of what I earlier called data animism, turning AI into a biomachine that pulsates with life. This concept can help us grasp the contradictory yearnings of the present: a desire for immersive wonder but also for reconnecting with the living world. Anadol's installations harness the age-old cinematic impulse to re-enchant the everyday, making visible the ungraspable scales of planetary life. This form of 'pixel kitsch' can perhaps challenge conventional aesthetic categories by revealing how thoroughly our sense of 'being moved' is enmeshed with computational processes today. In short, we might glean from his works hints of a technologically mediated animism that shapes the contemporary sensorium. At a time when love and sex have been gamified and datafied, Anadol's works raise the question as to whether we are even capable of experiencing feelings and sensations outside of the machine – and whether it still makes sense to retain such extra-machinic fantasies. Creating experiences of mediated nature through their lush floral arrangements, they remind us that flowers themselves are never 'just' natural: they are also outcomes of complex, and increasingly industrialised, processes of cultivation.

Anna Ridler's *Mosaic Virus* (2018–2019) offers an instructive example of this trend. The work consists of a collection of videos that embrace the buggy logic of the hybrid floral ecologies – but also of the economies within which they function. Adopting the working method of 'slow AI', the project involves AI-generated tulips, produced on the basis of the model Ridler created over a period of one year by training it on the 10,000 photos of tulips she had taken and labelled herself. The project's title references

the disease that causes the distinctive stripes, or flocking, in tulip petals. It is caused by aphids laying eggs in the bulbs meaning that a tulip could produce a pure white flower one

year, but a heavily striped one the next. This element of chance and rarity increased the desirability at the height of tulipmania and helped drive speculative buying and selling of the bulbs. (Ridler, 2019)

The aleatory insect-flower encounters resulted in the bug turning into a literal object of value: a floral glitch became responsible for a price spike, fuelling a speculative bubble around the nature-cultural artefact subject to the transformative vagaries of an insect's deposit. The fact that the lily mosaic virus (aka 'tulip-breaking virus') – i.e. the disease that caused the stripes, resulting in the overall weakening and eventual death of the flowers – was only discovered in the 1920s meant that the desire for the consequences of the then-unknown disease led to much mythmaking and trickery within both horticulture and the flower trade. The shape of the tulip emerging on the screen through multiple iterations of the generative adversarial network in Ridler's works is controlled by the price of Bitcoin, which acts as a virus for the floral unfoldings on the screen, and which is manifested in colour markings on the tulips' petals. With this, Ridler establishes a link between the present-day techno-hype around both AI and crypto and 17th-century tulipmania, when the price of a tulip bulb came close to that of an Amsterdam townhouse before it dropped to that of an onion. The work demonstrates how the flower, as both cultural symbol and biological entity, has long been implicated in capitalist and colonial agendas – and how AI now intensifies these associations.

Matt Collishaw (n.d.b) has developed a similar project called *Heterosis* (2023), where the public are invited to play with a combination of genetic algorithms and blockchain technology to cultivate their own animated digital flowers. Becoming agents of metamorphosis and speculation, participants are interpellated to reflect on the idea of collectors as breeders of value, as godlike creators of specimens and species. Expanding on the darker potentialities of computational florals, Collishaw's (n.d.a) *Alluvion* (2023) integrates insects and AI-generated blossoms in uncanny, Old Master-style paintings, referring to the morphological mimicking often seen in nature. Flowers are known to simulate the look of insects to attract other insects to encourage pollination. Yet the artist flips the flower-insect relation in his works. Challenging the 'cosmeticised' image of flowers as pretty, he is interested in foregrounding their 'predatory and aggressive' nature, going so far as to position flowers as 'competitive breeding machines', beautifully alluring yet, on closer look, also dangerous or even repulsive (Collishaw, 2023: 21). Playing with the concept and technique of mimicry, Collishaw explores unusual hybrids between fragments of genetic and computer code

activated in the production of natural and cultural artefacts, while foregrounding a darker message: the fact that ‘genetic modification can occur unfavourably due to our meddling presence on the planet’ and that practices such as ‘monocultures, industrial scale intensive agriculture and the destruction of hedgerows’ are having deleterious effects ‘on flowers and the insect population’ (Collishaw, 2023: 24). Read in this context, flowers serve as indices of the human-induced planetary glitch.

The Queer Life of Flowers

These AI-based floral artworks recall Teresa Castro’s (2019) notion of ‘the mediated plant’, linking them to a broader ‘plant turn’ across the humanities that emphasises plants’ intelligence, motion and hybrid modes of reproduction. Castro argues that the scientific *in-vivo* imaging of plant movement unsettles old assumptions about vegetative passivity. In *Botany of Empire*, Banu Subramaniam (2024) discusses how in the 1700s Swedish biologist Carl Linnaeus transposed onto plants ‘European colonial sexual norms based around heterosexual romance’, even though more than 85% of flowering plants are ‘hermaphrodite’ because ‘their flowers have male and female parts; and that’s not to mention all the “asexual” ways flowering plants can propagate such as through roots, stems, leaves and buds’ (Corbyn, 2024). This perhaps explains why flowers have been of interest to artists across centuries – including those artists who are working with AI. Belonging to both nature and culture, flowers are weird, hybrid, literally queer. In their ambiguous and buggy ontology, flowers open up an ecological horizon of possibility for those who do not yearn for a pre-technological paradise. This ambiguity has always been a constitutive part of the floral world, with bugs, both as insects and computer glitches, being responsible for a messy coexistence between organisms, species and kinds. It would not therefore be a step too far to suggest that flowers can be read as media: they are part of the ‘elemental’ mediatic tradition traced by John Durham Peters (2015: 4), whereby media are perceived ‘as environmental, as part of the habitat’. In many science publications, flowers are said to mediate the process of pollination, i.e. the entering of the sperm, contained within pollen, into the ovules. But flowers also activate processes of mediation between natural and digital ecologies: not just biological pollination but also the circulation of technologically shaped desires, illusions and capital flows. What emerges from such flamboyant collisions is an ecological horizon of possibility, inviting us to see flowers as media for various forms of cross-pollination in larger digital ecologies: bridging earthly, cultural and computational realms while establishing new material and conceptual connections.

Towards Ethical Data Animism

Digital flower ecologies teach us how to engage with modernity's critique of the medium and the technical and social apparatus without falling into the primitivism of animism. The current embrace of animistic thinking by many individuals and groups (artists, activists, pan-spiritual gatherings, online communities) can be seen as an attempt to engage with the weird, the unknown, the repressed and the liminal within the increasingly fractured world while recuperating some sense of power, agency and life from that sensation. The increased hollowing of the technoscientific paradigm embraced by Big Tech and aimed at the interests of the few has resulted in 'a freaky collision of accelerationism and psychedelic renaissance' in recent years, a phenomenon that writer and 'internet folklorist' Günseli Yalcinkaya (2025) has described as 'the internet's Age of Aquarius'. While Yalcinkaya understands this phenomenon in terms of a mass psychosis caused by the mania for capitalist profiteering driven by our supranational digital overlords, there is a rationality to the neo-animist beliefs and behaviours, even though, on the surface, they might look like escapism and madness. At a time when the certainties of our socio-economic strategic organisation as well as our trusted modes of knowledge production and reception have been vaporised by the key political and technocratic players, digital data animism, as manifested in phenomena such as the cyberwitches of TikTok, AI Tarot (e.g. Tarotoo, 2025) or semi-mystical 'pixel dust art', becomes an attempt on the part of increasingly vulnerable humans to establish an alternative space where they can come out on the side of life. Such phenomena are a way of creating glitchy realms of vibrant experience that refuse to be dominated by the seemingly inevitable doom logic of the mainstream narrative. There is therefore 'a method to this cyber-gnostic madness', to borrow a phrase from Eugene Thacker's (2015: 15) foreword to a reissue of Eric Davis's classic *TechGnosis: Myth, Magic and Mysticism in the Age of Information*. The exhaustive material demands of the current moment result in a situation whereby 'people inhabiting all frequencies of the socioeconomic spectrum are intentionally reaching for some of the oldest navigational tools known to humankind: sacred ritual and metaphysical speculation, spiritual regimen and natural spell' (Davis, 2015: 19), rediscovering mystical impulses at the heart of our advanced technology. In this context data animism (or techno-animism, to use Davis's term) can 'be seen as a psychologically appropriate and imaginatively pragmatic response to the peculiar qualities of a deeply mediated world' (Davis, 2015: 259). It can also be developed into an ethical stance.

Triangulating the ‘flower-pixel-vector’ dynamic, I have attempted to show its possible workings by tracing historical parallels between the rendition of nature, in all its transformative abundance, by the early 20th-century naturalist films, showing beautifully uncanny flowers in movement, opening and closing, and the neo-animist biomachines of genAI. Not all AI installations of this kind are intellectually or ethically compelling, of course: some are just forms of vapid spectacle or corporate branding. Yet, collectively, they reveal an appetite on the part of artists and their audiences for new forms of mediated experience that recapitulate the old cinematic enchantment with modern digital sensations, while pointing towards something outside the viewing/sensing subject. Simultaneously, the justifiable critiques around planetary exhaustion – data servers draining resources, exploitative labour behind data set labelling – demonstrate that genAI art must do more than create an individual aesthetic experience of ‘pixel flow’ in which viewers can dissolve all their daily woes. Just as Walter Benjamin (1968) saw in early cinema potential for estrangement from, and – more importantly – agitation about, the overarching logic of modern industrial capitalism, we can read genAI art as creating a new mode of collective experience that can allow us to feel, think and do things together within our shared techno-social set-up, beyond the overarching logic of AI hype driven by Big Tech. The deployment of AI in art therefore opens up another path of experience and encounter, allowing the audiences to take some steps towards developing a stance that fosters responsibility for and across our digital ecologies. To suggest this is not to clamour for art as a ‘disinterested’ realm of experience subject to different rules, but rather to recognise the potentiality of alternative modes of seeing and sensing being born from within the techno-material set-up of the infrastructures that power AI art – and that we are all already entangled with today. This approach resists the binary framing of the AI discourse whereby AI is positioned as either an emancipatory force promising progress and innovation or – more frequently in humanities accounts – a dystopian apparatus exacerbating inequality, surveillance and environmental devastation.⁴ Both positions are problematic because they reinforce a static, externalised view of AI, rather than admit the possibility that we are already situated in what artist Helena Sarin has called ‘the AI loop’ (Ploin *et al.*, 2022: 13), a state of events that demands different critical positions and tools. Engagement with AI works that acknowledge our material entanglements with the AI loop can open up new theoretical and activist pathways that will reveal the tension between ‘the pixel flow’ and ‘the sweat flow’, with aesthetics extending a bridge to ethics. This is by no means an automatic passage; it is just an emergence of the possibility to see, sense and, eventually, understand otherwise – one that will most likely only be taken by very few.⁵

Importantly, as pointed out by Emmanuel Levinas – a philosopher whose thinking about ethics does not rest on any prior fixed values or norms but entails a constant negotiation over them – ethics must not be mistaken for a serene and peaceful communion of all beings. Rather, it is a dynamic situation of responsibility exerted on me by the Other's presence. The Other is always before me, spatially and temporally, disrupting my autonomy and demanding a response – which may also take the form of rejection, neglect or annihilation. Thus, for Levinas, ethics is something inescapable, arising in every encounter with alterity. Ethical data animism should not therefore be reduced to an attempt to establish seamless harmony between humans and non-humans in all their digital entanglements. It must instead begin with the insight that any community, and thus any negotiation over values or data flows, is always already haunted by subsumption and violence. I often desire proximity and knowledge, but, for Levinas (1969: 26), no matter how good my intentions, 'to know amounts to grasping being out of nothing or reducing it to nothing, removing it from its alterity'. He can thus help us develop an ethics that seeks to reckon with the Other's difference by embracing 'good violence' (Levinas, 1998: 43). This gesture acknowledges potential antagonism and conflict on the level of need, desire and survivability while calling for the minimisation of harm to humans and non-humans alike. Levinas's philosophy of responsibility for the alterity of the Other, where the Other is implicitly human, therefore needs to be augmented by a wider sense of responsibility for life in all its tensions and fractures.

Many contemporary thinkers of alterity, from Gilles Deleuze through to Donna Haraway and Rosi Braidotti, have tracked such ethical responses, but I would like to bring back Bergson's philosophy of duration, discussed earlier, as an ethical supplement to Levinas's thought. For Bergson (1911), life itself as a ceaseless and creative unfolding is the source of alterity. His concept of multiplicity, which navigates between heterogeneity and continuity, difference and sameness, movement and stasis, can help us see that life cannot be reduced to discrete, representable objects. Instead, it is instantiated within a flow, be it of bodies or pixels, resisting capture while making others see and sense liveness and thus, potentially, feel alive. By putting Levinas and Bergson in productive tension, ethical data animism can become a method for navigating the strictures and fractures of current digital ecologies. Seen in this context, animist gestures within AI can be read as perpetual responsiveness to unpredictable emergence, but also as taking responsibility, on the part of the humans experiencing and embracing such responsiveness, to the disruptions this emergence introduces.

To sum up, ethical data animism, arising as it does from an aesthetic experience of immersive AI-driven data art that sensibilises its audiences to alternative sensations and logics without offering any *a priori* ethical guarantees, can be understood as:

1. A relationship of asymmetrical responsibility, rooted in Levinas's notion of infinite responsibility to difference, yet attentive to the ways in which human and non-human others (flowers, corals, bugs, data networks) resist appropriation and issue demands that counter or even contradict ours.
2. A mode of temporal sensitivity, drawing on Bergson's concept of duration, that treats data flows within AI systems as elements of an evolving multiplicity, moving through us and making (and unmaking) us, rather than as discrete, containable entities.
3. A method for negotiating tensions between competing demands of different 'others' that avoids projecting fantasies of a seamless organicist community while working towards minimising fractures and forms of violence that will inevitably ensue, with a view to coming out on the side of life, even against all odds.

The focus of such an ethical stance, then, shifts from enquiring whether AI can make us feel alive to seeking forms of engagement within our digital ecologies that affirm our human responsibility for their constitutive elements – and thus for our cohabitability and shared futures. This stance constitutes a minimal ethical imperative: it is not a technocratic promise of the resolution of all biases and conflicts (the way 'AI ethics' is typically positioned), nor is it just an ethics of care (because 'care' does not carry enough of a reflection on the violence involved in any well-meaning efforts to distribute it). Rather, it is a pointer towards the ongoing arduous work of living with difference, precarity and struggle. It is a way of 'staying with the trouble' (Haraway, 2016) rather than denying or foreclosing it. To articulate it in terms of this article, the uncanny liveness of flowers, pixels and bugs invites us to inhabit the fissures and fractures of techno-modernity while taking on the charge of ethical indeterminacy.

Such indeterminacy is more than just a neutral situation of facing multiple equivalent options. It is intrinsically linked with a need to respond to the consequences of what Mbembe (2019: 66) has termed 'necropower'. Necropower, he argues, creates 'death-worlds' in which certain populations are subjected to conditions that render them 'the living dead' (Mbembe 2019: 92). Bringing this insight to

data animism makes visible many of the ways in which digital and AI infrastructures, while simulating life-ness, participate in the stratification of life: privileging some forms of vitality (market and investment growth, death deferral research primarily benefitting the ultra-rich) while relegating others to invisibility or slow erasure (precarious communities in regions with rising sea levels, natural habitats that cannot be easily turned into resources). Data phantoms may delight in their uncanny lifelike qualities, but they are built on architectures that enact exclusions, invisibilisations and necropolitical divisions. This perspective complicates the claim that AI art simply extends lifeness. But it does have the capacity to alert us to how life is being constrained and contained by the operations of techno-capital. Emerging from within the AI set-up of which we are all part, ethical data animism must refuse to reproduce necropolitical logics, foregrounding instead the need to embrace what Mbembe (2019: 40) calls ‘a politics that no longer necessarily rests upon difference or alterity but instead on a certain idea of the kindred and the in-common’. In this sense, to feel alive through the animated pixels and vectors of AI art is also to confront the unequal distributions of liveability and survivability they point to, while seeking to minimise harm within the conditions of fracture driven by AI technology.

If AI is a relational technology of life, and if living ecologies are thoroughly entangled, we need to account for how non-human life – be it in the form of flowers, insects or computer bugs – belongs in this story. Collishaw’s monstrous flower-insect hybrids, or the phantom corals swirling in Anadol’s pixel ocean, suggest new forms of being that trouble anthropocentric hierarchies. So, ‘feeling alive’ might become a matter of rechannelling animist impulses towards more expansive ‘in-common’ networks of reciprocity, exceeding the boundaries not just of privileged groups of humans but also of human identity as such, while acknowledging the bugs in the system that generate surprising or disruptive forms of relationality. The essential issue becomes how to guard the planet with all its human and non-human inhabitants, while remaining aware of the inevitable conflicts and ruptures unfolding in the process. In short, an ethical data animism would transcend the anthropocentric vantage from which we ask whether this experience makes *us* feel more alive. Instead, it might prompt the question of whether the mobile pixels of immersive AI art can serve as prickly reminders of the complexities of non-human intelligence – and, with this, of the precariousness of bees, insects and other life forms and their ecologies. If the emergent AI phantoms are indeed ‘lifelike’, we carry accountability for recognising them as signposts of the living world they so freely sample – and for the ecologies they despoil.

Les Fleurs du métal: A Performative Endnote



Figure 1. Joanna Zylinska, stills from, and QR code for, the video *Les Fleurs du métal*, 2024. Watch the video: <https://vimeo.com/991531048/bbd8ba4ed2>

By way of concluding this article, I would like to present my own experiment in engaging with techno-flower aesthetics: *Les Fleurs du métal* ('Metal Flowers'), a remake of Charles Baudelaire's *Fleurs du mal* ('Flowers of Evil'), co-created with various AI models (fig. 1; Zylinska, 2024c). Baudelaire's original text stands as a cornerstone of European modernity, being known for its Symbolist reworking of sin, eroticism and mortality. My piece retools Baudelaire's discursive florals into an androgynous, triphop-style music video. In doing so, it seeks a passageway towards ethical data animism.

In the buggy AI aesthetics of text-to-image models, the image of 'the flower' itself undergoes a metamorphosis towards a temporary stabilisation in the seemingly infinite combinatorial possibilities of the latent space. Just as cinema's liveness effect relies on the cut, AI-driven image generation involves navigating through a simplified mathematical space where images are condensed in size to allow for their rapid processing. In genAI, image creation is essentially a calculation of mathematical probabilities. Numerical values mapped onto a coordinate grid are compared, with the algorithm selecting the 'final' image from a range of similar patterns. This final image entails the averaging of possibilities premised on the extraction of what are considered to be the most salient features of an object deemed 'flower', thus hinting at its supposed underlying 'floweriness'. To the

human eye the image generation process is reminiscent of a fluid pixel dance. While AI models often get criticised for their inaccuracy, Benedikte Wallace *et al.* (2024: 125) argue that ‘deviation from realism’ in AI-driven outputs can serve as ‘a creative catalyst’ for artists. A glitch or bug occurring within a genAI model can be generative for the human-machine ensemble, stimulating ‘transformation’, pattern-breaking and ‘new ways of moving’ (Wallace *et al.*, 2024: 127).

Part of the impetus for the project lay in an attempt to bridge ‘high art’ with ‘pop culture’, acknowledging the algorithmic scaffolding of much of popular music production prior to the widespread arrival of genAI (Seabrook, 2015). From the formulaic nature of chart hits to the data-driven behaviour of major music streaming platforms (Frey, 2021), pop culture has always entailed complex algorithmic data-driven processes. By recasting the Symbolist flower in an electronic groove, *Les Fleurs du métal* seeks a new kind of data animism, beyond the masterful and overwhelming narrative of famous modernist texts from James Joyce’s *Ulysses* through to T. S. Eliot’s *The Waste Land*. The piece plays *for*, but also *with*, its audience, replaying modernity’s concerns in a different key.

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Endnotes

1. The term has been proposed by Amanda Lagerkvist and Jacek Smolicki at their 2025 conference at Färgfabriken in Stockholm and in their edited collection (Lagerkvist and Smolicki, 2026). It posits that 'technology has always been with us and within us. It has shaped our relationships with each other and with the world around us since humanity's beginning' (Färgfabriken, n.d.).

2. If AI is an agent of transformation, it is also a system that is itself prone to rupture. One conceptual figure that illuminates this dynamic between continuity and breakdown is the 'bug' – a term that simultaneously evokes the biological (insects, parasites, organic life) and the machinic (errors, glitches, unexpected network failures). Both metaphor and material occurrence, the bug reveals the layered complexities of technological mediation. While US engineers have been referring to small flaws in machines as 'bugs' for over 100 years, the use of this term in computer science became widespread after an accident in a Harvard computer lab in 1947, when a moth became trapped in a component relay, with said incident – and the actual specimen – entered in the lab's logbook (National Museum of American History, n.d.). Beyond its anecdotal significance, the bug

signals the persistent instability of technological systems. This instability becomes recognised as an intrinsic feature of computation itself (Chun, 2011).

3. Several sections of this article were originally included in Zylinska (2025a). A few of the ideas about animism and AI art presented in this article first appeared in a catalogue essay (Zylinska, 2025b).

4. Within the latter framework, Dan McQuillan (2022) challenges AI's structural alignment with authoritarianism, Kate Crawford (2021) exposes its dependence on planetary extractivism, Frank Pasquale (2020) defends human expertise against AI, and Matteo Pasquinelli (2023) unmasks AI's role in the automation of cognitive and affective labour.

5. In my previous works (predominantly Zylinska, 2020), I offered an unsparing critique of the early forms of AI art – and of the dominant sociopolitical narratives that shaped it. I have since acknowledged the changed context for engaging with AI, here represented by the figure of the 'AI loop' (Zylinska 2024a). I have also attempted to develop a mode of engagement that goes beyond a critique whereby AI is positioned as an externality, and that seeks potential, even if minor, possibilities for developing alternative ways of being and doing with technology from within the techno-social system we find ourselves in.

Bio-AI: The Aesthetics and Ethics of Data Animism

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