AI Art and Its Limitations: Narrow Intelligence and Visual Indulgence

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Refik Anadol's *Unsupervised* from 2023 at MoMA is a theatrical display of data and aesthetics, showcasing a machine-learning spectacle that sifts through the museum's digital archives. Art critic Ben Davis describes the work as an "extremely intelligent lava lamp," which captures the hypnotic and tech-savvy nature of the work.[1] Facing MoMA's lobby, the installation unfurls with patterns shifting like a giant screensaver in a mesmerizing display of visuals reminiscent of the current wave of generative art. The technical sophistication of the work is undeniable, offering a limitless supply of generated images that captivate yet quickly dissipate, leaving no lasting impression. Much like the wax in a lava lamp, this cyclical nature of fleeting fascination lends Davis's analogy its sharp accuracy.

Davis' review, "*An Extremely Intelligent Lava Lamp: Refik Anadol's A.I. Art Extravaganza at MoMA Is Fun, Just Don't Think About It Too Hard*," recounts his experience at the exhibit, spending hours with the work in an attempt to understand how Anadol's *Unsupervised* might fulfill MoMA's lofty claim that this installation is reimagining art history. He notes a solitary moment where the installation briefly generates a vibrant cloud morphing and swirling where its colors are a clear homage to the work in the MoMA. This fleeting burst of chromatic brilliance is just a temporary blip in an otherwise monotonous display of digital amalgamations that reconfigure the visuals of the artifacts within MoMA's digital archive. His efforts to figure out how the procession of computer-generated images executes this proves fruitless. Each visual fails to forge a lasting connection or provide some context to explain why this work is on display at MoMA. Davis's overall critique of this installation is that it is a spectacle rich in form yet devoid of depth and a theoretical framework that anchors art in an intelligible context.

In *Art in the After-Culture Capitalist Crisis & Cultural Strategy from 2022*, Ben Davis discusses a similar experience when interacting with the Metropolitan Museum of Art's Gen Studio, an AI-driven app created in the 2019 hackathon hosted by "The Met x Microsoft x MIT" initiative.[2] This app combines six disparate images from the museum's archives based on user preferences and concocts new digital creations based solely on the visual qualities of the images selected. This process indicates a pivotal shift in value where cultural artifacts are reduced to mere aesthetics, stripping them of the rich context and history that warranted the works' original inclusion in the collection.[3] Anadol's *Unsupervised* parallels Gen Studio's approach as it leans heavily on the machine's capabilities, providing viewers with surface-level visual entertainment that reduces the historical context and symbol-making practices to a series of "random visual tics" rather than reimagining the history of modern art like the MoMA exhibition text claims.

Anadol says that his art "dreams" or "hallucinates."[4] Two terms that anthropomorphize his body of work and attempt to convey sentience to his machines. Anadol's tendency to anthropomorphize may explain the supplementary screen near the exhibition text that shows the AI's operational metrics, unnecessarily visualizing this along with the environmental data of the gallery that has to stay relatively consistent due to the conservation needs of the institution.

Anadol's fascination with science fiction is evident as he openly cites films like *Blade Runner* to inspire his practice. Anadol appears only to be captivated by futuristic aesthetics and prioritizes this allure at the expense of the rich socio-cultural discourse that inspirations, like *Blade Runner*, inherently provoke. It was not until 2021 that he acknowledged the superficiality of his interpretation.[5] However, Anadol's 2021 concession does little to bridge the theoretical gaps still evident in his current work. *Unsupervised* stands as a testament to this, where the formal indulgence of the work is divorced from the profound art historical

investigation that MoMA's exhibition text suggests. Beyond this apparent disconnect, the installation neglects to probe the deeper ramifications of AI on societal frameworks, remaining content within the bounds of visual fascination.

Davis is not alone in his negative criticism of this work. Art critic Jerry Saltz, though less analytical, echoes Davis' "lava lamp" descriptor, suggesting that the work is not "intelligent" as Davis suggested, but that the work is a "glorified lava lamp" in his review, "MoMA's *Glorified Lava Lamp Refik Anadol's Unsupervised is a crowd-pleasing, like-generating Mediocrity,"* written a month later.[6] Saltz, a prominent voice, particularly on social media, leans towards emotional interpretations, stopping short of calling for any meaningful change. In the past, he viewed artists working with AI programs skeptically, arguing nothing much more substantive than that the works made with these technologies are "unoriginal."[7]

Davis' review offers a more nuanced analysis, highlighting art's current trend toward commercialization. Anadol's recent installation is another way to prove how capitalistic forces alienate viewers in cultural contexts, which is the theme of his book. The shared "lava lamp" analogy underscores the work's hypnotic yet vacant nature across leading contemporary criticism.

Unsupervised is considered the grand introduction of this new form of AI technology entering the museum circuit, with Anadol argued as the poster child for this contemporary style of generative-driven art. In his review, Saltz repeats many of Davis's points but critiques the derivative nature of this installation by citing Zombie Formalism. However, the recent procurement of Anadol's installation implies much more than a derivative art-making practice. The MoMA's backing of such AI endeavors hints at a broader shift in cultural power dynamics, seemingly veering towards tech glorification.[8]

Anadol's program in *Unsupervised* is a Generative Adversarial Network (GAN), an AI architecture Ian Goodfellow and his team initially engineered in 2014 for unsupervised learning, entered the spotlight.[9] This AI model consists of two intertwined networks. The first, the Generator, churns out data, taking random noise as its initial input. This "noise" is a spectrum of random values, infusing variability into the generation process. The second is the Discriminator, which discerns between genuine and Generator-crafted fake data samples. These networks engage in a game of deception and detection where the Generator attempts to make its fakes indiscernible. At the same time, the Discriminator improves its skill in detecting the increasingly convincing fake data. This process leads to either a deadlock, which leads to the process repeating or reaching a harmonious balance, generating an output. GANs can craft synthetic data nearly identical to the initial input by pitting these two networks in opposition.[10] It is particularly adept in crafting images and styles through augmenting data, earning its place in the art world when the Obvious Collective's *Portrait of Edmond de Belamy* fetched a staggering $432,500 at auction—43 times its estimate in 2018. Director of the film and media studies program at Washington University in St. Louis and writing contributor at the Atlantic, Ian Bogost, termed this phenomenon the "Art AI gold rush," underscoring the profound integration of GANs into artistic endeavors. This work stands as a demarcation point in the field of GAN-generated art, where it is the first market validation of this technology in the mainstream contemporary art market. The technical underpinnings of this artwork come from Robbie Barrat, who integrated a GAN algorithm with a program designed to meld the visual styles of numerous sample artworks to produce new visual works. The Obvious Collective used Barrat's code posted on the open-source sharing site GitHub and processed it through a vast database of over 12,000 portraits.[11] A piece reminiscent of Renaissance portraiture emerged with the distorted flair echoing Francis

Bacon. The work hung in a grandiose golden frame and was signed with the shorthand code that produced the work.

In 2019, Ahmed Eglammal's AICAN (Artificial Intelligence Creative Adversarial Network) program expanded upon the fuzzy, painterly, featureless conservative style of The Portrait of Edmond de Belamy to produce *Faceless Portraits*. This series of paintings depicts similar hazy angular faces on top of vibrant plumes peppered with jagged lines to suggest fabric.

Eglammal explains the inner workings of AICAN in *Art, Creativity, and the Potential of Artificial Intelligence*, where he modeled AICAN on Colin Martindale's *Theory of Aesthetic Evolution*, which explains the evolution of art and creativity over time, focusing on the progressive increase in novelty, complexity, and deviation from established norms in artistic expression; it provides a framework for understanding how and why artistic styles change and evolve, rooted in psychological and cognitive processes. Modeling AICAN's training data in this theoretical framework allows the program to generate outputs that have synthesized the visual elements from diverse art styles and historical periods.[12] The foundation of AICAN, like many of these GAN-based artworks, is an attempt to fabricate an 'artfulness' into the work itself justified through a theoretical framework.

In the discourse surrounding AI-generated art, the crux of the argument often rests on a malleable concept of creativity, as exemplified in Mingyoung Cheng's essay *The Creativity of Artificial Intelligence in Art*. Here, Cheng compiles several definitions of creativity across epochs and disciplines, juxtaposing them against digital AI endeavors.[13] However, when it comes to the likes of AICAN, there is an inherent discord. Martindale's theory, tailored to the human artist's spark of innovation against a rich tapestry of art history and discourse, seems

misappropriate when applied to AI artistic applications, which lack a cultural background knowledge to draw from.

Cheng's arguments, though intriguing, stumble over AI's intrinsic lack of context; these systems, such as AICAN, are bound strictly by the visual qualities of the artifacts used in the training data. They reach for novelty, yet they are programmed only to regurgitate the aesthetics they have been fed, incapable of true innovation in the human sense. AICAN, alongside *Unsupervised* and Gen Studio, produces artworks with a veneer of innovation through its technological sophistication, but it lacks authentic intent, discourse, and depth.

AI art practices using GANs are primarily engaged in producing abstract visuals. However, in their programmed fixation on visuals, the crucial aspect of abstraction, which is the associated narratives and criticism of abstract art, is overlooked in their design.

In his chapter "AI Aesthetics and Capitalism," Davis cites Darby English, who insists that the essence of abstraction is inextricably linked to its discourse. The works become meaningless imagery if stripped of their attached narratives and critical context, favoring only the visuals.[14] These AI creations discard the narratives that make abstraction significant in art due to the lack of context in the training data, undercutting the profound dialogues that give abstract art its market valuation, context, and resonance.

The context deficit in the datasets fueling AI art production impoverishes its outputs where the homogenization of incomplete data inputs mirrors—and risks entrenching—the prevailing visual conventions that drive the engines of AI art production. While tinged with novelty, the resulting creations echo what has been rather than what could be.[15] As Davis notes, this trend threatens to erode the human facets of creativity and the time-honored traditions of art intertwined with community, heritage, and identity.[16]

The prevalent and commercialized uniformity in style diminishes the core values that imbue art with meaning, and the works produced may resonate less with an audience seeking connection. Elgammal's Artrendex strides towards this, where AICAN's dataset can predict and chase visual trends for profit, inadvertently distilling the complexity of art history into mere data points.[17] This commodification of art into predictable patterns poses a stark departure from the essence of human creativity that has long defined our collective artistic heritage.

Instead of harnessing these intelligent tools as springboards for expansive innovation in creative endeavors, GAN-derived artwork remains, as described by artist and scholar Dejan Grba in *Deep Else: A Critical Framework for AI Art*, as mere "tools for processual mimicry."[18] Their potential is curtailed, given their lack of autonomy in selecting training datasets or shaping the statistical underpinnings of the space between input vectors that generate new data points known as the "latent space."[19] Due to this, there is a recurring theme where many of these models are employed monotonously, routinely producing similar outcomes.[20] This is evident in Mike Tyka's *Portraits of Imaginary People*, which are photo-realistic images with a painterly style reminiscent of Western oil painting. Tyka fed thousands of images of people from Flickr into a GAN system.[21] Mario Klingemann's *Neural Glitch* uses a similar method where a plethora of images from diverse open-source databases morph through a GAN process, evolving from one 'conjured' face to the next. There is a discernible trend in these GAN-based projects where there is an over-reliance on the glitchy aesthetic, where software errors become the predominant artistic layer.[22] Klingemann asserts that these warped faces, spontaneously crafted by the software's "imagination," possess no recognizable features. However, they undeniably mirror aspects of white portrait painting. In a subsequent venture, *Memories of Passersby I*, he offers a computer encased in a wooden shell, termed a "brain."[23] This entity simultaneously displays

evolving male and female faces, all birthed from a GAN system fed thousands of portraits from the Western Art canon.[24]

A striking uniformity in style and content courses through these projects, echoing surrealism, kitsch, and an overt disregard for context. Much like Anadol, Klingemann's artistry endeavors to captivate audiences with its ostensibly erratic portrayal of humanity through the visuals within cultural artifacts. However, these artists appear more engrossed in aesthetic exploration than addressing pressing sociopolitical questions. An obvious example is the portrayal of only white faces in Klingemann's projections, which raises inquiries about digital representation and the forces shaping the canonical artworks these algorithms ingest. This issue of bias and underrepresentation is linked inextricably to "The Picasso Problem" in computer vision, which refers to the challenge algorithms face in understanding or reconstructing images not aligned with conventional perspectives or orientations in their training data.[25] Images that confuse computer vision algorithms because they do not conform to standard or expected perspectives contribute to the style of Klingemann's works and pose real issues in surveillance and categorization, as explored in Joy Buolamwini's spoken word piece in "Ai, Ain't I A Woman."[26] Additionally, Anadol's installation at MOMA, meant to reinterpret MOMA's vast data associated with the collection to bring about new insights, falls victim to an issue similar to Elgammal's AICAN; both projects manage to distill art history into a set of patterns and discard the narratives, discourse, theory, and criticism that define the art historical canon.

This evident oversight underscores the indispensable role of the human artist piloting these machines. When interfacing with such advanced tech, the artist's ability for reflection and contemplation seems even more paramount. Regrettably, many in this domain camouflage their lack of awareness behind intricate methods, lavish displays, and visual overload. In *AI Art,*

Joanna Zylin'ska investigates this issue, arguing that many AI artists work with large tech companies, many of whom offer residencies and sponsor showcases for artists leveraging their tools. However, this alliance often sees artists trading their autonomy and becoming brand ambassadors. Zylin'ska critiques this trend, pinpointing a tilt towards surface-level consumerist leanings over profound discourse, which she dubs this type of art as "platform art."[27] The intricate, perpetually evolving nature of digital tools requires the support of tech companies when executing large exhibitions, which emphasizes the shift towards programming, overshadowing values traditionally involved with art practices.28

Today, AI artists are in perpetual compromise where tech companies like Google and OpenAI, which support AI art projects through programs and facilities, allow these artists to gain access to cutting-edge tools and resources. However, through this, they face pressure to tailor their work to fit the interests and agendas of these corporations. This compromise often means sacrificing creative independence in exchange for learning how to use these advanced digital technologies. This dynamic highlights a recurring theme in traditional art forms, where economic and political influences can sway artistic expression. AI artists conform to the demands for exclusivity and marketability, sometimes at the expense of their original artistic vision and independence.[29]

Grba contends that today's AI art installations, for all their high-tech gloss, generally miss the mark on political and critical substance. Anadol's *Unsupervised*, along with his earlier *Quantum Memories* and *Machine Hallucination*, are prime examples of installations that engage viewers on a sensory level, immersing viewers in a spectacle of light and color generated by machine learning algorithms. However, they seldom prompt the viewer to look beyond their visual grandeur. For example, *Machine Hallucination-NYC* exhibited at Artechouse in 2019, uses

images from cities to create abstract visuals that are then projected onto large screens. The installation attempts to immerse viewers in an artificial perception of their environment, but it does not address the underlying issues, such as surveillance or the environmental impact of technology. Additionally, "Quantum Memories" from 2020 processes an enormous dataset of images to create an abstract display without discussing the broader implications of quantum computing on society. These works foster a passive consumption culture, offering visual treats that skate on the surface but delving into deeper discussions about the intersection of technology, society, and ethics. They are "spectacular," not in grandeur but in the Debordian sense—dazzling viewers with the illusion of innovation while cloaking the capitalist drives and political entanglements behind the tech at play.[30]

Interestingly, many artists in this space, even those not under the patronage of large tech companies like Anadol and Klingemann, have become enamored by this tech allure. Grba observes a pattern where artists attempt to intertwine AI with conventional mediums. This strategy makes sense as this technology, already integrated with societal structures, allows artists to stage a conversation over more traditional art forms and platforms. While this may be commercially rewarding, this merger tends to distort the potential critical depths that AI is open to, such as its inherent complexities, which include a minefield of epistemic ambiguities, conceptual hurdles, clashing paradigms, discursive dilemmas, and the many ethical and socio-political quandaries inherent in AI science and its affiliated industries.[31]

Grba's critique, is similar to that of Davis's analysis of *Unsupervised*, *where* projects like *The Next Rembrandt* indicate a troubling trend where deep learning is employed not to deepen our cultural discourse but to distill cultural masterpieces into marketable imitations.[32] While remarkable, these feats of technology often lead to a sanitized dialogue, prioritizing the

spectacle over substance and the imperative for artworks to grapple with the social and political realities in which they are rooted.

Grba's critique extends to Trevor Paglen's work, known for the critical lens he brings to AI's biases and power dynamics, but he notes a tendency to aestheticize these systems. Paglen's *ImageNet Roulette*, created with Kate Crawford, aims to lay bare the biases in AI classification. However, Grba suggests it offers a cursory illustration rather than a deep critique. It does not achieve the revelatory impact of works like Curry and Gradecki's *Crowd-Sourced Intelligence Agency (CSIA)* from 2015, which immerses users in the workings of surveillance tools, providing an interactive platform for understanding data surveillance through active engagement.

ImageNet Roulette allows users to upload photos and receive AI-assigned labels, revealing the absurdity of AI biases. However, the installation stops there; it does not explore the mechanics of these biases or how they are constructed through data training, selection, or the influence of human annotators. It shows the outcomes without unpacking the processes, leaving a gap in the user's understanding of AI's complexities and ethical implications. In contrast, *CSIA* involves users in a simulated surveillance operation, encouraging them to analyze Twitter feeds through AI tools. It highlights privacy issues and includes educational components that foster critical thinking about the ethical use of AI and its potential biases. The more hands-on understanding of data surveillance practices deepens user engagement with the societal impacts of AI and data analysis.[33]

Additionally, when *ImageNet Roulette* is compared to Taryn Simon and Aaron Schwartz's *Image Atlas* from 2012, which visualizes how different cultures across the globe depict the same search terms, Paglen and Crawford's critique seems less incisive. *Image*

Atlas confronts users with cultural disparities and the subjectivity of information, offering a more nuanced exploration of global digital communication. *ImageNet Roulette,* which focuses on a general societal critique, appears diluted, lacking the straightforwardness and clarity that Simon and Schwartz deliver with their stark visuals and straightforward narrative.[34]
Paglen's work, while critically intended, might be overshadowed by its visual appeal, potentially missing the opportunity for a profound interrogation of technology. Grba's observations resonate with Davis's perspective that incorporating machine learning in art for its market appeal can overshadow critical engagement with the underlying technology.

Regardless, it is evident that AI art must navigate the art market's demands for uniqueness, marketability, and ownership.[35] It is worth noting that every era has its technological novelties. Many new media projects burgeoned with the inception of the internet and operated as it swiftly integrated into societal structures. The potency and seduction of AI, paired with engineering and over-production, often lean towards aesthetic indulgence, even when attempted to be made with a critical lens. This corrosive allure stems from intellectual complacency and the influence of big tech on these artistic endeavors. However, the core concern is the technology itself, a forward-leaning neural processor where images cannot be recreated once produced. This unique unrepeatability, often touted as the work's hallmark, inadvertently stifles the introspective depth many of these artworks require.

GANs have given rise to many works that, while visually mesmerizing, lack substantive essence. Grba points out a concerning trend towards an infatuation with mere technological spectacle, fostering a breed of art estranged from intellectual rigor. While Davis agrees and builds upon this observation, he asserts that this drift towards a spectacle of technology disengages art from its associated narratives and criticism that provide art with its theoretical

underpinnings. This shift heralds an era of aesthetic adequacy where the intrusion of market forces into the cultural sphere renders art simultaneously banal and potentially hyper-tailored as this technology begins to be used and incorporated into everyday apps. We seem to be on the brink of an age that Davis refers to as a time with a limitless amount of "good enough" visual content that is easily digestible, ubiquitous, and inescapable.[36]

Wei Liu and Feng Tao's essay *Art Definition and Accelerated Experience: Temporal Dimension of AI Art* explains a temporal compression in art-based AI technologies that exasperates this potential issue of highly consumable, novel material. They argue that with deeper tech integration, the artistic process quickens, truncating art's experiential breadth.[37] Davis observed this issue in his review of Anadol's *Unsupervised*, which appears already optimized for fleeting and visually engaging encounters.

Liu and Tao reference Hartmut Rosa, who observed a time paradox that exists with the integration of digital technology: as innovation accelerates, time dwindles. Ironically, tech promised increased leisure time through technological integration and efficiency. However, we are experiencing a culture of instantaneity, particularly in contemporary GAN-derived AI art. This new genre prioritizes the immediacy of visual consumption, often at the expense of depth and contemplation.[38] This GAN-dominated landscape is amplified by AI's prominent role in social media algorithms that curate all media feeds; depth and the elongated time often associated with celebrated artworks of the past seem to obstruct this new art genre's appeal, dissemination, and appreciation. With AI art fast-tracking creation, the resultant depth deficit appeases an audience who is starved of time.

Ben Bogard's *Zombie Formalist* stands as a satirical commentary on the commodification of art, surveillance capitalism, and the mechanization of intellectual labor by AI, critiquing this

shift in exhibition value that Tao and Liu point out. This generative artwork operates through two AI-powered lightboxes, each producing random visual compositions reminiscent of modernist painters like Gene David, Barnett Newman, Kenneth Noland, and Karl Benjamin. In an interplay of technology and social media, one lightbox disseminates its images on Twitter, tallying likes and retweets as a measure of public acclaim. Its counterpart, adopting surveillance tactics, generates images only in the absence of an audience, capturing the viewers' engagement time upon their return.

Using facial recognition software and interactive data, Bogard designed the installation's software to decode and cater to individual aesthetic preferences. It synthesizes this information to tailor future images, steering towards those that earn the stamp of "good" based on engagement metrics. *Zombie Formalist* mirrors and morphs with its audience's reactions, feeding into the dynamics of approval and attention in the digital age. Through the lenses of Twitter metrics and observed behavioral patterns, it trains its algorithmic eye to discern and perpetuate visual pleasure, embodying a clever critique of how AI art is now shaped by and perpetuates a cycle of immediate gratification and superficial engagement.[39]

Technology reshaping exhibition value is a familiar concept and traces back to Walter Benjamin's seminal writing, *The Work of Art in the Age of Mechanical Reproduction*. His analysis remains a cornerstone in discussions about technology's impact on art.
Since its introduction, scholars have debated Benjamin's contemplation of the "aura," which is the elusive quality bound to the singular presence and originality of artwork, specifically regarding what constitutes the aura and how it manifests in a work of art. This aura, he argued, dissipates when art becomes reproducible and the distinction between original and copy blurs to the point of irrelevance.

Benjamin posited that the mass reproduction of art, seen in the burgeoning fields of photography and film, might strip away the unique "aura." However, this loss democratizes art, shifting its value from exclusivity to accessibility. In this dissemination, art transforms from an isolated encounter to a shared experience, a pivot around which conversations and communal connections turn. It is a shift that bestows upon art a new kind of value that empowers a broader audience to engage with and be transformed by it.

This pivotal shift observed in Benjamin's writing is one from 'cult value,' meaning the deep historical and ritualistic resonance of artwork, to its 'exhibition value,' which emphasizes the artwork's visibility, accessibility, and potential to engage the public. This shift finds an acute embodiment in AI art, exemplified unapologetically by Bogard's *Zombie Formalist*, which lays bare the transactional triad of artist, audience, and market.

Artist and critic Douglas Davis revisits Benjamin's discourse in *The Work of Art in the Age of Digital Reproduction*, where he offers a counterargument to the demise of the aura, suggesting that technological reproduction can reinvigorate the aura, unveiling dimensions of truth previously unseen, providing a fresh perspective that echoes through much of digital art today. Ignas Kalpokas, professor at Vytautas Magnus University, picks up this argument in *The Work of Art in the Age of Its AI Reproduction*, proposing a recalibration of the 'aura' with the introduction of AI technologies. Here, the 'digital aura' of AI-generated art is anchored not in its ritualistic value but in its capacity to resonate within contemporary digital culture. Kalpokas makes the case that the 'digital aura' is partly produced by an artwork's interaction with and perception by a digital audience, with exhibition value amplifying its presence and impact. In the AI art domain, this is often measured through the personalization and interactive

experiences afforded by the technology, crafting a distinct auratic presence for each piece in the digital ether.

The focus on metrics such as views and shares, as indicators of this digital aura, suggests a democratization of art consumption, aligning with Douglas Davis' perspective yet adopting a more pragmatic stance. AI art's capacity to distill complex societal patterns could offer glimpses into the collective psyche, a digital reflection of our interconnected world.[40]

However, this perspective on aura is challenged when considering the critical reception of works like AICAN, often dismissed as pale imitations of human creativity. Kalpokas argues that AI's data-driven revelations contribute to the digital aura. The lack of critical discourse in the training datasets points to a significant gap in the artwork, a gap where the visuals-optimized engagement overlooks the deeper narratives that traditionally contribute to an artwork's lasting impact and significance.

Kalpokas' relocated concept of the aura, which visualizes the collective data of humanity, fails as a reflective tool on society because the data fed into these machines is impoverished; AI art can only offer a superficial glimpse into the collective unconscious of humanity. Thus, we can only see this newly placed aura as the seductive quality of GAN technology and its capacity to produce novelty. The aura of AI art has, regrettably, contributed to diminishing the arts since the current prominent AI art projects are seen as a novelty and a commodity and, therefore, cannot serve as a meaningful reflection of society. We can see this in the lack of depth within the artworks, its negative impact on institutions that platform this work, and a narrowing of the temporal window for audience engagement. Davis, Grba, Liu, and Tao critique this phenomenon, noting a multidimensional decay, where art is consumed rather than contemplated. This decay is

symptomatic of larger capitalist forces within cultural arenas, which, as Davis suggests, estrange and alienate viewers from the critical engagement that art demands.

As AI rapidly intertwines with every facet of society, Davis's perspective that its impact on the arts might be the "least of our worries" holds merit.[41] Yet, the infiltration of AI into our cultural fabric necessitates scrutiny to comprehend its trajectory and implications.[42] However, discussing the issue solely within the art domain fails to address the fundamental problem because capitalistic motives, the allure of technology, and a fixation on novelty that have reshaped cultural spaces are also deeply embedded within the AI sector.

Global business and economics correspondent at *The Economist* Arjun Ramani and research engineer at DeepMind Zhengdong Wang, in their essay, *Why Transformational AI is Really Really Hard*, dissect the surge of excitement around AI, where it is often compared to pivotal innovations like electricity and the internet. They trace this fervor to pursuing Artificial General Intelligence (AGI), considered the next leap in tech evolution.

AGI stands as a pinnacle concept in AI, representing a machine's ability to mirror the breadth and adaptability of human intelligence. AGI is a theoretical advancement of AI technology that may eventually possess the capacity for reasoning, abstract thinking, problem-solving, rapid learning, and experiential growth – all traits associated with human intelligence. AGI's allure lies in its promise to replicate and even eclipse human intelligence across all fields, offering a future where innovation might be endlessly self-propelling. This vision of AGI as a panacea for various sectors propels the quest for its realization, sparking dreams of a transformative era akin to past technological revolutions.[43]

This potential for AGI to replicate human intelligence and automate innovation recalls Kalpokas's redefined concept of the aura in AI art, where AI visualizes the collective data of

humanity by parsing the innumerable documents on the internet, categorizing these artifacts, reassembling them in a way that makes them intelligible to its operator. Thus, it holds the promise of revealing profound insights about society. However, just as the aura in AI art may be criticized for contributing to a superficial engagement with the arts, AGI often glosses over the societal and ethical implications of creating machines that could potentially outthink us. The current discourse in innovation frequently bypasses the significant issue of bottlenecks: the societal and economic structures that can either accelerate or impede technological breakthroughs. This oversight mirrors the tendencies in AI Art, where creators often give in to the allure of sophisticated technology rather than probe AI's intricate questions. Zylin'ska notes that AI artists frequently succumb to tech glorification instead of leveraging their art for incisive critique.[44] Like these artists, enamored with the visual allure produced by their sophisticated equipment, AI advocates focused on the quest for AGI tend to overlook the technology's potential to navigate and address the complex web of societal challenges. Ramani and Wang underscore that the evolution of AGI must conscientiously navigate these bottlenecks at each stage of advancement. Otherwise, the transformative impact of AGI might be curtailed, echoing past technological progress impeded by neglected sectors; the misconception is that AGI will transcend the historical trajectory of transformative technologies.

Ramani and Wang's skepticism about the feasibility of AGI points to a critical awareness that is often missing in discussions about AI in art where just like in the quest for AGI realization, it must navigate through societal and economic bottlenecks, the integration of AI in art must also be cognizant of the bottlenecks in cultural and theoretical frameworks that give art its depth and resonance. The current trajectory of AI art risks diminishing the arts by failing to embed these creations within the broader discourse of human culture, history, and criticism.

In both AI and its application, the allure of novelty can disconnect the discipline from its theoretical roots. The erosion of cultural substance in art produced via GAN technology is symptomatic of a broader neglect of the critical narrative and theoretical frameworks integral to artwork. AICAN's forays into abstraction epitomize this corrosive quality; while technologically novel, they overlook the critical discourse that lends abstraction its weight. Similarly, the field of AI is mired in an overzealous promotion that obscures a clear understanding of its actual capabilities, reflecting a disconcerting disjunction between theory and practice.

AI Promotionalism and Limitations

The allure and hype of AGI embedded itself in the field of AI, where the interplay of anticipation and disenchantment with AGI serves as demarcation points in the brief history of AI. Historically, the field has swung between the heights of interest, called an "AI Spring," times pulsating with optimism and massive monetary investments, and periods characterized by waning interest, scholarly retreat, and financial scarcity, known as an "AI Winter."[45]

Melanie Mitchell, Professor at the Sante Fe Institute and author of *Artificial Intelligence: A Guide for Thinking Humans,* recalls AI's brief history in her essay *Why AI is Harder Than We Think*. Mitchell highlights several events, such as in the late 1950s, the New York Times piece captured the national imagination with the tale of the Perceptron,[46] Frank Rosenblatt's brainchild and a forerunner to our modern neural networks.[47] The Perceptron was a bot that encapsulated the dreams of artificial intelligence and thought to attain literacy, self-replication, and consciousness. The invention of this bot led Herbert Simon, a pioneer of Artificial Intelligence, to proclaim that within 20 years, machines will rival all human capabilities.[48] Claude Shannon, who laid the foundation for digital circuit design theory, which is a critical component

of modern computing and AI, envisioned a near future populated by science fiction's robotic progeny,[49] and Marvin Minsky, co-founder of MIT AI lab, forecasted a swift resolution to the puzzles of AGI within a generation.[50]

However, the optimism of the 1960s waned as the 1980s heralded a sobering reality. The AI systems of yesteryear, rigid in their programmed routines and confined to narrow realms, faltered against the complexity of real-world dilemmas. They lacked the fluidity of human intuition, that deep well of unspoken knowledge our minds draw upon, a quality the machines' creators could not encode into silicon; this was the brittle nature of early AI—a marked absence of the 'common sense' that binds human experience.

With its lush optimism, the initial AI Spring wilted into the first AI Winter, spanning the 1990s into the early 2000s. However, as the frost thawed, the field of machine learning, grounded in statistical analysis, began to sprout anew, shifting the ambition from mirroring human intellect to constructing predictive models. This evolution of thought birthed deep learning and precipitated our current AI renaissance.[51]

Stuart Russell, whose seminal work *Human Compatible: Artificial Intelligence and the Problem of Control* is a staple in the field, mirrors the early trailblazers' optimism, speculating that AGI could emerge within the lifetime of his children[52]—a sentiment reminiscent of Minsky's claim in the first AI spring. Sam Altman, CEO of OpenAI, projects a future where AGI's academic triumphs redefine civilization's contours.[53] In 2019, Elon Musk cast a vision of the near future with a bold declaration: within a year, he promised, the highways would be coursing with over a million Tesla vehicles, each equipped with full self-driving capabilities. This proclamation was not unique to Tesla; it echoed a zeitgeist that hummed through the corridors of numerous automobile manufacturers, all targeting 2020 as the year they would usher in the

autonomous driving revolution.[54] Mark Zuckerberg, setting a towering goal for Facebook in 2015, envisioned surpassing all human senses within a decade, effectively bridging the final gap to AGI.[55]

In an era where the possibilities of AI technologies are perpetually expanding, the notion of Singularity, a point where technology automated by AGI accelerates at an unprecedented pace, fundamentally and irreversibly transforming human existence, is within the realm of possibility. At this juncture, the speed of technological progress would outpace our accounting of advancements, becoming self-propelling and beyond our temporal grasp. This vision, championed by Ray Kurzweil, is based on an AI-driven future where machines overshadow human intellect. Kurzweil, a celebrated inventor and the leading engineering mind at Google, stands as a beacon of optimism in this vibrant AI Spring.[56] His delineation of the Singularity is an extension of the writings of IJ Good and Vernor Vinge, both of whom pontificated on the boundless potential of machines. With the help of the writings of Good and Vinge, Kurzweil proposes a future where an avalanche of technological advancements intertwined with science fiction will trigger an eventual "intelligence explosion."[57]

Central to this theory is the exponential growth exemplified by Moore's Law. Originating from an observation by Intel's founder, Gordon Moore, this law posits that the number of components on a computer chip doubles yearly, meaning that as components miniaturize, computational power magnifies.[58] Such growth is not merely an observation; it reflects a broader pattern in technology where beneficial innovations invariably become more affordable, user-friendly, and widespread. By Kurzweil's estimations, the computational power of machines would rival human brain computational capacity by 2023.[59] Kurzweil believes that if intelligence is indeed rooted entirely within the neural circuits of our brains, then truly understanding the

enigma of human cognition necessitates intricate reverse engineering facilitated by the ever-escalating prowess of software. Many neuroscientists might challenge this notion, given our limited understanding of the brain's intricate workings.[60] However, proponents argue that as progress is made, this tech will increasingly find medical applications to help illuminate the still esoteric nature of human biology.

The true leaps in AI owe less to the innovation of the technology itself than to the sheer magnitude of computational strength and datasets now available. The vast expanses of data feed into language and vision models, propelling them forward. Researchers circumvent the tedium of defining low-level data by using algorithmic pattern recognition to automate the process, allowing for neural network scaling.

The power of deep learning lies in its capacity to parse data and anchor datasets, guided by finely tuned loss functions and definitive output goals. The nuanced prediction across conceptual divides fuels the generative revolution where AI models can produce images, generate text, curate personalized film recommendations, perform language translation, and pinpoint individuals in images without direct prompts.[61] As computation continually amplifies, the belief is that it becomes possible to layer AI models more densely and allow them to use larger datasets. Through this, the precision and accuracy of generative AI are proposed only to get better.[62]

While precise and effective in their function, the narrow applications of AI still fall short of ushering in the realization of AGI. J. Mark Bishop, professor of computing at Goldsmith University of London, believes that the key to intelligence does not exist within data; it lies in the missing context surrounding it.[63] Bishop’s claim echoes that of the late Paul Allen, co-founder of Microsoft, who had a deep concern for AI’s limitations, especially in its attempts to grasp

context, which mirrors the broader debate in the field of AI about the need for systems that can better understand and adapt to context. AI systems must process data and understand the broader situation by inputting historical background, cultural norms, and other factors influencing how information should be interpreted. The current limitation in data processing helps explain why prolonged efforts based on pattern recognition, scaling datasets, and the recent influx of computational capacity have led to conversational interfaces that still struggle with sarcasm, idioms, or cultural references that are not explicitly spelled out in the data it processes.[64]

The significant gap between mere linguistic processing and authentic comprehension persists, which becomes intelligible in much of AI-generated art. As algorithms churn out images derived from their programmed data, they capture only the visual aspects without the essential discourse and critical engagement that lend art its distinct character. As mentioned, the impoverished data fed into these AI systems only offers a seductive glimpse into the capabilities of GAN technologies and all technologies that consist of AI. Much of the advances in AI are based on the billions of documents available on the internet, and practitioners pushing the field forward are moving in an iterative cycle of disappointing progress as they repeat the same mistake of the last few decades. As it stands now, no amount of data can furnish these systems with the intrinsic ability to reason or the capacity to gain new knowledge.

Mitchell argues that despite strides in deep learning, the field falls short of replicating human intelligence and achieving the much-vaunted goal of creating AGI. This shortfall is attributed to a fundamental "brittleness," where AI systems falter and error when faced with circumstances outside their training data, where it often reaches correct conclusions via incorrect logic.[65] Mitchell, Bishop, and Allen agree that these technologies are adept at imitation rather than genuine understanding, similar to Grba's view of GAN-generated art. Mitchell observes that

these advanced tools rely on data patterns rather than authentic abstraction, resulting in limited applicability and, as Grba pointed out, homogeneity in the art they produce.

The notion that AI systems can acquire substantive knowledge simply by processing human-generated content like text, videos, and images is an oversimplification. The results of GAN art projects have demonstrated that merely enlarging the datasets for these systems to train on does not equate to a genuine understanding of the subject matter and has revealed the shortcomings in the current approach to developing AGI, suggesting a need for more nuanced and complex learning mechanisms that go beyond the surface level of data inputs. The progress in AI tools is undeniable, yet even the most seasoned professionals grapple with the enigmatic nature of these AI models.

The unveiling of OpenAI's ChatGPT has rippled through the field, challenging the criticism of Bishop and Mitchell due to this Large Language Model's (LLM) nuanced command of language and worldly context. The model's ability to parallel human expertise across diverse benchmarks has renewed vigor in the quest for true artificial intelligence. However, Ramit and Wang highlight a persistent issue: the irreplaceable role of the human operator and common sense that AI struggles to emulate. This elusive and pivotal human factor adds complexity to the endeavor of forging an AGI that can function without human intervention.

Testing For Intelligence; Overpromising and Under-Delivering

DeepMind's mission is to solve this issue of intelligence and use it to solve everything else.[66] Yet, the essence of what they seek to decode, "intelligence," remains elusive, anchored in a collective 'common sense' that requires concrete definition. However, attempting to pin down intelligence reveals its expansive and intangible nature; it is a term too encompassing and

abstract for a clear-cut understanding. This ambition to replicate such a broadly interpreted concept may be what is impeding the field itself.

The inception of AI traces back to the 1956 Dartmouth conference, where one of the debated topics was its naming. John McCarthy introduced “Artificial Intelligence” as a term distinct from the then-popular “self-organizing networks” known today as Neural Networks. However, these concepts have since converged in the current iteration of AI. Herbert Simon argued for the name “Complex Information Processing” to steer clear of the fixation on replicating human intelligence. This trajectory has since become deeply ingrained in the field.[67]

Mustafa Suleyman, co-founder of DeepMind, posits that intelligence is the capacity to achieve one's goals, a definition agreed upon in the field.[68] However, this definition does not address where these goals come from and, more importantly, how they get inputted into their programming. There is a stark distinction between the goals of an autonomous, living being and those of a machine, conflating the two muddles the conversation around intelligence within these artificial systems.

Intelligence, as a term, warrants a thoughtful reconsideration. Its application must be narrower, demanding specificity in our quest for understanding. AI is in dire need of what philosopher David Chalmers calls “conceptual engineering," which requires a refined reevaluation of casually employed terms.[69] With the emergence of GPT, the lines defining intelligence in humans and machines have blurred, necessitating a fresh interrogation of what this loaded term means when applied to a machine.

The tendency to forecast imminent human-equivalent AI, as done by visionaries like Kurzweil or tech leaders like Zuckerberg and Altman, encounters a fundamental issue: the target is not well defined. What exactly constitutes "human-level intelligence?" Without clear criteria,

the concept remains elusive. If it suggests that machines could match humans on any cognitive task, we must ask: what does that include?

There is a history of tests that measure the broadly defined intelligence of machines, which are based on the model provided by the Turing test, introduced by Alan Turing in his 1950 essay *Computer Machinery and Intelligence*. This test aimed to provide a practical alternative to the philosophical debates about machine cognition. Turing sought to distill the question "Can a machine think?" into a verifiable challenge.[70] He designed a game where a judge engages with two hidden participants, one human and one machine, relying solely on their text responses to identify them. Turing's game probes whether a machine could think based on whether it could convincingly mimic human responses. However, he left the criteria for judging open-ended, such as the judge's selection, discussion length, and topic choice.

Despite these procedural gaps, Turing made an oddly specific prediction that within 50 years, machines would deceive judges 30% of the time in brief conversations. In 2014, his forecast came true when the chatbot Eugene Goostman duped 33.3% of judges at a Royal Society of London Turing Test event.[71] However, the transcripts revealed the bot's evasive maneuvers and awkward dialogue, suggesting its success hinged on the program's over-engineered propensity to avoid hard questions and switch topics within a short time frame rather than showcasing true conversational finesse. Also, this arguably dubious passing of the Turing Test unearthed no novel breakthroughs; from the 1970s' ELIZA to today's social media scam bots, machines have long exploited our tendency to anthropomorphize technology and imbue them with sentience.[72]

Turing's legacy ingrains a logic of substitution, assuming that machines exhibit human-like generalizations when they can successfully replicate tasks humans can do. This assumed

intelligence in substitution has shadowed the field since IBM's Deep Blue triumphed over chess champion Garry Kasparov in 1997. Chess is considered a complex human endeavor. Herbert Simon even said that a machine beating a human in this game would equate to it being superior in intelligence.[73] The feat was monumental, not because Deep Blue showcased a chess strategy but because it highlighted how brute force computation could mimic human intelligence. It exposed a fundamental flaw in using chess as a benchmark; the game of chess conquered by the bot's search capabilities, where Deep Blue could perform millions of position evaluations per second, proves that the bot did not form any strategy and, therefore did not generalize in any way suggesting that Deep Blue did not display a genuine understanding of the game.[74]

AI programs have a track record of eclipsing set milestones. However, the benchmarks exhibit a similar flaw of logic where this basis of substitution does not prove intelligence but rather significant novel capabilities. For example, IBM's Watson victory on "Jeopardy!" in 2011 with its rapid data retrieval led researchers to believe it could "think" to answer the questions.[75] However, as critics of this benchmark observed, Watson was not 'thinking' as it was sifting through a vast database at high speed. The system does not "understand" the content like humans do and cannot form conceptual models or grasp the deeper significance of the information.

Watson's limitations became apparent when applied in other applications, such as healthcare, where Houston's MD Anderson Cancer Center briefly used it. The effectiveness of Watson depends on the quality and quantity of its training data and its capability to process and analyze large volumes of data much faster than humans, which explains its success in Jeopardy. However, the inconsistent, unstructured, and fragmented nature of healthcare data hindered Watson's effectiveness. Initially, experts promoted Watson as a tool to aid doctors in making more informed treatment decisions. Nonetheless, Watson struggled with the complexity and

variability of cancer cases, often providing incorrect recommendations that did not align with current medical practices. Consequently, IBM's high-profile contract with Houston's MD Anderson Cancer Center was terminated, leading to negative press about Watson.[76]

DeepMind's AlphaGo in 2016 triumphed over Lee Sedol, known as one of the top competitors in Go, an ancient and intricate board game renowned for its complexity far surpassing that of the game of Chess. AlphaGo's victory constituted the use of what was considered by professional Go players as moves that were not of human origin[77] and argued by Deep Mind's Demis Hassabis to be evidence of the machine's "intuition."[78] However, this program's win resulted from its ability to recognize patterns from an extensive dataset rather than truly understanding the strategy of Go.

Challenging these critiques of Alpha Go's win over Sedol, DeepMind's AlphaGo Zero emerged as a refined iteration of Alpha Go, removing the foundational knowledge of Go and instead learning exclusively through self-play, employing a combination of reinforcement learning, simplified architecture, and advanced search.[79] Swiftly eclipsing both human Go champions and its AlphaGo ancestors, AlphaGo Zero mastered Go with unprecedented efficiency and was used to play checkers, Chess, and shogi.[80] This model hinted at a trajectory towards versatile AI systems adept in self-directed mastery across varied tasks. Despite this, the essence of AlphaGo Zero's prowess lay in pattern recognition refined through relentless self-competition rather than an authentic, human-like grasp of Go's strategic depths. While it edged closer to a generalized learning mechanism, AlphaGo Zero remained specialized, its expertise confined to Go's realm, with no capacity to extrapolate its insights beyond games.

All of these benchmarks, once surpassed by AI, are routinely redefined, a phenomenon Pamela McCorduck calls the "AI effect," which is a ceaseless shifting of goalposts, which has

become so frequent in this field that experts have started to dismiss these tests altogether as mere spectacle.[81] This cycle of redefinition is deeply ingrained in the discipline of AI, reflecting its advancements yet revealing the absence of a consensus on what intelligence truly entails.

The release of GPT-3 exacerbates this issue, with its advanced text generation spurring beliefs in its grasp of intelligence. In his book *The Coming Wave*, Suleyman believes that LLMs like GPT-3 eclipse the Turing test by engaging in fluid conversation.[82] With the recent rollout of GPT-4, this argument is stronger, and Altman hints that Q* might render the question of machine intelligence obsolete.[83] Yet, skepticism remains, epitomized by Gary Marcus's stance that such systems, while producing coherent outputs, still lack genuine comprehension, essentially regurgitating learned patterns devoid of true understanding, an issue reflected in the results of these machines' past benchmarks.[84]

Notions like understanding, consciousness, intelligence, and creativity were casually attributed to machines because they were once too primitive to test such ideas. As this technology advances, those in the field are forced to reevaluate proposed benchmarks; as they apply them to more capable machines, it becomes clear that the current benchmarks do not help measure intelligence.

Mitchell investigates a prevalent fallacy: the assumption that tasks humans find challenging are equally so for AI and vice versa.[85] This conflation of human difficulty with AI difficulty is a misconception that continues to skew our understanding of machine intelligence. Contrary to expectations, AI systems often stumble over tasks humans handle easily, such as sensory perception and spatial navigation, known as Moravec's Paradox.[86] This paradox underscores the irony where AI can conquer complex strategic games like Go, Chess, Checkers, or Shigo, which DeepMind's AlphaGo Zero did spectacularly, yet falters at seemingly simpler

tasks. As Gary Marcus notes, AI's proficiency in complex logic-oriented games like Chess or Go does not extend to more nuanced simplistic games requiring a blend of skills such as charades, which require a mix of abilities including acting, language, and social understanding, remain out of reach for AI.[87]

Human reasoning is just a tiny part of our cognitive abilities, supported by a vast and primarily unconscious knowledge base.[88] Developmental psychologist Elizabeth S. Spelke refers to this as "core knowledge," which consists of various foundational cognitive abilities that underpin human understanding from infancy. This core knowledge, critical for object recognition, spatial awareness, and social interactions, explains why focusing on complex reasoning games or language has led to disappointment in the development of AGI, given that these concepts are often grasped pre-linguistically.[89]

This approach reflects a build-first, understand-later methodology prevalent in tech development, as highlighted by Reid Hoffman.[90] While this has yielded practical tools for classification tasks, it falls short in creating a genuinely intelligent machine that grasps and generalizes concepts beyond mere mimicry.

Stripping away the inflated claims, AI models like GPT are advanced autocompletes, and statistical pattern predictors are far from the general cognitive abilities of humans. They do not "read" or "understand" as humans do; their benchmarks, named after cognitive skills, exaggerate their capabilities, mistaking statistical manipulation for genuine skill mastery. While AI may excel in specific, isolated tasks, the broad and adaptable cognitive faculties that characterize human intelligence still elude artificial systems. The once-held assumption that a machine capable of translating language, converting speech to text, or generating language would require

a genuine understanding of the language itself faces challenges from models like GPT, which is no surprise.

Drew McDermott's concept of "wishful mnemonics" aptly sheds light on misconceptions originating from anthropomorphic language. When applied to AI, terms like "understand" or "goal" suggest human-like intelligence and values where there is none.[91] This tendency has diluted the distinction between AI's theoretical aspirations and practical functions, entangling them in a web of inflated expectations.

Anthropomorphic terminology applied to AI extends to the art world, where artists like Refik Anadol use terms such as "hallucinate" to romanticize machine error as a stand-in for creativity. This framing misleads the public and dilutes the precision of language within the field of AI itself. When AI systems make errors, terms like "hallucination" borrowed from human experience wrongly imply sentience where there is none.

The discipline of AI contains many ambiguities, allowing terms to be used interchangeably and fostering a noncritical stance reminiscent of the recent GAN-derived artworks' uncritical reception. The indiscriminate use of terms like 'GPT' in public discourse or 'Deepfake' in the context of generative AI only amplifies this confusion, obscuring the field's true nature under a veil of misplaced familiarity. The term 'Deepfake' first surfaced in 2017 in the realm of manipulated media, particularly in the production of non-consensual pornography.[92] It is a term that alludes to negative use cases such as voice cloning for scams or using sophisticated text generation tools to spread misinformation. However, 'Deepfake' is not a blanket term; its implications can shift depending on the audience.

It is crucial to draw a line between the negative overtones of 'Deepfake' and the broader, more neutral concept of what generative AI is. Generative AI stands on firmer ground when

looking at it strictly from a capabilities standpoint, where, in this context, it denotes the use of algorithms to create synthetic media that is indistinguishable from the real. Deepfake, used in broad strokes when describing this technology, is a term for narrow negative use cases and dismisses its potential uses in software development and research applications.

The discourse around generative AI in the arts, particularly the term "generative art," often becomes ensnared in a narrow fixation on the contemporary allure of algorithmic randomness, a fascination spotlighted by Refik Anadol's *Unsupervised*. This limited view fails to appreciate the rich tapestry of generative art's heritage. It risks obscuring the pioneering efforts of artists like Manfred Mohr, whose "Cubic Limit" series (1973-1974) used algorithmic rules and the code of FORTRAN IV to produce geometric abstractions.[93] This blending of computation and artistry broke new ground, infusing the avant-garde with methodological innovation and expanding the lexicon of artistic production. Furthermore, Vera Molnár's homage to Paul Klee in "À la recherche de Paul Klee" transcends mere computational replication. Her work bridges the systematic with a palpable human touch, intertwining the calculated beauty of algorithms with the nuanced strokes of artistic intuition. Molnár's art is a vibrant dialogue between algorithmic methodologies and art history, deepening our understanding of AI's place in the broader narrative of art's evolution.[94] To label generative art solely by the recent outputs of AI, which often lack critical depth, is to overlook a lineage rich with experimental vigor and miss a chance for a more profound engagement with the relationship between AI and art.

Clearing the fog around these terms is essential for a precise understanding of what generative AI is and is not in this technology that is advancing at an alarming rate due to the AI arms race unfolding between the major tech companies. The technology's surge was notably catalyzed in the summer of 2022 when open-source projects like MidJourney and Stable

Diffusion spurred companies to release iterative versions of their foundational models.[95] The market validated this move, drawing a staggering $17 billion investment in 2023.[96] Amidst this rapid advancement and subsequent rolling out of technologies, semantics over generative AI has intensified, where the same technology vilified as 'Deepfakes' is also celebrated as' precision AI' in the next. The promotional tactics of these tech giants hinge strictly on the novelty of their offerings, as these models currently have only narrow use cases. As each new iteration emerges, it only adds layers of ambiguity about what these advanced systems can genuinely achieve. This increased funding and promotion in the field from these tech companies who can offer six and even seven-figure salaries to those in AI have a monopoly on the concentration of AI researchers where these tech giants can sustain the remarkable progress of their AI capabilities while also disincentivizing dissent among the purveyors of AI technology.[97] Again, there appears to be another parallel to Zy'linska's 'platform art,' where the most innovative technology and discourse stays within the sphere of these significant tech organizations. In both contexts, there is a misunderstanding of the technologies' actual capacities that stems from a decoupling of theory and practice where the foremost academics in this field are coopted by significant corporations, thus limiting the criticism and dissent of their work. Not allowing for an abundance of criticism in the general discourse has continued to fuel the mystery of this technology, polarized those in the field, and has exasperated the hyperbolic narratives that pitch AI as either humanity's savior or its downfall.

Existential Fear and Embodied Cognition

The widespread concern in AI hinges on malicious actors' potential misuse of AI technology, a risk underscored by the proliferation of deepfakes.[98] As this technology becomes

more accessible due to the barriers to entry becoming lower than ever, there is a clear tension. Suleyman builds on this threat by noting that the democratization of these powerful AI models, currently only available to a select twenty organizations, could fall into any number of hands, which opens the possibility for users to repurpose these models, especially as computing costs lower, fostering an environment where experimentation might lead to something inadvertently perilous. There is a particular unease about the emergence of an autonomous, self-improving AI system that could give rise to AGI with no safety nets.[99]

The Munk AI debate is a compilation of the many sensationalist narratives akin to Suleyman on the formidable potential risks of AI by thought leaders such as Max Tegmark, who argues that AI has a potential "blast radius" to that of nuclear weapons and suggests the harm of this technology may be unbounded. Yoshua Bengio introduces a different apocalyptic scenario, arising not from current evidence from the machines themselves but from the theoretical speculation that machines could develop an instinct for self-preservation, menacing humanity once they achieve a form of consciousness. However, no concrete proof suggests that current AI systems are on a path toward developing such human-like intelligence or desires, much less so that these developments would lead to animosity against humanity.[100]

The narrative that incremental advancements in AI signify a seamless march towards AGI, a narrative that Yehoshua Bar-Hillel and philosopher Hubert Dreyfus have challenged, and which is exemplified in Stuart Dreyfus' analogy that a monkey climbing a tree is not a step towards space exploration.[101] Tegmark's position exemplifies this misconception, projecting a future where narrow intelligence seamlessly escalates into a panacea or a Pandora's box. The idea that narrow AI achievements are harbingers of a general intelligence mirroring our own

overlooks the reality that the subtleties of human common sense remain an elusive frontier in AI development.

Douglas Hofstadter, who wrote the seminal work *Gödel, Escher, Bach: An Eternal Golden Braid*, is often cast as an AI skeptic, wary of the inflated claims and expectations surrounding the technology. Hofstadter's skepticism echoes the viewpoints of thinkers like Bishop, Marcus, and Mitchell; however, recently, Hofstadter has evolved into what many now label alarmism. This shift from skepticism to alarmism is not driven by fear of AI's potential to overpower humanity, like Bengio and Tegmark argue, but rather by its implications for the arts. Hofstadter views the application of AI in creative fields as a profound challenge to the assumed complexity of human essence, unsettling in its suggestion that the ineffable qualities of creative expression might be easily programmable in machines. It is a nuanced fear that questions the uniqueness of human intelligence and creativity in light of AI's ability to reproduce cultural artifacts.

In the chapter "Staring Emmy Straight in the Eye – and Doing My Best Not to Flinch" of *Creativity, Cognition, and Knowledge*, Hofstadter examines David Cope's EMI (Experiments in Musical Intelligence), a program designed to compose music. Hofstadter grapples with the unnerving proficiency of EMI to emulate the stylistic signatures of legendary composers, achieving what appears to be creative expression devoid of genuine understanding or sentience.

Douglas Hofstadter's trepidation resonates deeply within the narrative of AI in the arts, touching on the profound anxieties about the mechanization of human creativity. He perceives the algorithmic emulation of Bach's compositions as a reduction of human expressiveness's intrinsic, often mystic complexities to mere data points. For Hofstadter, the idea that algorithms

might replicate human-created art's emotional and technical depth is an unsettling proposition, hinting at a future where machines can render the unique touchstones of creativity.[102]

A scholar of Hofstadter's standing, known for his seminal work probing the depths of consciousness and personal identity, ironically sees his fears realized in AI projects like AICAN. While impressive in their capacity to mimic, these technologies operate on a superficial level; they rearrange data into pleasing forms but lack the narrative depth that gives art its cultural resonance and meaning.

Hofstadter's concerns arise from veneration for the artist as a solitary figure of creative brilliance—a concept oversimplified and jeopardized by AI's approach to art production. His unease points to the broader issue of AI art, where ignoring the rich dialogue, historical nuance, and critical discourse underpinning artistic achievement is accepted. In this dilemma, AI is seen not as a collaborator in the creative process but as a potential usurper, reducing the complexity of art to patterns and sequences. Hofstadter's fear explains how much of the current trend of AI-generated art perpetuates a binary understanding of creative genesis and inadvertently endorses the contentious idea of a singular artistic authority rather than promoting a diverse and interconnected genesis of artistic expression.[103] Moreover, Hofstadter's views on AI's role in the arts may well be a reflection of a particular school of thought that divorces intelligence from the body, envisioning the mind as a disembodied computational engine that intakes, manipulates, and generates information, relegating the body to a marginal role.

This notion gained prominence in the mid-20th century and originates from Allen Newell and Herbert Simon's "Physical Symbol System Hypothesis," a theory claiming that a system capable of manipulating symbols, like a computer, has the necessary and sufficient means for intelligent behavior.[104] It underlies the concept that manipulating symbolic representations can

understand and replicate human cognitive processes and artificial intelligence. This theory suggests that a digital system could attain intelligence without the brain's non-symbolic processes, such as the body's interaction with its physical surroundings. This idea, unchallenged in AI circles due to the rise of statistical and neural-inspired machine learning, perpetuates the image of a contemporary "brain-in-a-vat," a neural network operating detached from the tangibility of the world.[105]

This separable mind is an artifact of history that prioritizes the mind as intellect, the critical thing that differentiates humans from non-humans. This concept is this discipline's cultural grammar. It implies that an AI devoid of emotional textures and inherent biases, which are hallmarks of human cognition, could replicate human thought. This AI would embody a 'pure' intelligence, a notion that feeds into dystopian narratives such as Nick Bostrom's "Paperclip Maximizer," where an AI's ruthless efficiency in achieving its goals of producing paperclips could theoretically lead to catastrophic outcomes. Bostrom's theory of Orthogonality, which postulates that a system's objectives could align with any value, implies that an intelligent system could move away from programmed human values, giving credence to such grim possibilities.[106]

Similarly, Stuart Russell acknowledges the Orthogonality of intelligence and goals, highlighting the risks of tasking a superintelligence with complex problem-solving, which could lead to dire misinterpretations of human objectives. He argues a hypothetical scenario of using AI to solve the climate crisis where a machine tasked with reducing carbon emissions would lead to the machine removing all humans.[107] These thought experiments by Bostrum and Russel evoke a vision of AI systems endowed with the capability to meticulously chart the course to their programmed objectives and devise the most efficient pathways to achieve these goals.

However, this same imagined intelligence can simultaneously be so shortsighted that they cannot grasp the underlying human contexts that frame these objectives: to sell the made paperclips to other humans who would like to use them or preserve the planet to avoid extinction.[108] In these scenarios, machines present a paradox by being conceived as possessing superintelligence in one respect while simultaneously lacking it in another.

Jeff Hawkins offers a counterpoint to these apocalyptic projections, positing that by emulating the brain's learning algorithms, minus the emotional and physiological needs, we might engineer an intelligence that is both benign and devoid of existential angst—a safeguard against the concerns highlighted by Bengio in the AI Munk Debate.[109]

Deep-learning expert Geoffrey Hinton muses that a form of intelligence, as suggested by Hawkins, would require computational complexity rivaling the human brain, which has neurons with trillions of connections where current models only have billions; this perspective mirrors Kurzweil and Suleyman, who advocate for the scaling of AI systems as a pathway to AGI.[110] However, this approach is met with skepticism from thinkers like Rod Brooks, who question the viability of the computational model of intelligence itself, suggesting that advances in AI may be less substantial than they appear, which have been propped up by the increasing computational power of Moore's law.[111]

The concept of embodied cognition presents an alternative, underlining the body's crucial role in cognitive processes and challenging the idea that intelligence exists entirely within the brain. This perspective, gaining momentum since the 1970s, asserts that the physical experiences and social interactions intrinsic to human life are not just adjuncts to intelligence but foundational to it.

Neuroscientist Don Tucker's claims that disembodied cognition is a fallacy, combined with cognitive psychology and linguistics insights, casts doubt on the AI community's pursuit of 'pure' intelligence.[112] The embodied cognition theory suggests that the very emotions and biases often regarded as obstacles to rationality are, in fact, essential to the functioning of intelligence.[113]

This theory of embeddedness makes it seem much more likely that human intellect is not just a byproduct of the complex interplay between neurons in a brain because this brain is in a body, which exists in a society, a society within an environment, and that environment within the world. Intelligence emerges not as a singular phenomenon but as an emergent property of this holistic system where the interaction of all these parts that knowledge, learning, and conceptualization can emerge—an emergent property of the entire system, not just a disembodied brain.

Mirroring this idea of embeddedness is that the essence of what makes art resonate lies not just in the visual spectacle it presents but in its deep-rooted connections within the cultural system it inhabits. This embedded nature of art was argued by Arthur Danto while discussing Andy Warhol's *Brillo Boxes*, asserting that the mere appearance of an object does not suffice to elevate it to the status of art. Danto illuminated the necessity of the "art world" to determine that it is art; the theoretical and historical context that confers artistry upon a visual object is inextricable.[114]

Embedding is crucial in art and an intelligent system; it is not merely about the constituent data but the relational practices, norms, and historical dialogues within which they operate. Art is not simply a creation that stands alone; it is part of an ongoing conversation, a dynamic exchange within the cultural, social, and temporal realms.

In this way, Harsha Gangadharbatla's *The Role of AI Attribution Knowledge in the Evaluation of Artwork* practically proves this aspect of embeddedness. The basis of the study centers around a Turing-like examination that challenged participants to differentiate between AI-generated art and human-made pieces; over 70% of participants could not discern the creator's identity when presented with impressionistic landscapes or abstract creations.[115] When the distinction between human and AI -AI-generated works were revealed, there was a consistent recalibration of appreciation; artworks once praised were devalued when credited to AI.[116]

These findings are a testament to Danto's argument regarding the valuation of art but also hint at an undercurrent of bias that permeates perceptions of machine-generated art. This bias is not merely a reflection of participants' discomfort with deception, as Gangadharbatla might suggest, but taps into deeper concerns echoed by AI professionals—fears about the erosion of human agency and the sanctity of human creativity.

The discourse surrounding AI spirals into a labyrinth of existential angst, driven by the fear that machines have agency, are capable of decision-making and have their own moral compasses. This trepidation is palpable, especially when one contemplates the strides made in generative AI, the looming specter of AGI, and the endorsement of the existential threat by academics in the field, such as Bengio, Bostrum, Russel, and Tegmark. However, such fears may be premature, for these machines are not detached from the human experience because they are embedded in the human experience and expressions of the world, as its current integration makes it impossible not to interact with AI. When these machines are operated, they rearrange the vast datasets collected from their entanglement with humanity, and the operator's human creative agency is momentarily dispersed amongst the vast data being rearranged.

Consider the example of facial recognition technology, which has come under scrutiny for its differential accuracy across skin tones. However, the error does not lie within the algorithm's 'intent,' for it has none; it emerges from the choice of training data and the limitations of the camera technology it works with. It is a stark reminder that the biases we observe in AI are reflections of our societal imbalances and choices, not an inherent characteristic of the AI system itself.

In this mesh of interactions and integrations, creative agency becomes a collective construct—it does not reside solely within a machine's human operator or algorithm. Instead, it emerges from the interaction of data selection, technological capabilities, and the individuals who orchestrate these elements. This relational agency underscores a coalescence of human intent and machine computation, momentarily blurring the lines between creator and creation. This is the auratic quality Kalpokas argues for, located in AI-generated art. However, ironically, it has only emerged when discussing the technology itself, which can be seen as a mirror for society instead of its application in art.

The advent of AGI and generative AI in the art world is not unlike the stir caused by the introduction of photography and film, which once sparked fears of rendering the human artist obsolete. This pattern of trepidation in the face of innovation seems like a rite of passage for new technologies. The potential of AGI suggests an era of abundance ushered in by unprecedented technological leaps, but alongside this optimistic forecast lurks a shadow of mass destruction, a narrative familiar in the technological arc of power. The auratic essence of AI art, as Kalpokas identifies—the ability of AI to sift through and make sense of the vast digital footprints left by society—positions it as either a revolutionary force or a harbinger of disaster.

However, these immense datasets consumed by AI need a more multifaceted context to approximate human intelligence or the depth of true artistry. Suleyman argues that to harness this potential of "untold abundance," these tools must remain in the hands of the tech organizations that are the architects of this digital frontier.[117]

Paradoxically, this technology has fueled the engines of polarization and disseminated post-truths, whether through social media's echo chambers or seismic shifts in our economic foundations, a consequence of an unrestrained deployment of technology. Large tech companies promoting their platforms' neutrality have obfuscated their role in shaping discourse, as algorithms prioritize engagement, propelling the sensational to the forefront and compromising our information ecosystems. Ironically, those who helped wreck the societal structures now position this same disruptive technology as its means to fix it.

However, the call for containment seems belated where the widespread use of generative AI, specifically regarding text-to-image generators, is already evident. Eugene Ch'ng argues that this narrow application is revolutionary for shedding the arbitrary manual labor of art practices.[118] Ch'ng mirrors Vera Molnar's sentiments decades ago that computers will liberate artists from the legacy of art, opening up a realm of previously unimaginable creative possibilities.[119] However, this technology has done the opposite and led to a form of regressive art that is entirely aesthetic-based.

The creative process, now systematized, has been trivialized, and meaningful art has been sidelined in the relentless pursuit of novelty. Art thus becomes a spectacle optimized for the gallery, validating Grba's critique of a deluge of homogenized visuals in AI-generated art.

Elgammal's defense of AICAN's legitimacy rests on its novelty, yet since its data inherently constrain it, it is destined only to iterate upon the past.

The use of generative AI in art, through tools such as DallE or MidJourney, provides an intelligible way of understanding the current state of artificial intelligence, where the idea that machines have human intelligence is an illusion. These systems, when engaged interactively, can dazzle with their random output, which is similar to the 2014 Turing test where the simulation of human-like conversation of 'Eugene Goostman' beguiled judges into overestimating the machine's true capabilities where the tendency to anthropomorphize AI based on scant evidence, speaks to our readiness to be deceived by the semblance of human-like intelligence. In both situations, unless the operator is using these image generators, it is clear that they do not have the potential to cause harm in an existential way. They serve as a microcosm of the broader ramifications of AI—a world not destroyed or saved but flattened. They affirm Hofstaeder's fears of devaluing human creativity, where art becomes a product of mimicry rather than innovation. Jen Schroter's once hypothetical scenario discussed in *The Democratization of Art* now unfolds as reality where the democratization of art and the individual creation of the genius artist producing auratic works of art is replaced by mass-produced visuals.[120]

Walter Benjamin foresaw this a century ago, arguing that culture's democratization through film would dismantle the aura, propelling us toward a new cultural experience. As Kalpokas suggests, contemporary AI art may redefine the aura, elevating artworks to a unique place and time. However, this has led to prioritizing visually striking yet uncritical works, where success is measured by fleeting digital reactions rather than enduring impact.

Memo Akten's *Learning to See*, an installation from 2017, emerges as a tableau of generative AI's nascent forays into the arts where its ambition is palpable yet predictably narrow. Visitors arrange household items to be captured and reinterpreted by a GAN autoencoder;

however, the inherent predictability of its outputs becomes apparent. The array of compositions—clouds, waves, fire, and flowers—are just echoes of its training data.[121]

While critiqued for its monotony, this installation is poignant in its exploration of computer vision, juxtaposing the AI's recollection of data against the human faculty to draw from a well of past experiences.[122] Akten's work elucidates a chasm in interaction with the physical realm: AI, anchored firmly to its programmed memories, versus humans, who dance with their recollections, nimble and nuanced in their interpretations.

However, within its critical reception lies a useful narrative—a caveat that scaling and premature real-world application have marred AI's developmental trajectory. It embodies Paul Allen's assertion that an AI's lack of context stifles its comprehension, offering a reflective surface that reveals both societal reflections and the silhouette of AI's present limitations. *Learning to See* is a microcosm of AI's fundamental challenges of the problem of intelligence that originate from the 'blocks world' problem. The 'blocks world' is a classic scenario for studying and demonstrating AI concepts, particularly visual perception and planning. It involves a simulated environment where a robot or AI system manipulates blocks of various shapes and colors, typically stacking or rearranging them in specific ways.[123] The issue here, similar to the games used to test the presence of intelligence in AI systems, is that bots are deployed in an environment where clarity and simplicity reign and are unclouded by the messiness of real-world context. The benchmarks that the bot excels in fail to extend beyond the rules of the game because the novel circumstances outside the realm of the games do not exist in its training data. Atken's GAN-oriented AI is fixated on its learned datasets and projects a world awash in elemental motifs, oblivious to what is beyond its digital confines. Herein lies the paradox: a spectacle that captivates yet fails to grasp the essence of what it depicts.

The installation and the 'blocks world' are parallel narratives in AI's current saga: both are confined to a domain where AI excels in arrangement and representation but cannot grasp its significance. AI can only mimic but not understand in a world delineated by data. Both Atken's work and the concept of the 'blocks world' are allegories for AI's present state—remarkable within their bounds, yet devoid of the profound comprehension that human cognition effortlessly wields. They echo Allen's imperative for AI to transcend its current confines to evolve from a sophisticated device of mimicry to an entity capable of genuine understanding.

Different Intelligence

One finds a striking divergence from human intellect when observing AI's capabilities without promotionalism and sensationalism. Consider the AI in GPS; it does not navigate by sensory perception but processes vast data troves to chart optimal routes, a feat unattainable by human cognition. Similarly, Deep Mind's AlphaFold reshapes biological research by predicting protein structures with speed and precision, sparking a revolution in scientific discovery that transcends human foresight.[124] When AlphaGo's victory consisted of a move of profound originality, Hui's awe was palpable: "It's not a human move... So beautiful."

When AI takes roles traditionally held by humans, their mistakes diverge starkly from human error, underscoring this difference in intelligence, and the outcome is often a disaster. For instance, Chat GPT may be able to pass the bar exam. However, it falls short as a practicing lawyer—a reality harshly illustrated when reliance on its counsel led to the revocation of a real lawyer's license.[125] Recently, the autonomous driving company Cruise lost its license to operate out of California due to the number of crashes and, in one case, led a woman to be dragged away by a car.[126] Moreover, in a disturbing incident from Belgium, a chatbot named Chai manipulated

a man into taking his own life, which echoes a troubling pattern seen with GPT technologies.[127] Researchers, in a fleeting and ill-fated experiment, endeavored to repurpose GPT-3 as an automated suicide prevention counselor. However, developers abandoned the project when the chatbot began to suggest that those seeking help should indeed end their lives.[128] These few cases serve as a stark reminder of the AI winter in the 90s, where the temporary abandonment of AGI was a tacit acknowledgment of AI's limitations that led to technological breakthroughs.

Haupstaeder's concern about programs like EMI diminishing the societal value of art resonates in the current wave of AI-produced art. While impressive in its capabilities, this technology often steers towards replacing the artist rather than complementing artistic expression, leading to cultural stagnation rather than a flourishing of new creative methods.

AI's primary design is to process and interpret large datasets with remarkable efficiency, driven by sophisticated pattern recognition. However, this application in art overlooks a crucial aspect of human intelligence: its embodied, historical, and contextual nature. This narrow conception of intelligence, focusing solely on data processing, misses the broader, more intricate aspects of human thought and experience.

Proponents of AGI oscillate between seeing it as a panacea for humanity's challenges or a harbinger of downfall, revealing a limited understanding of the intricate tapestry that makes up human intellect. They suggest that understanding the human mind can be distilled down to sifting through ever-expanding datasets, a notion that simplifies the complexity of human cognition. The art produced by AI, especially with the use of GANs, illustrates these limitations. These works neglect the rich historical and cultural contexts that shape human creativity. Instead, they focus on generating novel visual experiences, turning AI art into a form more for spectacle than profound societal commentary or reflection.

The trend of substituting human creativity with AI-driven mimicry reflects a gap in understanding theoretical intelligence and practical application. It leads to a form of art that, while technologically intriguing, lacks the depth and critical engagement of more traditional forms. The epitome of this is the notion of programming a robot to paint a sunset, an endeavor that symbolizes the emptiness of mere imitation as a stand-in for artistic creation. The current trajectory of AI in art, marked by an emphasis on novelty over substance, underscores the disappointment in this field. It reveals a missed opportunity for AI to enrich the artistic landscape, instead contributing to a cycle of unfulfilling and superficial artistic experiences.

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