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A Brave New World: Maneuvering the Post-Digital Art Market

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Abstract: The digital revolution has launched myriad new technologies in the field of art and cultural heritage law, including digital art, NFTs (non-fungible tokens), artificial intelligence (AI)-generated art, virtual reality and reality augmentation, online viewing rooms and auctions, holograms, immersive experiences, and more. As a $67.8 billion industry, the art market is a global driver of innovation, international collaboration, and national economies, given its cross-border transactions. However, given the extremely rapid development of these new technologies, regulators have struggled to keep pace and implement legal measures that are fit for purpose in this field. Limited oversight has resulted in several claims that have the potential to change the legal landscape. For instance, claims over the theft/misappropriation of NFTs and the related fraud and money laundering that may ensue, as well as a recent class action copyright infringement suit against the creators of a popular AI algorithm and infringement claims over immersive installation and light technologies, demonstrate how new ways of thinking are required to assess cases involving digital property (distinguished from other types of non-tangible property). Moreover, the US Supreme Court has issued a landmark ruling on fair use within the copyright context, which will be relied upon in the future to determine whether (and to what extent) the appropriation of existing copyrighted material is permitted. This includes both the digital use of physical artworks and the use of born-digital works. Although jurisprudential decisions are made on a case-by-case basis, factual patterns involving online media, digital art, and related technologies could serve as guidance for legislators and other decision-makers when considering what limits should be imposed on Web 3.0. This article will focus on recent US-based claims and regulations and dovetail with existing art market regulations in this jurisdiction (e.g., anti-money-laundering statutes) to determine their impact on new technologies, whether directly or indirectly. Finally, the article highlights ongoing trends and preoccupations to provide an overview of the shifting legal landscape.

Keywords: art market; digital art; new technologies; artificial intelligence; copyright law

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1. Introduction

Both the art market and technological developments have undergone rapid changes over the past few years. In an increasingly globalized and technologically advanced world, it is now possible to engage in almost instantaneous transactions and communications with people thousands of miles away. This includes the sale of physical and digital art, where purchasers can view, buy, and receive their goods online without in-person interactions or inspections. However, with billions of dollars funneled through the art market annually and the popularity of new forms of art that intersect with technology (e.g., NFTs and artificial intelligence/AI), it is necessary to examine how such goods—and, by extension, consumers and market participants—are protected. The global art market is currently valued at $67.8 billion, representing a strong increase from both post- and pre-pandemic levels. In particular, the US has demonstrated "one of the most robust recoveries of all the major markets", having experienced continued growth since 2021 to reach $30.2 billion, its highest level to date (McAndrew 2023, p. 17). The US has maintained its top spot in the art market by relying on industry self-regulation and the fair use copyright doctrine to incentivize creators. But these protections do not necessarily have a seamless application

in the digital realm, as artists are left vulnerable to infringement through unauthorized copying, false endorsement, fraud, and third-party derivative works. Regulators have also begun to pay attention to the ways in which digital art, particularly non-fungible tokens (NFTs), can be used as vehicles for fraudulent activity such as insider trading and money laundering. The present article examines the interactions between the art market and technology in the US to ascertain whether current legislation and regulations are fit for purpose in the burgeoning post-digital world.

Previously, the art market existed in its own rarified sphere, where industry insiders—art collectors, galleries, and dealers—operated discreetly, away from the public eye. Now, the art market has become a fixture in the social consciousness after receiving mainstream attention. The names and work of blockbuster artists such as Banksy are relatively commonplace and receive media coverage by outlets like CNN and The New York Times. This indicates that there is an increased public awareness of the art market and its interactions with everyday life.[1] It is not far-fetched to attribute this change to new technologies, particularly the Internet, as information can be shared "virally". But, as the art market and digital mechanisms have proliferated in tandem, it has become apparent that new forms of legislation and regulation are needed to ensure that transactions are carried out responsibly and both artists and consumers remain protected.

The present article discusses art-market-related regulatory attempts in the US while considering recent case law on copyright fair use and artificial intelligence (AI), which are poised to become the main contenders for legal claims in this sphere. This article is one of the first to analyze these developments within a wider art market framework. Legislation and regulation must both take into account the peculiarities of the art market and how it has traditionally operated in the physical space when imposing controls on artwork traversing the digital space. Furthermore, the concept of transformativeness in copyright doctrine, which is unique to the US, was recently analyzed in a hallmark case before the highest court in the land (the Supreme Court of the United States). This is one of the factors courts use to determine fair use of original material, and there is a wealth of jurisprudential analysis that could be applied—and even extended—to proliferating forms of digital art. However, AI art has its own challenges, as a settled body of law based on opinions from the Copyright Office and federal courts indicate that works do not qualify for copyright protection unless there is a substantial amount of human input. Given that digital art and technologies intersecting with the art market continue to develop at a rapid pace, and with limited case law that addresses the rights and responsibilities in this area, it is crucial to examine how existing measures can be adapted to the current state of affairs and how effective new provisions can be developed.

The following section examines the interactions between technology and the art market, focusing on the development of Web 3.0 and its potential to revolutionize the way in which art is conceived of and valued.

2. Web 3.0 and the Art Market

As argued in a previous article (Quiñones Vilá 2021), global society is currently inhabiting a post-digital world where Internet usage and reliance on online tools in daily life are not only prevalent, but also expected. This has resulted in considerable changes to the ways in which tangible and intangible property rights are conceived. New technologies and their offshoots (e.g., social media and apps) ushered in the nascent Web 3.0 age, where "[a]dvances in technology and shifts in culture have the ability to create an environment that is different rather than merely a faster and better-rendered version of what has gone before" (Garon 2022, p. 167). In lay terms, this means that there are greater overlaps between the physical and the digital than ever before, and ownership of digital assets is seen as equally valid to ownership of physical assets (described in more detail below). The current "centralized, algorithmically mediated new media marketplace" derives from the Web 2.0 model, where global conglomerates (e.g., Amazon, Facebook, and Google) dominate the "digital industrial age" through advertising revenue and the "corporate management of

public content". Web 3.0 will theoretically turn users from "passive consumers to active creators", democratizing the access to and use of information through decentralization and the participation by diverse contributors (Garon 2022, pp. 165–67, 176–78).

The metaverse is a key example of this trend. According to McKinsey, the metaverse is "the emerging 3-D-enabled digital space that uses virtual reality, augmented reality, and other advanced internet and semiconductor technology to allow people to have lifelike personal and business experiences online". This means that the metaverse is essentially a viable alternative to in-person interactions and transactions. So far, investors have poured over $120 billion into metaverse technologies, with the potential to reach $5 trillion by 2030. Given the lucrative opportunities to develop digital technologies and extend their reach, the metaverse is poised to gain an even greater foothold in everyday life. While the basic tenets of the metaverse—a sense of immersion, interaction in real time, and user agency—can already be observed, its true apotheosis—platforms and devices that work seamlessly with each other—has yet to arrive, mainly due to a lack of sufficiently advanced technology. Nonetheless, today's metaverse serves to illustrate how users can act as stakeholders in this community, developing content and experiences through platforms and apps, as well as interacting with other users through tools that manage digital identity and affect the economy (e.g., cryptocurrency and online payment alternatives such as PayPal and Venmo). Experts agree that the metaverse is not a passing fad, but rather a permanent addition to the digital realm (McKinsey & Company 2022).

At first glance, the metaverse and the art market do not appear to have much in common. Although the art market has become a global powerhouse characterized by blockbuster sales and international collectors, the impression it leaves in the mind of outside observers is likely that of traditional handshake deals and physical luxury, rather than technological innovation. Nonetheless, the art market has become increasingly enmeshed with the financial sector over the past few decades, with commercialization as the dominant force driving the multi-billion-dollar industry (Quiñones Vilá 2021, p. 4). As a result, it is susceptible to trends and influence-based marketing, much like generic online consumers. Moreover, in recent years, the art market has begun to fully embrace the digital sphere. While this process was already underway before the COVID-19 pandemic occurred in 2020, extensive lockdowns, staff redundancies, and dwindling funds forced cultural institutions and art businesses to shift and adopt long-distance solutions through the use of technology. Although the art market is famously face-to-face and consumer-oriented, with networking at art fairs (e.g., TEFAF and Frieze) and other social events seen as essential for developing relationships between dealers and collectors, this approach required re-evaluation once such contact posed a deadly risk.

In fact, it seems that the pandemic forcibly propelled the art market into the digital realm, with online sales reaching "an historic peak of $12.4 billion in 2020, doubling in size year-on-year as the pandemic restricted offline channels and events. Growth continued in 2021 with sales reaching $13.3 billion, an increase of 7%. . . Most businesses maintained digital sales and programs alongside their gradual return to live sales and exhibitions" (McAndrew 2023, p. 30). Successful initiatives included online viewing rooms (OVRs), which allow prospective buyers to engage with the objects (e.g., through superzoom) and obtain expert information on their aesthetic and economic qualities, granting users more transparency on the availability and costs (Indrisek 2019; Schneider 2020). Although online sales fell to $11 billion in 2022 as live events and sales once again became the norm, this still represents an 85% increase from 2019's pre-pandemic levels (McAndrew 2023, p. 30). Technology and digital art were also crucial for the art and culture sector's post-pandemic recovery. Social media campaigns and a greater online presence allowed cultural institutions to develop visual content and capitalize on public interest, which then translated to real-world gains (Quiñones Vilá 2020, p. 187). According to a report by the International Council of Museums (ICOM), most museums enhanced their digital activities and increased their social media participation throughout the pandemic, resulting in a "lasting impact on the way cultural institutions communicate with their audiences" (ICOM

2020, pp. 2, 10). Although the art world was historically slow to adapt to new technology, it is now "being forced to reckon with the metaverse" in the wake of COVID-19 (Noh et al. 2022, pp. 315–16).

There are several recent examples of art market/technology overlaps. In May 2023, Sotheby's auction house announced that it was entering the second phase of its Metaverse project, originally launched in autumn 2021 as part of its "aggressive courtship" of collectors seeking blue-chip digital works. Shortly after its inception, the site hosted its first auction of digital art and NFTs (non-fungible tokens), netting $18.6 million in sales. Other sales of individual NFT collections have followed. Now, the platform will operate entirely on-chain, allowing direct peer-to-peer primary and secondary market transactions. Primary market transactions consist of direct sales between artists and purchasers, while secondary market transactions consist of subsequent sales. Unlike other NFT marketplaces, Sotheby's will only list works from specific artists to guarantee quality and enforce artist royalties. It is reported that, to date, Sotheby's has generated over $100 million in NFT sales through its ventures, and the auction house remains "fully committed" to continuing with Web 3.0 (Escalante-De Mattei 2023b; Whiddington 2023a). Furthermore, the purchasing power of younger generations and their interest in digital art cannot be overlooked. In June 2023, an auction of 37 NFTs once belonging to a crypto hedge fund, announced as the "largest ever live sale of digital art" and expected to reach over $5 million, netted $11 million. Sotheby's employees commented that it was the youngest audience ever seen in the salesroom, with many first-time bidders attending (Small 2023). An earlier sale of the "Grails" NFT collection exceeded estimates and netted $6 million, demonstrating collectors' continued appetite for generative art (Whiddington 2023b). Christie's auction house has also dabbled in the technoverse. In 2022, it deployed hologram technology to display one of Edgar Degas's bronze ballerina sculptures in previews at overseas locations. This was viewed as a viable alternative to potentially risky and expensive international shipping costs. Technology company Proto provided the software and display cases, which produce lifelike, three-dimensional displays that allow viewers to examine the work in detail. The units can be transported easily, and holographic reproductions can be viewed anywhere in the world as long as the Proto device is present. This could significantly impact how art is viewed and displayed in the future, particularly at art fairs and auctions (Dafoe 2022; Cassady 2022). It further demonstrates how digital reproductions of artwork are increasingly viewed as legitimate alternatives to physical works, not merely as lifelike stand-ins until the "real" version can be obtained.

Artists have also used new technologies to create innovative artworks. In March 2020, popular contemporary artist KAWS launched Expanded Holiday, which exhibited one of his Companion sculptures in 12 locations around the world simultaneously. Using an augmented reality (AR) smartphone app, users could view the work and share it simultaneously on social media. AR allowed the artwork to be placed in front of or behind objects while appearing fully three-dimensional and grounded in space. KAWS followed this experiment with an exhibition titled NEW FICTION at the Serpentine Gallery in London, which was a hybrid show. In addition to physical sculptures, an app produced digital works that appeared on empty plinths in the gallery as AR sculptures, including one above the entrance to the building. The app further allowed users to place the works in public spaces nearby or in their own homes, effectively bringing the artwork along with them. They could even lease or purchase AR Companions (Palumbo 2020). KAWS stated: "I'm interested in all these outlets because I love the idea of interacting with people in these different ways, in very candid ways... It doesn't need to be a big painting on the wall. It could be any form. That's very inclusive, and I honestly think it's better for the work" (Christie's 2022). Immersive art installations showcasing works by deceased artists, such as Claude Monet, Vincent Van Gogh, and Frida Kahlo, have also become extremely popular amongst audiences. These installations use multimedia tools, digital art, and physical props to engage visitors and immerse them in the artwork as part of a sensory experience, including sights, smells, and sounds.[2] Both types of exhibitions blur the line between the

physical and digital and allow visitors to continue experiencing the artwork after they exit the space (notably through social media interactions).

Not all art market participants are so keen to embrace the digital, however. An Artnet correspondent visiting the Frieze New York Art Fair in May 2023 noted: "Selling new-media art is a daring proposition in the best of times, of course—but the near invisibility of references to present-day tech at this event may be seen as art playing it safe in the face of economic jitters, or stressing its most tried-and-true, embodied pleasures against the specter of all-destroying A.I." (B. Davis 2023). The tension between welcoming (and exploiting) cutting-edge technology and concern over the unknown ramifications of the same are at the heart of ongoing developments in the US. Legal and regulatory issues, particularly in the field of copyright, are discussed further below.

Having established the relevant context for this article, the following section examines US copyright law and recent copyright developments applicable to the art market.

3. US Copyright Law and the Limits of Fair Use

According to the Art Basel and UBS 2023 Art Market Report, the US's share of sales by value increased by 2% year-on-year, reaching 45% in 2022. The US art market also experienced "one of the most robust recoveries of all major markets" to reach $30.2 billion, its highest level to date. Given that nearly half of global art market sales take place in the US (McAndrew 2023, p. 17), and New York recently accounted for 15% of the national caseload in copyright filings (U.S. Courts 2020), the importance of case law from this jurisdiction cannot be overstated. Copyright claims are governed exclusively by federal law (under the Constitution and 1976 Copyright Act)[3] interpreted by federal courts, as well as determinations issued by the US Copyright Office, a federal government agency. While artists' moral rights in the US are limited to works of visual art created since 1990,[4] copyright protection has been a mainstay of the US legal system since the Constitution was drafted in the late 18th century. As a mercantile society that became independent from the most powerful commercial nation in the world at the time, the government felt that it was crucial to stimulate the progress of science and the arts by incentivizing authors to create and protecting their work.[5] This is the core purpose of copyright, which grants authors the exclusive right to exploit their works through reproduction, derivative works, sale, loan, performance, and other forms of economic benefit.[6] Copyright protection subsists in "original works of authorship fixed in any tangible medium of expression. . . from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device". This includes literary, musical, dramatic, pictorial, graphic, audiovisual, architectural, and choreographic works. Copyright protection arises from the moment a work is created, but, in order to qualify, it must be an original work of creative expression, fixed in a tangible medium, with more than a transitory duration.[7]

However, copyright protection is not absolute. There are exceptions, known as fair use, which serve as a defense to copyright infringement. Such exceptions include criticism, comment, news reporting, educational use (e.g., teaching), scholarship, or research. The Copyright Act establishes the following factors to be used by courts when determining fair use: (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work.[8] An additional concept, "transformativeness", has been developed under the first factor and is often seen as definitive in the fair use analysis. In order to qualify as transformative, a secondary work must "ad[d] something new, with a further purpose or different character" to the original.[9] Likewise, if the works are substantially similar, the possibility of fair use decreases.

Fair use is a cornerstone of copyright enforcement in the US. The Copyright Office has even created a Fair Use Index, compiling judicial decisions with the aim of "mak[ing] the principles and application of fair use more accessible and understandable to the public".[10]

Various fair use cases have impacted the art market. For instance, in *Cariou v. Prince*,[11] the Court of Appeals for the Second Circuit held that appropriation artist Richard Prince's modification of Rastafarian photographs by Patrick Cariou was fair use because they would be considered transformative by a reasonable observer, given their new aesthetic. Prince had modified the original photographs by enlarging, blurring, or sharpening them, adding elements and compositing multiple photographs with other works. Notably, the Second Circuit reversed the previous ruling by the district court, which had found that Prince's work was not transformative because he failed to comment upon the original works. As a result, artists adding new expression, character, or aesthetics to an existing work became shielded from copyright infringement by the fair use defense without the need to prove commentary on the original. While transformativeness is determined on a case-by-case basis, for the past decade, *Cariou v. Prince* was seen as the gold standard for fair use cases.

However, a case directly impacting the US's fair use legal landscape (Legal Information Institute (2022), *Andy Warhol Foundation for the Visual Arts, Inc. v. Goldsmith et al*.[12]) was just resolved in 2023. For the past six years, attorneys and art market participants eagerly awaited a final decision over whether a work by renowned pop artist Andy Warhol infringed copyright in a photograph taken by Lynn Goldsmith. In brief, the facts are as follows: In 1981, Goldsmith, a professional photographer, took a photograph of up-and-coming musician Prince. Years later, when the singer's popularity had taken off, magazine Vanity Fair approached Goldsmith to license her photograph with the intention of commissioning a work based on it. Goldsmith agreed, and received both payment and credit for her work. Notably, the license's terms stipulated that the use of the photograph would be for "one time" only. Vanity Fair then commissioned an illustration from Warhol using the photograph as an "artist reference". This work was published in the November 1984 issue of the magazine. Unbeknownst to Goldsmith, Warhol created 15 additional works based on her photograph ("Prince Series"). One of these works ("Orange Prince") was licensed by Condé Nast, Vanity Fair's parent company, for a retrospective issue featuring Prince after his death in 2016. The license was issued by the Andy Warhol Foundation ("Foundation"), which received the intellectual property rights in Warhol's work after his death in 1987, in exchange for $10,000. Goldsmith was not notified, paid, or credited at this time. When Goldsmith saw Orange Prince on the cover of the 2016 issue, she notified the Foundation of her belief that this was copyright infringement. The Foundation filed a claim before the District Court in New York seeking a declaratory judgment of noninfringement or, in the alternative, that this qualified as fair use (Escalante-De Mattei and Solomon 2022).[13]

The District Court sided with the Foundation, holding that the Prince Series was transformative because "they have a different character, give Goldsmith's photograph a new expression, and employ new aesthetics with creative and communicative results distinct from Goldsmith". It found that the works were "immediately recognizable as a 'Warhol'" rather than as a photograph of Prince, changing the subject's regard from vulnerability to an iconic presentation and removing "nearly all . . . protectible elements", concluding that the market value for Goldsmith's work would not be affected.[14] The Second Circuit reversed and remanded, favoring Goldsmith. In particular, it stated that adding a new aesthetic or expression is not necessarily transformative; the relevant inquiry is "whether the secondary work's use of its source material is in service of a fundamentally different and new artistic purpose or character". Under this analysis, simply imposing a different style on the work is insufficient to qualify for fair use.[15] The Second Circuit further noted that the Foundation had "encroached on Goldsmith's protected market to license her photograph 'to publications for editorial purposes and to other artists to create derivative works'".[16] The overlap in purpose was significant. Finally, the court rejected the notion of a "celebrity-plagiarist privilege", whereby more famous artists with distinctive styles would be able to freely appropriate works from lesser-known authors.[17]

On 18 May 2023, the US Supreme Court ("SCOTUS") issued its ruling in the case, sending shockwaves across the art world. Despite high-level art market participants arguing that limiting the scope of fair use would have a negative effect on artists and

hinder creativity overall, such as The Robert Rauschenberg Foundation, Roy Liechtenstein Foundation, and the Brooklyn Museum,[18] the court ruled in favor of Goldsmith. In a 7–2 majority opinion delivered by Justice Sotomayor, it was held that the Foundation's licensing of Orange Prince to Condé Nast did not constitute fair use because the work had the same essential purpose as the original, which was to illustrate magazine stories about Prince. The use was also commercial in nature, which generally weighs against a finding of fair use.[19] It is important to note that this ruling has not eliminated fair use altogether, but rather set a higher threshold for artists and other third parties who use or appropriate pre-existing copyright-protected works, contrasting with earlier opinions heavily weighted towards transformativeness as standalone evidence of fair use.[20] The existing factors under the Copyright Act will continue to be used by courts to determine whether fair use applies, taking into account all the facts and circumstances of each case. SCOTUS even used other works by Warhol, such as his depictions of soup cans, as examples of transformative fair use. Nonetheless, allegations of transformativeness cannot be used as *carte blanche* to dispense with copyright protection; there must be some change with "critical bearing" on the original. Otherwise, greater weight will be given to the other factors, particularly commercial use.[21]

There are several points that should be considered here. First, SCOTUS specifically exempted the rest of Warhol's body of work from its analysis, focusing instead on a narrow instance: the Foundation's failure to pay Goldsmith a licensing fee for the use of *Orange Prince* licensed to Condé Nast for its 2016 retrospective issue.[22] The court knowingly declined to extend the scope of its decision, as this would open a Pandora's box of infringement claims, particularly for contemporary and digital artists. Even so, there is concern that this decision will "significantly limit the amount of borrowing and building on previous works that artists will engage in" (Miranda 2023). Second, the fact that Goldsmith had licensed her photograph for a single purpose, and that the original Warhol illustration was created pursuant to that license, appears to have played an important role for SCOTUS. This can be compared to another instance of appropriation by Warhol, where he used a photograph of hibiscus blossoms licensed to a magazine by Patricia Caulfield to create his *Flowers* series. Notably, the *Flowers* series were not intended to circulate in the same manner as the original Caulfield photograph, reaching a different market altogether (publishing versus visual art). Although this could have supported a finding of fair use, Warhol ultimately settled with Caufield, awarding her $6000 and royalties on future sales. As a result, there is no applicable case law governing the matter. It must be stressed that this case was filed in 1964, before the Copyright Act and its provisions on fair use were enacted. If it had been brought after 1976, but before this ruling, it is likely that the result would have favored Warhol and that his series would have been considered fair use (López 2022; Daley 2019). The Foundation's licensing of Orange Prince, which had a commercial purpose, was thus a key component of the court's analysis. Third, neither transformative use nor commercial purpose is dispositive for a finding of infringement on its own; both must be considered against each other, the circumstances of the case, and the remaining statutory factors. SCOTUS appears to have given greater weight to the commercial purpose of the Prince Series when compared to its transformativeness, although the dissenting opinion in the case criticizes the majority's "commercialism-trumps-creativity analysis".[23] Fourth, "fair use is an objective inquiry into what a user does with an original work, not an inquiry into the subjective intent of the user, or into the meaning or impression that an art critic or judge draws from a work".[24] This means that judges should not impose their own criteria on the aesthetic value of a work, limiting their analysis to the elements that have been altered. Finally, SCOTUS focused on the first statutory factor, leaving other issues unaddressed (Ewing 2023).

As the final determination in *Goldsmith* is so new, it has not yet been fully applied to artwork-related copyright claims before the courts. However, other lawsuits involving new technologies illustrate approaches and outcomes that could be applied to the art market. In November 2022, two open-source programmers filed a lawsuit against OpenAI, GitHub

Inc., and Microsoft Corp. over their AI coding tool Copilot, arguing that it was trained on their code without the proper license information or attribution.[25] Open AI is also behind the DALL-E 2 program, another machine-learning model, which allows users to create complex visual images from text prompts (Poritz 2022). A copyright-related ruling against OpenAI in the Copilot case would give artists ammunition to prevent their work from being used to train DALL-E without their consent; here, they would merely need to cite the relevant decision in a cease-and-desist letter rather than proceeding to file a claim in court—unless the fair use doctrine applies. For example, in *Authors Guild, Inc. v. Google, Inc.*, the Second Circuit affirmed the District Court's ruling that Google's manual scanning of millions of copyrighted books without a license in order to create its book search project constituted fair use because the purpose of the copying was "highly transformative, the public display of text is limited, and the revelations do not provide a significant market substitute for the protected aspects of the originals. Google's commercial nature and profit motivation do not justify denial of fair use". Notably, this court's analysis also relied on *Campbell v. Acuff-Rose*, as did SCOTUS in *Warhol v. Goldsmith*.[26] Here, the determining factor was not commercial use but market substitution. Based on this ruling, an artist could succeed on an infringement claim against works created by AI if they can prove that there is an overlap in the market between the original work and the secondary work. This could potentially apply to digital artworks created by human artists based on existing physical originals by other artists as well. Subsequently, in *Google LLC v. Oracle America, Inc.*,[27] SCOTUS ruled that Google's use of third-party code was fair use because Google only copied what was needed, it was destined for use in a different platform (smartphones rather than desktop and laptop computers), and the use was "distinct and different" from the original.[28] While copyright is more complex in the software context, which depends on open-source material and interoperability, these cases are nonetheless instructive. Courts will generally favor outcomes that "serv[e] copyright's goal of enriching public knowledge" and avoid those that "shrin[k] the protected market opportunities of the copyrighted work".[29]

In December 2022, SCOTUS asked the US Solicitor General to file a brief in a separate case that accuses Google of illegally scraping lyrics from the Genius song transcription website and posting them in its search results pages (*ML Genius Holdings LLC v. Google LLC*).[30] Genius alleges that Google's actions divert Internet traffic away from the Genius website, resulting in tens of millions of dollars in lost advertising revenue. However, since neither Genius nor Google own the copyright in the lyrics, the Second Circuit found that the Copyright Act pre-empted the suit.[31] It appears that SCOTUS may take a different view of the matter. If a decision is rendered in favor of Genius, it could open the door for third-party websites that use copyrighted material fairly (e.g., DeviantArt, an online art gallery where community members post their work) to enforce the rights of users, even though they are not the copyright holders or owners of the material.

Finally, the US Court of Appeals for the Ninth Circuit, based in San Francisco, established a legal standard known as the "server test",[32] which states that a website displaying a copyrighted work without authorization cannot be held liable for infringement if the work is digitally stored elsewhere (i.e., on a different server). For example, a blog containing an embedded post with a copyrighted photograph would not be liable because the photograph is not stored on the blog's servers, but rather on the server of the website where it was originally posted. In 2021, two photographers brought a class action suit against social media platform Instagram, challenging the use of its embed tool. Plaintiffs claim that this tool allows other websites to display posts without a license, thus enabling widespread copyright infringement.[33] The case was dismissed in the Northern District of California due to the Ninth Circuit's server test, but a New York judge rejected this precedent in a ruling over Instagram embeds in a news magazine article.[34] US case law can be either binding or persuasive. It is binding when precedent is established by upper courts; for example, federal District Courts must follow precedent established by Circuit Courts. The same

principle applies at the state level. Within any jurisdiction, the decision of one trial court is not binding on other trial courts, and decisions in one jurisdiction are not binding on courts in another jurisdiction. A precedent may be adopted by a court if no previous decisions on the issue exist within the jurisdiction (i.e., persuasive authority rather than binding authority). Here, the New York court was free to reject the California court precedent, because it was persuasive in nature.[35] Although the parties ultimately settled and the case did not go to trial, this initial decision could impact cases involving digital art shared across digital platforms and publications without crediting the author in the near future. The lack of uniform case law on these topics means that there is a possibility of widely varying results, unless SCOTUS or the courts of appeal issue a firm ruling. Given the wide online dissemination of digital art, the outcomes of copyright infringement cases involving tech companies, digital publications, and social media platforms will be significant for the art market.

The following section discusses issues particular to specific types of digital art, and how their legal treatment has evolved.

4. NFTs, AI, and the Digital Revolution

For the purposes of this article, the term "digital art" is used broadly to refer to works that are either born digital or have been transposed to a digital format. Although there are myriad forms of digital art, this article will focus on those that are most pertinent for the purposes of this article: works that are created or modified using artificial intelligence (AI), non-fungible tokens (NFTs), and immersive art installations (briefly). All these types of digital works touch upon copyright issues. Under US law, so long as a work is a fixed, original work of human creativity, it will obtain copyright protection from the moment of its creation. A work is considered fixed "when its embodiment is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration".[36] A work can have a temporary nature of a few seconds and still meet this requirement.[37] However, the US Copyright Office follows the principle that only works by human authors qualify for copyright protection and may be registered.[38] This specifically excludes "works produced by a machine or mere mechanical process that operates randomly or automatically without any creative input or intervention from a human author",[39] such as converting a work from analog to digital format; for example, transferring a film from VHS to DVD (U.S. Copyright Office 2021, §313.2). It is generally understood that NFTs qualify for copyright protection, but protections for AI art may vary.

NFTs have been the subject of much speculation and alarm, depending on whether the affected party is a seller, buyer, artist, or regular consumer. NFTs are unique digital assets created by recording ("minting") files on a blockchain. Each token is unique (non-fungible), and ownership is tracked on the blockchain according to smart contracts embedded in the programming code. Smart contracts are pieces of code that make up the computer program running the operation of an NFT. They use blockchain technology to verify and record the existence and ownership of digital assets: "The smart contract creates a registry entry on the blockchain that is understood in the NFT industry and crypto community to represent proof of ownership of the asset linked to the NFT, whether that be artwork, a piece of real estate, or other asset" (Murray 2023, p. 29). NFTs are not a type of cryptocurrency, although they are often purchased with this type of coin. NFTs can consist of images, videos, music, memes, tweets, highlights, and GIFs—generally, any type of collectible, including sports clips. NFTs raise interesting questions as to the nature of property ownership in the post-digital age: "The conceptualization of NFTs empowers artists, but also the investors with a powerful instrument to enforce their property rights about a digital good which makes them attractive to financial investors", and "represent a relevant class of assets of their own" (Horky et al. 2022, p. 1). As intangible assets, the very nature of NFTs "makes them flexible and adaptable to multiple uses" and they are not susceptible to the limitations placed on physical goods with respect to their transportability, fungibility, scalability, costs, reproduction, and enjoyment (Moro Visconti 2021, pp. 13–14). In other words, NFTs can

be created, disseminated, and viewed by millions of users simultaneously in real time, whereas physical works would require considerably more effort.

The distinction between tangible and intangible property is nonetheless important when considering NFTs. Unless expressly agreed upon, ownership of an NFT does not entitle the holder to retain or exploit the physical or digital asset the NFT is based on (e.g., artwork); it merely grants the purchaser ownership over the NFT itself: "An NFT is not the digital asset itself. If you buy the NFT for a piece of digital art, the NFT is not the image file. It is only the record of ownership or authenticity that's stored on the blockchain. The image file will be hosted elsewhere" (Goforth 2022, p. 779). Because blockchains operate on a decentralized model, the likelihood of hacking or theft is extremely low, as is the ability of third parties to modify information recorded on the blockchain. (However, it is not impossible; the information contained in the ledger is only as accurate as the information provided or the website storing the NFT could become defunct.) (Sharp 2022, pp. 644–46) In theory, this provides holders with transparent, immutable proof of ownership and provenance (i.e., the chain of ownership for the asset) over the NFT. Smart contracts can also be used to ensure artist royalties, giving them a percentage of future sales (usually ranging from 2.5–10%). For example, since the code in smart contracts is embedded in the NFT, if the code includes a royalty provision, the artist will receive a percentage of each subsequent sale each time the NFT is traded: "Whenever the NFT is resold on the secondary market, the smart contract automatically calculates the royalty fee based on the percentage set by the creator. It transfers the payment to the creator's wallet address [automatically]. The creator can earn ongoing income every time their NFT is resold, even if they only received payment for the initial sale". Since artists often struggle to properly monetize their work, this provision has been heralded as a "game-changer" that incentivizes artists to continue producing high-quality content and ensures that the value of the NFT is maintained over time (Umashankar 2023). In late 2022, the leading NFT marketplace OpenSea implemented a royalty enforcement tool applicable to new collections, which will be blacklisted from resale on marketplaces that do not honor artist royalties (Tan 2022).

The craze for NFTs is best understood as an extension of real-world consumer behavior, where scarcity (either real or manufactured), collectability, and authenticity drive buyer demand. Conversely, blockchain technology ensures a steady supply (Sharp 2022, pp. 654–55). The art world first took notice when an NFT of digital artist Beeple's work Everydays: The First 5000 Days was sold for $69 million at Christie's auction house in March 2021.[40] This sale spurred a frenzy of collector interest and million-dollar sales akin to an NFT "gold rush" (Trautman 2022, p. 365). The Crypto Punks collection has amounted to $2.4 billion in sales since its creation in 2017 and Pak's "Clock" was the second highest NFT sale ever recorded at $53.7 million in 2022, while art-based NFTs increased from 2% to 24% of sales between 2019 and 2020, reaching 65% in 2021 (Santillana Linares 2023). But NFTs remain susceptible to the vagaries of the market. Despite sales reaching a peak of $17 billion in January 2022, by September 2022, trading volumes had fallen 97% to $466 million as the result of a wider crypto crash and market saturation (Shukla 2022; McAndrew 2023, pp. 33–34). Overall sales of art-related NFTs reached $1.5 billion in 2022, which represents a 49% decline from 2021 but still counts as a significant increase from 2020 levels ($20 million). The "high liquidity, ease of access, and instant tradability of NFTs" that attracted speculative buyers has now cooled somewhat, although interest has not faded entirely. As the art trade "steadily adopt[s] some of the more important and long-term implications of Web3 and blockchain for their businesses", NFTs will continue to gain visibility (McAndrew 2023, pp. 34, 40). It has been noted that "NFTs appear to be establishing themselves as new alternative financial assets in the blockchain cosmos", with the potential to play a decisive role in shaping the art market (Horky et al. 2022, p. 7).

Creating an NFT based on a pre-existing work may violate the copyright in the underlying work as an unauthorized reproduction, display, or derivative work. Artists have reported unauthorized creations and sales of NFTs featuring their work (Beckett 2022), but enforcement of copyright in this context can prove challenging due to the overwhelm-

ing number of visual assets across the NFT landscape online. Moreover, the terms and conditions used by platforms and smart contracts do not always address intellectual property issues satisfactorily. The very nature of the Internet facilitates anonymity, allowing NFT owners to remain untraceable and appear in various marketplaces, exacerbating the situation (Noh et al. 2022, pp. 324–25). Other jurisdictions have made inroads into the thorny world of NFT regulation: a UK court has ruled that NFTs are legal property subject to interventions, such as injunctions,[41] and a Chinese court recently determined that online marketplaces are liable for copyright infringement involving NFTs traded on their platforms (Bridegan et al. 2022). The Hangzhou Internet Court ruled that purchasing and offering an NFT for sale is the copyright owner's right, ordering the platform to pay damages and "burn" the NFT (Kumar et al. 2022). However, no such precedent is available yet in the US, as most cases have either been settled or remain pending. A recent example is the dispute between director Quentin Tarantino and producer Miramax over the rights to create NFTs based on the film *Pulp Fiction*, which settled in September 2022. Had this case proceeded to trial, it could have established a model for future NFT copyright infringement lawsuits.[42] In theory, US copyright infringement disputes involving NFTs will follow established case law and principles, including limitations on fair use.

Trademark cases have proven more effective as a means of enforcement. In *Hermès International and Hermès of Paris, Inc. v. Mason Rothschild*, [43] the defendant Rothschild created faux-fur versions of the iconic Birkin bag (labelled "MetaBirkins") and sold them as a collection of 100 NFTs. Although Rothschild disclaimed any affiliation with Hermès, the luxury brand filed suit for trademark infringement and dilution, as well as cybersquatting. The court found Rothschild liable despite his freedom of expression claims, holding that there was a likelihood of consumer confusion (Greenberger 2023c; Robertson 2023; Thompson 2023). In April 2023, Yuga Labs, a company that hosts the popular Bored Ape Yacht Club NFT collection, prevailed against artists that released a copycat collection. Although the artists claimed that their work was satirical in nature, the court held that this constituted trademark infringement.[44] In both cases, copyright law was not considered.

Moral rights and public rights may also be involved, depending on the jurisdiction. For instance, in 2021, the Uffizi Gallery minted and sold an NFT of Michelangelo's *Doni Tondo* for €140,000 and announced plans for further NFTs based on works in its collection—before the Italian government put a stop to this activity, citing the unknown risks of such technology. As a public institution, the Uffizi was bound by this pronouncement (Escalante-De Mattei 2022b). A businessman is currently under investigation by the Mexican government after seemingly destroying an original Frida Kahlo drawing (by lighting it on fire in a martini glass) to promote its permanent transition to an NFT and immortality in the metaverse. Kahlo's entire body of work is protected as artistic monuments under Mexican law, meaning that this destruction could be considered a crime (Feldman 2022). Other publicity stunts have prompted backlash, including the livestreamed burning of an original work by Banksy to "cynically" promote an NFT sale (for £274,000) (Criddle 2021) and the attempted sale of an NFT collection based on paintings from famous institutions by a collective named Global Art Museum (GAM). This was widely criticized as an "art heist", whereby GAM took advantage of the museums' open data policies. GAM ultimately walked back the sale and claimed it was part of a "social experiment" (Cascone 2021).

NFTs thus provide an illustration of how art market principles can be applied to, and thrive in, a Web3 environment. The use of artificial intelligence to create art has also become widespread, having experienced a recent boom in the marketplace. In 2018, Christie's auctioned a computer-generated artwork by art collective Obvious titled Edmond de Bellamy.[45] The painting was the result of self-taught algorithms fed with thousands of images of portraits. The final sale price of $432,500 shattered records as well as pre-sale estimates of $8000–11,000, although later sales of AI work failed to reach these heights (Quiñones Vilá 2019). This seems poised to change. Over the past year, AI art generators have proliferated to such an extent that they have become nearly ubiquitous, with mesmerizing yet uncanny renderings populating social media feeds. In particular, selfie portraits created

using the Lensa app's "magic avatar" feature made the rounds in 2022, with over 5 million downloads worldwide (Ulea 2022). The seemingly unstoppable rise of AI art, and the money to be made from it, require firm standards to ensure that original creators are fairly compensated and acknowledged for their work.

First, it is important to understand how AI machine models operate: "Systems that use machine learning commonly train themselves on existing works and generate outputs based on previous learnings. In the case of AI-Generated Art [sic], the expert system analyses countless works of art based on artistic style and produces a similar output" (Dee 2018, p. 32). AI models typically use artificial neural networks to perform tasks according to an algorithm. Generative adversarial networks (GANs) use two simultaneously trained networks tasked with outperforming each other to "teach" the machine how to distinguish images generated by the first network and real images. Whereas older networks required thousands or even millions of images to train, GANs can use 100–300 real images (Gillotte 2020, pp. 2660–65). This is the type of network used to create Edmond de Bellamy. AI programs can learn by receiving feedback from either supervised or unsupervised learning. Supervised learning consists of labeled training data fed into the AI, which are then tasked with constructing an algorithm that accurately maps the input to the output, for example, the word "flower" (input) into images of flowers (output). In unsupervised learning, the AI independently observes patterns in the input data and refines its algorithm by comparing its performances over time (Gillotte 2020, pp. 2660–65). Projects like Google's Deep Dream and The Next Rembrandt serve as examples of generative AI art (Guadamuz 2020, pp. 3–5).

In March 2023, the Copyright Office issued guidance to "clarify its practices for examining and registering works containing material generated by the use of [AI] technology", due to the ongoing popularity of such works. The guidance reaffirms the human authorship requirement, but also recognizes that there are works utilizing AI which may be the result of an author's "own original mental conception, to which [they] gave visible form", which qualify for copyright protection. This is a case-by-case inquiry. The guidance further distinguishes between a generative AI receiving a prompt from a human and producing complex works in response, where the "'traditional elements of authorship' are determined and executed by the technology" (in this case, the AI technology is what determines the expressive elements of its output, not the putative human author) (see U.S. Copyright Office 2023), and a human modifying, selecting, or arranging AI-generated material in a creative way. The former work will not be protected by copyright or subject to registration, while the latter will be protected with respect to "the human-authored aspects of the work, which are 'independent of' and do 'not affect' the copyright status of the AI-generated material itself". Applicants are required to disclose the inclusion of AI-generated content and to provide a summary of their contributions to the work when filing for registration (see U.S. Copyright Office 2023).

This rationale was recently illustrated in practice. Previously, in 2018, Steven Thaler attempted to register a visual artwork titled A Recent Entrance to Paradise, which was described as "autonomously created by a computer algorithm running on a machine". The Copyright Office denied the application on the grounds that there was no human authorship, which is required to meet the originality threshold. Following several administrative appeals, the Office's Review Board issued a final determination in 2023 affirming the decision because the work was made "without any creative contribution from a human actor" (U.S. Copyright Office, Copyright Review Board 2022, p. 2; see also Moghadam 2022; Recker 2022). The Copyright Office declined to overturn longstanding precedent in this field, stemming from an 1884 SCOTUS case which requires a minimum amount of creativity to grant copyright protection.[46] Notably, Thaler's stated aim in seeking registration was not to protect the work from infringement, but rather to prove that machine-created works were eligible for copyright protection (Robertson 2022b).

In 2022, Thaler filed a lawsuit before the District Court in Washington DC to compel the Copyright Office to register his work.[47] The Copyright Office's determination could only be overturned if Thaler proved that the decision was made in an arbitrary or capricious

manner, as an abuse of discretion, or otherwise not in accordance with the law. Thaler relied on SCOTUS precedent stating that "technological changes must be considered when interpreting the Copyright Act", arguing that AI-generated works meet the purpose of copyright law in progressing the arts and sciences (Kinsella 2023a; Homen 2023). Because the Copyright Office's decision was made in keeping with earlier precedent requiring human authorship, and this is a long-standing principle of copyright law, it was unlikely that Thaler would succeed on the merits. It is also worth noting that Thaler allegedly modified his original claim that he had no involvement with the creation of the work, now stating that he provided instructions and directions to the AI, directly controls the AI, and that the AI only operates at Thaler's direction. This seems to indicate a tacit acknowledgement of the human authorship requirement and an attempt to downplay the machine's independence (Growcoot 2023; Chen 2023). In August 2023, the court ruled in favor of the Copyright Office and held that Thaler's work was not copyrightable. While the judge recognized that humanity is "approaching new frontiers in copyright" that pose challenging questions on authorship, a "guiding human hand" was required for copyright (W. Davis 2023). It is worth noting that Thaler advanced legal theories under which the copyright in the AI work would transfer to him as the computer's owner under the work-for-hire doctrine.[48] Thaler might have succeeded on these grounds in the UK, where a work produced by or with the assistance of a computer can be afforded copyright protection and the copyright will be owned by the person who enabled the generation or creation of the work.[49] Thaler plans to appeal the ruling but, as it stands, without legislative changes, the human authorship requirement remains a pivotal component of copyright protection and registration in AI cases before US courts (Estoesta 2022).

Earlier this year, a graphic novel titled *Zarya of the Dawn* by Kris Kashtanova which included AI-generated images as well as human-authored text was also submitted for registration. In February 2023, the Copyright Office determined that the work as a whole was copyrightable and could be registered, but that the individual images were not protected.[50] In doing so, it retracted an earlier decision granting copyright protection to the images, citing "incomplete information" in the original registration as justification, since Kashtanova had not disclosed that the images were AI-generated (Chen 2023; Edwards 2023; Escalante-De Mattei 2023c; Lawler 2023). This decision is seen as a partial victory for artists that use generative AI models, such as MidJourney, to create works (Brittain 2023b). In essence, if the Copyright Office determines that the author used AI as a tool and there was limited distance between the user's input and the finished product (output), then the work will be protected. This can be contrasted with the field of photography, where an external tool (camera) is used to generate an output. Photographs are generally eligible for protection because there is a modicum of creative decision making that the photographer engages in, such as choosing the subject, focus, angle, etc. (Analla 2023). Kashtanova has the option to request reconsideration from the Copyright Office. After two denials, the matter may then progress to federal court. However, this would likely be time-consuming and expensive. However, given the adjudication of Thaler's case, it is doubtful the claim would succeed unless Kashtanova was able demonstrate a higher degree of human decision making than Thaler.

Additional copyright disputes involving AI tools are currently ongoing. The most recent controversy involving AI-generated artwork revolves around the practice of "scraping", whereby data (including images) are pulled from across the Internet and used to train image-generating AI models (e.g., Stable Diffusion) (Maiberg 2023). This practice "frequently exploits legal loopholes in existing IP frameworks" (Zeilinger 2021, p. 54), and there are limited ways for creators to prevent their work from being used for such purposes. For instance, artists can remove their artwork from websites or only upload low-resolution images, but this negatively impacts their ability to obtain new commissions and make a living.

In the meantime, artists can use other tools to protect their work. A team of computer scientists at the University of Chicago have developed a software tool called "Glaze",

which cloaks images so that AI models are unable to scrape a work's defining features, thus preventing them from appropriating an artist's unique style. One of the scientists commented: "Artists really need this tool; the emotional impact and financial impact of this technology on them is quite real. . . We talked to teachers who were seeing students drop out of their class because they thought that there was no hope of the industry, and professional artists who are seeing their style ripped off left and right". Previously, the same research group developed Fawkes, an algorithm to cloak personal photographs to prevent their use in face recognition models. However, this proved insufficient when applied to artwork, as an artist's style is defined by a larger number of characteristics (brushstroke, color palette, shadowing, texture, etc.) (Mitchum 2023).

Interestingly, Glaze "us[es] AI against itself" to interrupt style transfer algorithms, identifying specific features and perturbing them "just enough to fool art-mimicking AI models, while leaving the original art almost unchanged to the naked eye". Generative AI systems interacting with Glaze produce "much less successful forgeries", even when trained on a combination of both cloaked and uncloaked images. Since scraping is a continuous process, Glaze will effectively poison the well and leave such tools unable to appropriate new data. The team is working on a downloadable version of Glaze that artists will be able to use at home before posting their work online (Mitchum 2023). This is a unique proposition where AI can be weaponized against copyright infringement. AI itself is neither good or bad, and, since it is clear that AI will not disappear anytime soon, artists should take advantage of this technology to protect their work while members of the art market and legal community advocate for greater regulatory controls.

Since this is an emerging area of law, there is often no firm precedent on the legality of such actions—but, where the data used as source material are created by humans, it will be copyright-protected and subject to enforcement, as discussed above (Vincent 2022). Legal challenges have already arisen in this context. In January 2023, a class action lawsuit was filed in San Francisco by three artists on behalf of the visual arts community, alleging that AI generators (including MidJourney) violate artist rights by scraping the web for images and using copyrighted works without crediting or compensating creators, and threatening their livelihoods (Vincent 2023a).[51] The complaint states: "The harm to artists is not hypothetical—works generated by A.I. Image Products 'in the style' of a particular artist are already sold on the internet, siphoning commissions from the artists themselves . . . [plaintiffs] seek to end this blatant and enormous infringement of their rights before their professions are eliminated by a computer program powered entirely by their hard work".[52] A representative for defendant Stability AI claims that scraping is fair use and that holding otherwise is a misunderstanding of the applicable technology and law, while the CEO of MidJourney commented: "To the extent that A.I.s are learning like people, it's sort of the same thing and if the images come out differently then it seems like it's fine" (Feldman 2023). This comment evidences a lack of understanding of how copyright law works and a dangerous conflation of human rights and machine rights. The defendants have asked the court to dismiss the claim (Brittain 2023a), but it is clear that a new "protocol of consent" needs to be developed in this context, as well as a wider discussion on the purpose of such tools and their wider use (Ulea 2022).

Although an argument supporting fair use in this context might have succeeded prior to the SCOTUS *Goldsmith* decision, it now seems unlikely that courts will view such appropriation in a favorable light, particularly since these companies are making a profit and any transformative use will be minimal, as it is produced/determined by the AI tool itself rather than humans. There is also a very real concern about human creativity being stifled, thus disincentivizing members of the artistic profession as a whole and undermining copyright law and constitutional protections. This even extends into other fields where human authors are being curtailed by companies' reliance on AI (e.g., ChatGPT), as evidenced by the current Writers' Guild strike (Shah 2023). Furthermore, and most importantly, AI is not a human being—it is a machine and, therefore, a tool, not a substitute for human ingenuity. The same parameters for fair use and transformativeness

do not apply. When weighing a work that was made by human creativity versus one that was produced mechanically using the former work as a guide, the Copyright Office (and, presumably, courts) will side with the human author, upholding decades of copyright law interpretation. Here, it is important to distinguish training systems versus generating content, as the latter will more likely be considered infringement due to its purpose (commercial rather than educational) (Vincent 2022).

In the meantime, the photograph licensing company Getty Images filed a separate lawsuit against Stability AI, alleging that the company copied 12 million images without authorization, "to benefit [its] commercial interests and to the detriment of content creators"(Vincent 2023b).[53] Prisma Labs, the creator of the Lensa app, is facing a lawsuit on the grounds of illegal collection of biometric data.[54] Other claims are sure to follow, as "[w]e are still in the Wild West days of this type of AI" (Sheng 2023). Until legislation is fit for purpose, and amidst companies' disregard for the wider legal implications of their technology, it is crucial for regulators to step in and maintain order.

5. Current US Regulatory Framework

Regulatory measures in the US have mainly focused on NFTs rather than other types of digital art, particularly due to their heightened risks of fraud, money laundering, consumer confusion, and links to cryptocurrency, which is undergoing increased scrutiny. It is worth noting that the art market's habitual lack of transparency has already been singled out by US legislators. A bipartisan Senate report published in July 2020 exposed the vulnerabilities of the art market to illicit activity, including the evasion of sanctions by Russian oligarchs, aided by high-profile auction houses. It is common practice for consigners to use intermediaries (agents or shell companies) in order to preserve their anonymity and for dealers to respect confidentiality. While this is not illegal in and of itself, it can lead to deficiencies in due diligence and AML reporting procedures. In the report, the art market was described as "the largest unregulated market" in the US (Grossman et al. 2021), leading to the enactment of a new anti-money laundering law which extends reporting obligations to antiquities dealers.[55]

In April 2023, the US Department of the Treasury ("Treasury") published a risk assessment on decentralized finance ("DeFi"), services exploring how these are being exploited by illicit actors to engage in criminal activity. The government is chiefly concerned with the potential of DeFi service providers to launder money through ransomware, theft, fraud, scams, and proliferation finance (Edgar et al. 2023). This follows an earlier report from February 2022 by the Treasury's Financial Crimes Enforcement Network ("FinCEN") discussing art-market-based financial risks. NFTs were identified as vehicles for potential money laundering due to the inherent ease in transferring digital assets nearly instantaneously; the lack of recorded transactions on a public ledger; the lack of uniformity in structure, ownership, and operation of platforms; and incentives to sell repeatedly during a short period of time; in addition to a lack of technical understanding amongst consumers and art market participants (U.S. Department of the Treasury 2022, pp. 26–27). Thus, regulators are aware of the risks these assets pose and their vulnerability to illicit activity.

NFTs may also qualify as commodities or securities depending on the circumstances, falling within the purview of the Commodity Futures Trading Commission (CFTC) and Securities Exchange Commission (SEC), respectively. Commodities consist of goods with contracts for future delivery. In December 2014, the Chairman of the CFTC opined that cryptocurrencies were commodities, and the agency has issued guidance on its regulation of virtual currencies. As assets with value that can be sold and converted into cryptocurrency, it is possible that NFTs fall within the scope of the CFTC's authority. Since it is not yet clear whether NFTs will be treated as fungible cryptoassets or distinct assets by the courts, this is a gray legislative and regulatory area (Goforth 2022, pp. 792–94). In order to qualify as securities, the NFTs in question must be marketed as an asset that will give a return on investment due to the efforts made by third parties (an investment contract). If the price appreciation for the NFT can be attributed solely to market factors, such as inflation,

then it will not be considered a security. This is known as the *Howey* test, established by SCOTUS in *SEC v. W.J. Howey Co.*, 328 U.S. 293 (1946). An interest will be classified as an investment contract under *Howey* if it satisfies the following elements: (1) There is an investment of money or something else of value; (2) in a common enterprise; (3) where the purchaser expects to receive profits; and (4) the expectation of profits is from the essential entrepreneurial efforts of others (See Goforth 2022, p. 784). The main criterion is whether a buyer reasonably expects a profit from the funds they have invested in a common enterprise. The SEC has stated that cryptoassets are considered securities under *Howey* and released an accompanying framework. NFTs may meet the elements of the *Howey* test, depending on the circumstances, for instance, where multiple purchasers acquire non-exclusive licenses and limited rights in the underlying asset motivated by the hope that their NFTs will increase in value. A practical effect of this application is that platforms facilitating the sale and secondary trade of NFTs will need to register with the SEC; otherwise, they risk breaking the law (Goforth 2022, pp. 783–90; Cointelegraph n.d.). Moreover, the Internal Revenue Service (IRS) has taken an interest in NFTs, which may be subject to taxation. While no formal guidance has yet been issued, the general consensus is that NFTs should be treated as collectibles, making them liable to capital gains tax and, potentially, sales tax (Rottermund et al. 2022, p. 5).

Authorities have already begun to crack down on NFT transactions involving fraudulent activity. In March 2022, two defendants (Ethan Nguyen and Andre Llacuna) were charged with conspiracy to commit wire fraud and money laundering in connection with a million-dollar scheme to defraud purchasers of NFTs advertised as "Frosties".[56] The defendants engaged in a "rug pull" scam, offering purchasers certain benefits alongside the NFTs, then shutting down the relevant website and transferring the cryptocurrency proceeds to various digital wallets under their control once the sales had been made. Investors were left with "empty pockets and no legitimate investment". Prior to their arrest, the defendants were planning to launch a second set of NFTs advertised as "Embers", which were expected to generate approximately $1.5 million (U.S. Attorney's Office for the Southern District of New York 2022b).

Shortly afterwards, in June 2022, a former employee of NFT marketplace OpenSea was charged in the first ever digital asset insider trading scheme.[57] Here, the defendant (Nathaniel Chastain) used confidential information to purchase dozens of NFTs in advance, knowing that they would be featured on the OpenSea homepage (and, therefore, increase in price). Chastain then sold the NFTs for 200–500% of the original price, concealing the fraud by conducting the transactions through anonymous OpenSea accounts and anonymous digital currency wallets (U.S. Attorney's Office for the Southern District of New York 2022a). In both cases, the maximum penalty is 20 years' imprisonment. In early May 2023, Chastain was found guilty despite his lawyers' attempts to distinguish his conduct from insider trading on the grounds that NFTs are not considered securities. However, the judge noted that insider trading applies to any misconduct involving the use of non-public information about an asset, and using that information to trade the asset or help another person do so (Escalante-De Mattei 2023a; Gatto 2022).

Finally, a group of collectors filed a lawsuit against Sotheby's over the auction house's alleged "misleading promotion" of Bored Ape Yacht Club (BAYC) NFTs as part of a larger scheme to defraud investors. The lawsuit also names Yuga Labs, the creator of the NFTs, as a main defendant.[58] With respect to Sotheby's, it sold 101 BAYC NFTs in an online auction in 2021, at the peak of the market, netting $24 million total. The pre-sale estimates were set at $12–18 million. The plaintiffs claim that Sotheby's artificially inflated the value of the NFTs and that its endorsement helped legitimize these assets for inexperienced collectors, making them more attractive to purchasers. In particular, although the undisclosed buyer of the NFTs was identified as a "traditional collector", it may have actually been FTX, the now-defunct cryptocurrency exchange (Porterfield 2023). This further demonstrates the entanglement between technology and the art market, and how established participants play a key role in issuing a "stamp of approval" for potentially risky ventures (Villa 2023).

The aforementioned NFT cases exemplify the application of existing (i.e., traditional) laws to new types of digital assets. Regardless of their recent popularity and emergence on the market, at their core, NFTs are still a type of property asset and may be regulated accordingly. However, the burden of protecting consumers and artists against illicit NFT activity has fallen largely on individuals themselves, as regulators have not yet caught up to the multiple scams that have arisen in this context, including sites imitating legitimate NFT platforms, fraudulent or counterfeit NFTs, impersonation of brands on social media, and fake giveaways (Goforth 2022, p. 776). It is also telling that OpenSea did not have clear policies in place prohibiting employees from trading in featured NFT artists or using confidential information in their trading until Chastain's misconduct was discovered. Platforms' *laissez faire* attitude towards criminal activity may be partly to blame for the Wild West of NFTs; after all, it is much easier to restrict behavior beforehand than attempt to rein it in once such patterns have become embedded in the system. Now that NFT cases are more high-profile, crackdowns on illicit activity seem imminent.

Regarding AI art, the legal landscape is much less settled, including data privacy concerns (Israel 2021). Aside from limited copyright protection, a David and Goliath battle is being fought between creators and users of AI tools. It is apparent that GAN AI models are threatening to displace artists and require clear regulatory and legislative boundaries to prevent copyright infringement. There are additional ethical concerns, as works are being used without authors' knowledge or consent, while technology companies remain unapologetic. Is it fair for the burden to be placed on creators to defend their work rather than for others to provide a justification for appropriating it? For example, an image-scraping tool called img2dataset attempts to scrape images from any existing website unless site owners actively opt out by placing tags on the site address. But website owners may not even be aware that these types of tools exist, and their images may be taken and used without permission before they realize what has happened. The creator of img2dataset has suggested that those who do not want their images to be used should shut down their websites altogether, but this is not feasible. Website owners who were targeted by img2dataset have had to purchase additional security measures to compensate for the "sustained attack" (Maiberg 2023).

In April 2023, a German photographer won the Creative category of the Sony World Photography award for an AI-generated image. The artist rejected the award and stated that his aim in submitting the work was to facilitate dialogue around artificially generated images, distinguishing them from photography as "different entities" that should not compete against each other (Kolirin 2023). The World Photography Organization was not impressed with this stunt and claimed to have been deliberately misled (Greenberger 2023b). A similar controversy occurred in August 2022, when a man who won first place at the Colorado State Fair's art competition (Jason Allen) revealed that the work had been created using text-to-image generator MidJourney. Allen suggested that the fair might include an AI subcategory for the digital art prize in the future but was otherwise not troubled by the results of the competition. He claimed that he wanted to "make a statement using artificial intelligence artwork" and stake a claim for artists, who he regards as complacent in the face of "the disruptive technology of open AI" (Escalante-De Mattei 2022a). However, in September 2022, the US Copyright Review Board issued a decision rejecting the work's registration due to Allen's extensive use of MidJourney (Greenberger 2023a). It appears that courts and the Copyright Office, rather than regulators, are defining the scope of intellectual property rights in this field.

To date, the US has lagged on digital regulation, and legislation has struggled to keep pace with the constant evolution of new technology. For instance, ChatGPT was estimated to have reached 100 million users just 2 months after launch according to a UBS study, making it the fastest-growing consumer application in history (Hu 2023). At the same time, the art market has also been relatively unregulated, with more stringent AML reporting measures only now being implemented. The overlap between these two areas has produced a shifting landscape, which leaves creators vulnerable to the unauthorized exploitation

of their work as third parties make significant profits. Existing laws can address certain challenges, rather than a complete overhaul of the legal framework, but enforcement is key. For newer forms of digital art, such as NFTs, additional oversight is required. Challenges related to the widespread use of NFTs include "the absence of industry-wide safety guidelines for agreements, ambiguity concerning intellectual property rights, scam factors linked with artist imitation, an openness that jeopardises consumer safety as well as confidentiality" (Sahni 2022, p. 657). Government agencies and judicial courts have a key role to play here, as they are equipped to render decisions that directly shape the landscape. In the case of illicit activity, heavy fines or other penalties can help dissuade potential criminal actors from similar offenses, while case law can provide guidance for lower courts, as well as recourse for artists. However, since solutions have not yet been applied uniformly, both new and existing problems will continue to arise as the market expands, "causing havoc", unless effective measures are implemented to curtail illicit activity (Sahni 2022, p. 657).

Other countries can serve as models to follow in this field. For instance, Spain has issued an official ruling that sales of NFTs qualify for Value Added Tax (VAT) as "electronically supplied services"—NFTs are, thus, taxed at a higher rate (21%) than artwork (10%) (Moscoso del Prado and Panizo 2022)—while the EU is currently developing the first comprehensive AI regulation (the AI Act). In particular, generative AI would be subject to transparency requirements, such as disclosing that the content was generated by AI, designing models to prevent them from generating illegal content, and publishing summaries of copyrighted data used to train models.[59] It remains to be seen whether the US will adopt similar standards, but ongoing trends indicate that a greater push for transparency in both the use of technological tools and art market transactions is desirable.

6. Conclusions

The expansion of the digital art market boom has revolutionized the way in which traditional property rights and concepts of ownership over tangible and intangible things are viewed, as well as what qualifies as human authorship and fair use in the copyright context. However, the lack of harmonization among existing laws, regulations, and judicial precedent have undermined their effectiveness in this context. The art market itself is a nearly $70 billion global industry, meaning that participants have a vested interest in maintaining its upward trajectory. Artists and creators operate at various ends of the spectrum, depending on whether they are able to harness new technologies for their benefit. NFTs and AI art pose both an opportunity and a threat in this context. On the one hand, the decentralized nature of blockchains and the accessibility of software tools can help artists expand their creativity and receive royalties through smart contracts. On the other hand, copyright infringement is rampant and extremely difficult to prevent; as the saying goes, "the internet is forever". The practice of "scraping" by AI tools is also a moral and legal gray area. While legal remedies are available, more robust enforcement is required. Regulators should devote greater amounts of time and resources to study emerging technologies and their impact on the art market beyond mere economic and financial considerations.

So far, AI artwork has not been scrutinized by US regulators to the same extent as NFTs. However, with the use of AI tools such as ChatGPT gaining prominence in everyday life, it is likely that attention will be given to this area sooner rather than later. US case law and agency decisions on copyright and fair use have made headway in this field, by stressing human authorship requirements and declining to lower standards for the appropriation of original works. As the next generation of infringement cases makes its way to the courts, it remains to be seen whether companies will be halted in their quest for technological dominance, or whether human artists will prevail. Nonetheless, it is clear that digital art, including NFTs and AI-generated works, are now part of the mainstream art world. These constantly evolving technologies require robust oversight to protect artists, users, consumers, purchasers, and platforms/marketplaces from digital predation. Oversight will also ensure fairness in how digital assets are transferred and utilized in the post-digital

world of Web3. Ultimately, the law should operate to stem the tide of infringement while incentivizing creators and ensuring the progress of arts and science, taking into account the increasingly digital environment in which we live.

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Notes

1 For a more in-depth analysis of media representations of the art market in recent years, see Quiñones Vilá (2020).
2 See Claude Monet: The Immersive Experience (https://monetexpo.com/, accessed on 20 May 2023); Van Gogh Exhibit: The Immersive Experience (https://vangoghexpo.com/, accessed on 20 May 2023); Immersive Frida Kahlo (https://www.immersive-frida.com/, accessed on 20 May 2023).
3 Pub. L. No. 94-553, 90 Stat. 2541, 19 October 1976, as amended. Cited as 17 U.S.C. §101 et seq.
4 Visual Artists Rights Act (VARA), Pub. L. 101–650, 17 U.S.C. §106A, 5 June 1990.
5 US Constitution Art. 1, Section 8, Clause 8.
6 Copyright Act, 17 U.S.C. §106.
7 Copyright Act, 17 U.S.C. §102(a).
8 Copyright Act, 17 U.S.C. §107.
9 *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569 (1994) p. 579.
10 https://www.copyright.gov/fair-use/, accessed on 20 May 2023.
11 714 F.3d 694 (2d Cir. 2013).
12 Case No. 21-869, 598 U.S. (18 May 2023) ("SCOTUS Decision").
13 See SCOTUS Decision at 1–2.
14 *Andy Warhol Foundation v. Goldsmith*, 382 F.Supp.3d 312 (SDNY 1 July 2019) ("District Court Decision") at 325–326 & 331.
15 *Andy Warhol Foundation v. Goldsmith*, 11 F.4th 26 (2d Cir. 26 March 2021) ("Second Circuit Decision") at 36–39 and 42.
16 SCOTUS Decision at 11, citing Second Circuit Decision at 48–51.
17 Second Circuit Decision at 43.
18 See Brief for The Robert Rauschenberg Foundation, Roy Liechtenstein Foundation, and Brooklyn Museum as *Amici Curiae* Supporting Petitioner.
19 See SCOTUS Decision at 13–20.
20 SCOTUS Decision at 3.
21 SCOTUS Decision at 3, citing *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569 (1994) at 580.
22 SCOTUS Decision at 21.
23 SCOTUS Decision, dissenting opinion at 19.
24 SCOTUS Decision at 5.
25 *John Does v. GitHub, Microsoft Corporation, OpenAI, Inc. et al.*, Case No. 3:22-cv-06823 (N.D. Cal. 2022).
26 721 F.3d 132 (2d Cir. 2015), 804 F.3d 202 (2d Cir. 2015); Slip Opinion at 46.
27 593 U.S. (2021), 141 S. Ct. 1183.
28 SCOTUS Decision at footnote 8, p. 20.
29 *Authors Guild v. Google* at 214.
30 Case No. 22-121 (SCOTUS 9 December 2022).
31 Case No. 20-3113 (2d Cir. 10 March 2022).
32 *Perfect 10 v. Amazon.com, Inc.*, 508 F.3d 1146 (9th Cir. 2007).
33 *Hunley v. Instagram LLC*, Case No. 21-cv-03778-CRB (N.D. Cal. 1 February 2022). See also (Brittain 2021).
34 *McGucken v. Newsweek LLC*, Case No. 19-cv-09617 (SDNY 21 March 2022). See also (Brittain 2022).
35 See https://www.law.cornell.edu/wex/case_law, accessed on 20 May 2023.
36 17 U.S.C. §101.
37 For instance, in the case of immersive art installations. A lawsuit brought by a Japanese art collective against a Los Angeles museum for copyright infringement has highlighted the fine line between imitation and appropriation: *Teamlab, Inc. v. Museum of*

Dream Space, LLC, Case No. 19-cv-06906 (C.D. Cal. 8 August 2019). Available online: https://www.courtlistener.com/docket/16035318/teamlab-inc-v-museum-of-dream-space-llc/, accessed on 20 May 2023. See also (Kinsella 2023b).

[38] "The U.S. Copyright Office will register an original work of authorship, provided that the work was created by a human being. The copyright law only protects the 'fruits of intellectual labor' that 'are founded in the creative powers of the mind'. . . the Office will refuse to register a claim if it determines that a human being did not create the work". (U.S. Copyright Office 2021, §306), The Human Authorship Element.

[39] *See* U.S. Copyright Office (2021) at §313.2, Works That Lack Human Authorship: "The crucial question is 'whether the 'work' is basically one of human authorship, with the computer [or other device] merely being an assisting instrument, or whether the traditional elements of authorship in the work . . . were actually conceived and executed not by man or by machine".

[40] Christie's lot information available online: https://onlineonly.christies.com/s/beeple-first-5000-days/beeple-b-1981-1/112924, accessed on 20 May 2023.

[41] *Osbourne v. Persons Unknown*, [2022] EWHC 1021 (Comm).

[42] *Miramax, LLC v. Quentin Tarantino*, Case No. 21-cv-08979 (C.D. Cal. 8 September 2022). See also (Robertson 2022a).

[43] Case No. 22-cv-384 (SDNY 2 February 2023).

[44] *Yuga Labs, Inc. v. Ripps et al.*, Case No. 23-00010 (D. Nev. 14 February 2023). See also (Akers 2023).

[45] Christie's lot information available online: https://www.christies.com/en/lot/lot-6166184, accessed on 20 May 2023.

[46] *Burrow-Giles Lithographic Company v. Sarony*, 111 U.S. 53 (1884); see also *Feist Publications, Inc. v. Rural Telephone Service Co., Inc.*, 499 U.S. 340 (1991).

[47] *Thaler v. Perlmutter*, Case No. 1:22-cv-01564-BAH (D. D. C. 10 January 2023) [Motion for Summary Judgment].

[48] *Google LLC v. Oracle Am., Inc.*, 141 S. Ct. 1183, 1197 (2021), cited in *Thaler* Motion for Summary Judgment at 9–10.

[49] Copyright, Designs and Patents Act 1988, Sec. 9(3).

[50] U.S. Copyright Office, *Determination on Registration of Zarya of the Dawn*.

[51] *Andersen v. Stability AI Ltd.*, Case No. 23-00201 (N.D. Cal. 13 January 2023) [Complaint]. See also (Feldman 2023).

[52] *Andersen* Complaint, ¶8 & 9.

[53] *Getty Images, Inc. v. Stability AI, Inc.*, Case No. 23-cv-00135 (D. Del. 3 February 2023).

[54] *Flora* et al. *v. Prisma Labs*, Case No. 23-cv-00680 (N.D. Cal. 15 February 2023) [Complaint]. See also (Dafoe 2023).

[55] The Anti-Money Laundering Act of 2020; see also Grossman et al. (2021).

[56] *US v. Ethan Nguyen and Andre Llacuna*, Case No. 22-mag-2478 (SDNY 15 March 2022) [Complaint].

[57] *US v. Nathaniel Chastain*, Case No. 22-crim-305 (SDNY 31 May 2022) [Indictment].

[58] Sotheby's was added to the existing class-action lawsuit *Real and Titcher v. Yuga Labs, Inc. et al.*, Case No. 2:22-cv-08909 (C.D. Cal. 8 December 2022) [Complaint].

[59] https://www.europarl.europa.eu/news/en/headlines/society/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence, accessed on 20 May 2023.

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