

# Questioning the NFT “Revolution” within the Art Ecosystem

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**Abstract:** Three years after the sensational debut of non-fungible tokens (NFTs) on the art scene, it seems timely to reflect on their presumed revolutionary attributes. The speculative fascination at the beginning has gradually given way to mixed outcomes, with hardly predictable future directions. However, once recontextualized in the art ecosystem and its value chain, one may question the ability of NFT technology to lead to radical changes. Our main argument is that although they offer perspectives that are worth considering regarding contracts, authors’ rights management, and provenance, blockchain-based technologies do not substantially modify the typical characteristics of the art world. Based on recent press articles and academic publications, we comment on the effects of this technology on producers (artists’ creative process and career development), intermediaries (art market gatekeepers), and consumers (quest for authenticity, collecting habits, and museum intervention in the art market). Our main conclusions suggest that NFTs perpetuate oversupply and job precarity in cyberenvironments and reinforce existing purchasing behaviors driven by the quest for authenticity and conspicuous consumption. Our goal is to mitigate some statements found in the literature and the press, especially regarding the democratization of the art market, and to help art market stakeholders approach this technology most objectively.

**Keywords:** NFT-secured art; authenticity; artists; intermediaries; collecting habits; museum practices



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## 1. Introduction

Non-fungible tokens (NFT) are a blockchain-based crypto-technology that has gained outstanding visibility during the COVID-19 pandemic. Although the origins of digital art date back to the early 1960s, its association with blockchain has had the effect of a bombshell in the art world, allowing anyone to issue, sell, and buy an NFT-secured piece of art. Through specialized platforms, artists can easily upload digital works and specify certain conditions—such as the percentage of their resale rights and number of sellable editions—before paying fees and issuing a unique tradeable numeric code. For the very first time, a code attached to metadata can provide buyers with proof of authenticity and ownership in the digital realm (Reinmoeller and Schmedders 2022). The possibility for artists and collectors to own digital assets is perceived as a significant advance in the art world, especially regarding the tracing of works’ provenance, fair remuneration, and intellectual property rights (Wilson et al. 2021; Nadini et al. 2021; Whitaker 2019). As a result, several authors envision NFT technology as a “radical innovation” (Wilson et al. 2021; Wang et al. 2021), a “paradigm shift,” and a “radical transformation of the art market” that is profoundly disrupting its traditional inner working (Hughes et al. 2019; Popescu 2021).

Despite receiving strong recent media coverage, NFTs are not a new topic in academic literature. As rightfully pointed out by Nadini et al. (2021), researchers from various disciplines—including economics, computer science, and law—have explored the potential of this technology to address issues related to copyright, as well as blockchain’s technical aspects, protocols, and regulations, with several papers providing a comprehensible

introduction to the complexity of NFTs (Wang et al. 2021; Salman and Abou Elnasr 2021). According to Frye (2022), NFTs can be defined as “digital assets that represent objects like art, collective, and in-game items. They are traded online, often with a cryptocurrency, and are generally encoded within smart contracts on a blockchain.” Wilson et al. (2021, p. 5) further specify that “each NFT sits on a block resembling a digital ledger that is secured through mathematical cryptographical algorithms and verified through blockchain processes.” Embedded in an NFT, the smart contract allows the owner to manage a set of information related to the ownership and transferability of the digital file, itself linked to the NFT.

Several authors have reflected on the transposition of this technology into the art field and anticipated some of its effects. Sidorova (2019) addresses the potential of cryptocurrencies, blockchain, and artificial intelligence for the art trade, reminding us that discussions and experiments on art and NFTs already occurred before the craze that followed the pandemic outbreak. Whitaker (2019) highlights three main areas in which blockchain technology is expected to make a difference in the art ecosystem: the blurring of the for-profit and non-profit sectors, changes in the ownership structure of art, and the potential for new forms of public and private support. Whitaker (2019, p. 21) particularly insists on the fact that “blockchain holds the potential to tip the role of the arts toward democratic availability through collective ownership structures or toward further commodification of cultural assets.” According to Abbate et al. (2022), managing authors’ royalties, provenance, and authenticity issues will be facilitated thanks to NFTs, just as blockchain has some potential for cooperative financial arrangements, including fractional ownership. However, alongside these optimistic views on NFTs, a handful of authors are progressively tempering the hopes placed on this technology. Reinmoeller and Schmedders (2022) believe that “like other markets driven by exuberance, impulse purchases, and hype, the fast-moving and speculative NFT market could burn many investors. The current frenzy invites comparisons with the Dutch *tulip mania* from 1634 until 1637, when some bulbs fetched extremely high prices before the exuberance dissipated and the bubble collapsed.”<sup>1</sup> Ippolito (2022) also critically discusses the storage potential of blockchain, using Warhol and the tokenization of his work as a case study. More pessimistic views are expressed by Gibson (2021), who compares the “absurdist tale of NFT” with Edgar Allan Poe’s rhetoric of art, addressing the tensions between tradition and innovation. Similarly, Notaro (2022, p. 377) spotlights the contradictions of this new economy, which “mixes avant-garde and conservatism, experimentalism and dogmatism, anarchism and techno-scientific capitalism with a splash of gamification for good measure.” The dramatic crash of this market segment reported in fall 2022, as well as the collapse of the cryptocurrency exchange FXT, has gradually undermined the most optimistic predictions regarding NFTs, whose critical mass has not been reached yet (Escalante-De Mattei 2022; Yaffe-Bellany 2022).

Building upon this prior research, we believe that the recent media hype, taken up by researchers, is overstating the role of NFTs in the art world. As stated by Heinich (2014), a “paradigm shift” entails a radical rupture, with new ways of thinking, designing, displaying, and distributing art. While we acknowledge the novel perspectives offered by NFTs, we argue that many practices and behaviors typical of the traditional art market still perpetuate through NFT technology, which mitigates its “revolutionary” nature. The recent press articles and academic publications mostly focus on the top of the iceberg, leaving aside more fundamental questions regarding the sustainable contributions of this technology to the art ecosystem. Historiography indeed tells us that the history of art has gone through several innovations across centuries. While NFTs may be one of those, a better understanding of NFT technology, its benefits, and its limitations is essential to avoid anticipated or reductive conclusions. Consistent with what Walter Benjamin and Theodor Adorno did with the development of photography, our paper intends to critically reflect on the current digital evolution of the art ecosystem, as well as its practices, values, and consumption patterns. According to Perrin (2021), this reflective process is essential to anticipate future changes in the digital sphere, especially around key notions such as authorship, authenticity, and originality.

Our goal is to contribute to the debate by putting into perspective NFTs with behaviors and practices traditionally encountered in the art market. Given the broad scope of this subject, we chiefly address a few issues related to the impacts of NFT technology on the following factors:

- (i) Producers (artists' creative process and career strategies);
- (ii) Intermediaries (role of art market gatekeepers);
- (iii) Consumers (quest for authenticity, collecting habits, and museum interventions in the art market).

More specifically, we reflect on the extent to which NFTs are truly affecting the mechanisms that underlie the production, circulation, and consumption of art. Our exemplification-based analysis and critical discussion result from a review of press articles and academic papers published during the past years, in various media. Taking the viewpoint of producers, we argue that NFTs contribute to perpetuating oversupply and quality uncertainty and do not entirely solve the issues of financial precarity and the lack of diversity and democracy in the art market. When it comes to intermediaries, we show that NFT platforms act themselves as gatekeepers and that prospective buyers will increasingly require quality signals to assess the quality of NFTs in the context of oversupply. From the perspective of the consumers, our main argument is that NFTs are exacerbating our Western obsession with authenticity, authorship, and ownership, at least in the higher ends of this polarized market segment. In many instances, the purchase of NFTs reflects conspicuous behaviors that are emblematic of the upper-end market, while making profitable resales in the lower ends is unlikely, as is the case in the traditional art market. In each section, we provide several recommendations for future research. More broadly, through this contribution, we aim to make this technology more accessible to stakeholders of the art world and to raise attention to issues that must be explored in the future.

## 2. NFT-Secured Art and Producers

### 2.1. *Disrupting the Artist's Creative Process?*

Creativity is the cornerstone of any original work of art, and while new technologies can stimulate human creativity (Sidorova 2019), NFTs as a technology are no substitute for the creative process itself.

Firstly, it is crucial to dissociate the technology from the work of art. The definition provided in the introduction suggests that an NFT is not a new form of art per se but merely a numeric code associated with an existing digital file (JPEG, GIF, pdf, etc.). The file itself can be a digital work of art or the digital reproduction of a physical painting, drawing, or sculpture (e.g., the picture of Hokusai's famous *Great Wave of Kanagawa* hanging in the British Museum). Virtually any kind of work, irrespective of its mode of creation, can be integrated into a blockchain through a numeric code. As a result, NFTs cannot be assimilated to revolutionary production in themselves. In fact, the conflation between the technology and the artistic output can lead to serious confusion among less informed stakeholders of the art world. At best, it is a "simple form of digital certification" or an instrument that alters the financial structure of the market to create scarcity in the digital sphere. For this reason, we will favor the terminology NFT-secured art throughout this essay; a term that better reflects the purpose of this technology.

Secondly, the creation of digital works of art is not a new practice. Early forms of digital art appeared in the 1960s with cybernetic creations and the proliferation of digital pictures, either fixed or animated. What is known as "Internet art" or "Net art" is now acknowledged in art history and museums, thanks to the work of pioneering figures such as Slovenian artist Igor Štromajer. Recently, artists have increasingly been exploiting the potential of digitalization to undertake artistic experiments, using 3D images, artificial intelligence (AI), virtual reality (VR), or neural and generative adversarial networks (GANs). However, artists active in the NFT economy remain visual artists above all, with the term "crypto-artist" being occasionally used to emphasize their self-identity as programmers involved in the production of self-referential works reminiscent of 'memes' (Lawson-Tancred 2021).

Thirdly, the novelty and originality of the composition are what will determine the value of a digital item. Akin to contemporary art, envisioning NFTs as works of art requires a shift in mindset to enable viewers to appreciate the work's originality and the artist's computational skills (Heinich 2014). The creative process remains, therefore, essential in the digital sphere to provide innovative iconography and style that will allow the artist's works to distinguish them from the rest and to generate new aesthetic value in the context of oversupply (Caves 2000). However, an interesting feature of NFTs is the possibility to tend towards more interactive creative processes between artists and owners, consistent with the notion of co-creation and participatory art.<sup>2</sup> However, as observed in the contemporary art market, the rapid growth of the market for NFT-secured art may constrain artists to accelerate their rhythm of production, with an impact on their creative process. To gain a reputation in the crypto-art market, an artist may be tempted to produce more art and at a faster pace to meet the demand, as suggested by the blue chip artist Beeple. Again, the pressure for higher production rates is not radically different from what artists active in the primary market experience nowadays. The prior research indeed suggests that the international art fair agenda, and the corollary pressure put on artists, may affect, to a certain extent, the originality and quality of their products (Adam 2012). The growing attention paid by leading gallerists such as Gagosian to the NFT phenomenon may lead to similar situations in the short run.

In light of this, it is, therefore, crucial to dissociate the artists' creative process (the design and creation of a digital work of art) from the process of issuing an NFT on the blockchain (the association of a numeric code to the digital file). Building upon Lenain's (2011) terminology, NFT technology should be envisioned as involving an exotechnique process that does not affect the work per se, in contrast to the endotechnique's creative process itself. While the former is of little interest in the context of art history, the latter has already been discussed by digital art specialists. Contrary to common beliefs, creating a digital piece of art can be a costly and time-consuming endeavor. While the labor and material costs may be lower (in comparison with other art forms, such as the applied arts), there are substantial costs related to computational devices and training that artists must invest upfront (Paul 2015). Such investment can be viewed as an obstacle, as traditional fine art artists eager to venture into crypto-art need to learn new digital skills—a process that comes up with its own challenges.

Although we currently lack enough distance to assess the impact of the art market on the artist's creative process, art historians should begin to pay serious attention to crypto-art and its rapid evolution in order to define what quality and originality mean in this production and how both dimensions may be assessed scientifically. Recurring iconographic and stylistic peculiarities (e.g., the predominance of stylized and pixelized figures, flashy colors) or the influence of other art movements and artists on this art form (CryptoKitties and pop art-influenced editions of Takashi Murakami, for example), require further analysis. The existence of polysemic categorizations and practices in the crypto-art world, from digital files to printed works of art that incorporate a USB stick containing the numeric code, also calls for more precise artistic terminology. Developing a lexical, iconographical, and stylistic vocabulary is essential to capture the essence of this production process and help NFT-secured art pass on to posterity.

## 2.2. *Disrupting Artists' Career Strategies?*

The use of NFTs is sometimes presented as a new method of democratization of the art world, allowing any artist to enter the art market, gain visibility online, and sell their digital work (originals or reproductions) in a profitable manner (Whitaker 2019; Catlow et al. 2018). In the vein of prior research on creative entrepreneurship (Chang and Wyszomirski 2015; White 2013; Beckman and Essig 2012), the new business model involving blockchain technologies offers two interesting perspectives for freelance artists.

Firstly, NFTs are presented as a promising way for unknown or less-represented artists to gain a reputation and to make a living with their digital output, "outside the

gate-keeping systems and taste hierarchies” (Kapoor et al. 2022, p. 2). Beeples, Pak, and other mediatic artists who emerged from the NFT hype were indeed newcomers in the art world, who were largely unknown to the stakeholders who traditionally participate in the process of value co-creation (Preece and Kerrigan 2015). NFTs are also allowing other types of creative people to enter the visual art market, such as graphic designers, digital illustrators, and cartoonists, who are usually engaged in other businesses. These less-established artists may indeed gain some visibility by using NFT platforms for self-promotion and branding, as they do via social media platforms (e.g., Instagram) or online sales platforms (e.g., SaatchiArt or Catawiki). Female artists, whose art is notoriously less-represented and underpriced in most levels of the art market (Cameron et al. 2019; Marchenko and Sonnabend 2022), may also find some opportunities in the NFT-secured art trade. Notaro (2022) provides a series of examples of artists from emerging economies who previously struggled to make their place in the conventional visual art markets and have succeeded in differentiating themselves through NFT-based technologies (e.g., South African artist Lethabo Huma, Nigerian artist Osinachi). Although convincing, these duly selected examples prevent us from assessing how representative they are of the artistic community, and whether this new modus operandi will guarantee long-term success for the artists, especially in the context of a declining market. Furthermore, empirical evidence is needed to see whether artists from minority groups and female artists are truly the most inclined to access and adopt NFT technologies. Regardless, NFTs can act as reputation enhancers can be used by lesser-known artists for career development or by established artists to launch new trends, as evidenced by Damian Hirst’s recent dive into the NFT economy. The prevalence of anonymity in the crypto-art world (Wang et al. 2021) also offers interesting research perspectives for art historians regarding the use of pseudonyms and reputation-building mechanisms.

A second important innovation offered by NFTs is the possibility for artists, either established or emerging, to gain more systematic royalties and resale rights in cyberenvironments (Van Haaften-Schick and Whitaker 2022; Abbate et al. 2022; Popescu 2021).<sup>3</sup> Digital artists have indeed long struggled to generate revenues with intangible works of art, especially because of ownership issues (Wilson et al. 2021). This situation has been perceived as being highly problematic, as the purpose of royalties is specifically to generate long-term revenues, according to Caves’ *ars longa* principle (Caves 200), and to stimulate creativity. From a legal perspective, guaranteeing fair royalties on the use or sale of a digital work of art is nothing but a daunting task, due to the ambiguous notion of ownership and the lack of legal control, making digital art a public good subjected to opportunistic behaviors and free-riding (Sullivan 1996). The existing literature on public governance indeed suggests that implementing systematic legal control is one of the main challenges faced by public authorities, as it requires an efficient state apparatus (Ranchordás 2019). Such a situation is notoriously observed in the art market, where controlling the validity of each attribute of the works put up for sale is unmanageable (Oosterlinck and Radermecker 2023). To alleviate the limitations of the traditional art market and legal system, blockchain-based technologies now offer unprecedented opportunities for a more systematic tracing system of copyrights and resale rights in the digital sphere to the benefit of creative people.

The potential of NFTs to launch an artist’s career is, however, mitigated by a series of challenges traditionally faced by artists in the labor market. Demand uncertainty, oversupply, fierce competition, job precarity, and job combination are well documented in the academic literature (Caves 2000; Abbing 2002) and seem to apply to cyberenvironments as well. We address below four issues in particular.

A polarized market: Aspirant artists should not think that starting a career in crypto-art is easier or that any digital work will automatically fetch substantial prices, as suggested by the media. Like the traditional art trade, digital art evolves in a polarized market, divided into the primary and secondary markets. This market is vertically segmented, with at the top a handful of artists capable of selling crypto-art at skyrocketing prices, and at the bottom an unquantifiable number of NFT-secured collectibles of low value produced by

unknown individuals. According to [Rea \(2021\)](#), the average price of an NFT is \$15 in 75% of cases. One percent fetches prices that are higher than \$1594, and only a few works sell for more than a million dollars, as observed in the traditional art market. Similarly, some famous CryptoKitties went for millions, but the average price of these items is about \$175 ([Criddle 2021](#)). The odds for an artist to break through are, thus, rather low. A recent survey revealed that according to 37% of crypto-artists, luck remains a key factor that correlates with the artist's preexisting patronage and self-branding skills.<sup>4</sup> The brand value of art has been the focus of recent studies in contemporary art ([Angelini et al. 2022](#)), having equal importance in cyberenvironments.

**Relative market accessibility:** From an entrepreneurial perspective, the possibility for artists to directly sell their NFTs through specialized platforms echoes the practice of selling physical works online, although additional tasks fall on the crypto-artist. Third-party platforms such as SaatchiArt or Catawiki allow unknown artists to easily fulfill their demand and promote and sell their physical works on their own, leading to a more "democratic" art market. This discourse has been transposed into the NFT-secured art market. However, claiming that the barriers to entry are lower in crypto-environments is reductive, since the NFT economy requires a minimum of familiarity and specialized knowledge regarding the technical terms and tasks. As mentioned earlier, embarking on this process is not necessarily accessible and affordable to all artists. The gas and electricity fees that are necessary to issue NFTs are extra costs that artists must also bear ([Salman and Abou Elnasr 2021](#); [Wang et al. 2021](#)). As a result, production costs can rapidly exceed sales revenues, leaving the artists in a situation of financial loss in cases of limited sales. Such a situation may prevent emerging artists from starting an NFT venture, especially at the beginning of their career. Investing without any guarantee of ex post success is costly and risky. In this respect, the notion of democratization needs to be mitigated.

**Oversupply:** Fierce competition due to oversupply is another issue faced by emerging artists in this new market segment. Such a competitive environment is typical of the cultural and creative industries (CCI), where anyone can claim to be an "artist." Creating a basic digital file and converting it into an NFT has become accessible to many creative people. As a result, the crypto-art market entails extra competition and uncertainty for artists who are constrained in finding alternative strategies to differentiate themselves from the mass. Here, the distinction between NFT-secured art items and actual crypto works of art produced by official artists becomes crucial to avoid putting on an equal footing incomparable products resulting from distinct processes. Our views support that of [Botz \(2021\)](#), who contends that most NFTs are nothing but creative collectibles that compose an umpteenth niche segment of the art trade.

**Financial precarity:** Due to the current lack of reliable data, the proportion of artists who benefit from revenues generated by the sales of their NFT-secured works remains difficult to estimate, as are the frequencies of transactions and their amounts. Claiming that the majority of crypto-artists can make a living from digital art is premature, for this claim has little robust evidence. As the market is currently experiencing a decline, we may assume that the royalties generated online remain marginal for crypto-artists, and even less for more traditional artists who have not embraced the NFT hype yet. The proportions of private galleries and collective authors' rights management companies that apply this system to ensure fairer remuneration for the artists they represent are also unknown at this juncture. It, therefore, seems reductive to think that NFT-secured art is the new economic El Dorado for emerging or more established artists whose production may not suit this technology or whose clientele may not be receptive. Such a claim runs the risk of making creative people believe that any digital item can be viewed as art and is likely to fetch high prices, with dramatic delusional effects. In fact, it is likely that [Abbing's \(2002\)](#) provocative question, "why are artists poor?", also applies to creative people active in the NFT economy. Aggregate data are needed to assess whether the income generated by NFTs is enough for an artist to be self-sufficient or is part of a larger diversification strategy for artists (combined with, for example, physical sales, grants, public funding, and auxiliary activities,

including art jobs and non-art jobs). One should, therefore, approach with caution economic recommendations urging young artists to exploit the potential of blockchain to develop their career, as observed in some studies compelling emerging artists to brand themselves (Hernando and Campo 2017) or to use big signatures to perform better in the art market (Zhou 2017).

### 3. NFT-Secured Art and Intermediaries

#### *Disrupting the Role of Gatekeepers?*

The greater autonomy that a decentralized economy can offer to artists has led some authors to claim that NFTs could accelerate the process of desintermediarization, undermining the role of brick-and-mortar gatekeepers and middlemen (Morkunas et al. 2019; Angelis and Da Silva 2019; Bowden and Jones 2021). Again, such a statement must be interpreted critically, as we have reason to believe that this desintermediarization process is not as drastic as expected.

Firstly, Wilson et al. (2021) remind us that crypto-technologies themselves require peer networks and are based on a system of decentralized “core” and “related” intermediaries. While the former ensures the proper inner-working of blockchain technologies and secures the ledger, the related intermediaries are involved in after-sale and resale activities, such as accounting and taxation. The inner working of the blockchain, thus, means that intermediaries still operate in this new economy.

Secondly, indirect signals of quality are needed in a situation of oversupply to reassure buyers and increase their willingness to pay, as is the case for the traditional art market (Spence 1973). Currently, the NFT platforms’ reputation and artists’ market performance are the two main signals that buyers can rely on to circumvent information asymmetry and quality uncertainty. Sellers and buyers join these platforms, whose brand names often recall the most sought-after characteristics of NFTs (i.e., “rarity” with Superrare, Rarible, and KnownOrigin) and convey different reputation signals, based on their technical efficiency, ability to attract successful artists, and curatorial choices. Relying on intermediary brand names is another typical behavior found in the traditional art market, with top-tier players reassuring buyers regarding the quality of goods (Bocart and Oosterlinck 2011). Put differently, NFT platforms operate as intermediaries that foster transactions between suppliers and buyers. As with any other intermediary, their core business is also based on charging fees on sale prices.

Thirdly, the role of more traditional brick-and-mortar intermediaries should not be minimized in this new economy. The impact of digitalization on experts, agents, auction houses, and galleries has already been widely discussed, with the conclusion that gatekeepers are expected to play an ever-growing role in cyberenvironments (Towse and Handke 2014). Arora and Vermeulen (2013) argue that the increased flow of information and data complicates the consumer decision-making process and compels them to seek the expertise of specialized intermediaries. The NFT-secured art economy is no exception. According to Whitaker (2019) and Lena (2019), democracy not only relies on popular participation but also on judgments by experts. How expertise will develop with crypto-art and how to assess quality in a situation of oversupply must be scrutinized in future research. Smeets (2021) argues that the assessment of NFT quality mostly depends on subjectivity and the importance of storytelling, as is the case for any kind of art form. However, the selection and curation criteria currently used by NFT platforms remain relatively opaque. It is, therefore, likely that the NFT craze will make the role of intermediaries—from and outside the NFT community—all the more crucial to study these products, highlight their specificities, and participate in their historical legitimization. Traditional art dealers and auctioneers have the knowledge and skills to sort out the vast quantity of NFTs and to create value (Smeets 2021), as evidenced by their business diversification and extension to the virtual world. Several leading auction houses and art galleries (Christie’s, Sotheby’s, Millon, Gagosian) are currently capitalizing on the economic potential of NFTs by developing, controlling, and securing the market for digital artists. Reciprocally, the inclusion of tangible works

in Sotheby's metaverse betrays the will of top-tier players to attract digital buyers into the physical market. By exploring the benefits of new technologies and combining them with their unique selling proposition, Christie's and Sotheby's are investing in the art market of tomorrow (Gilbert 2005; Knight and Harvey 2015; Smith and Lewis 2011). These experiments, albeit costly, are essential to allow intermediaries to face the next shifts that the art market is expected to go through in the digital era. The relationships that many gallerists maintain with the institutional field (i.e., museums, academia) are also crucial to avoid crypto-artists being reduced to "mediatic artists" and falling into oblivion in the long run (Moureau and Sagot-Duvaurox 2016). Put differently, traditional gatekeepers are still expected to play a crucial role in legitimizing and inscribing this phenomenon into the history of art.

Finally, as blockchain technology and metaverse environments develop, new generations of digital-born art buyers will fancy new forms of art and need guidance, as was the case for previous generations in other contexts. As a result, one may expect the emergence of new profiles of intermediaries, such as NFT-specialized managers or agents with computational skills, to assist and equip artists and buyers eager to enter the crypto-art market. Future research should pay attention to the shifting profiles of traditional and novel intermediaries, as well as to new forms of expertise in the market for NFT-secured art. Furthermore, what are the quality signals that buyers consider *ex ante*? Can we identify varying degrees of expertise and reputation—some being more reliable than others—among NFT stakeholders? These are important questions that need be addressed.

#### 4. NFT-Secured Art and Consumers

##### 4.1. *Disrupting the Quest for Authenticity?*

As mentioned earlier, securing authorship has long been a major challenge faced by stakeholders in the digital sphere. Unlike regular visual arts, digital works of art are not physically touched by the artist but are created through the intermediation of a computer. Providing evidence of ownership is another daunting task, as any digital file can be copy-pasted, downloaded, or screenshot for free, despite the existence of copyright laws. What makes NFTs appealing to buyers is the technology's capacity to create uniqueness in the digital realm and to guarantee authorship and ownership, through a decentralized system of authentication (Whitaker 2019). Despite this non-negligible advance, we argue that NFTs perpetuate—if not exacerbate—well-known purchasing behaviors observed in the traditional art market.

**Quest for authenticity:** The quest for authenticity is not a new issue within the art ecosystem. This cultural construct, inherited from the 19th century, is particularly revealing of how Western societies value art and authorship (Lenain 2011). What matters for viewers and buyers is to feel the connection with the artist's hand and creative gestures according to a contagion effect (Newman et al. 2011). In the art market, the guarantee of the artist's hand is indeed paramount, for it has critical financial implications for art buyers (Radermecker 2021). The quest for authorship is particularly reflected in the importance attached to the artist's name and any evidence of it, including a signature or a certificate of authenticity. In the digital world, the latter takes on a new dimension thanks to NFTs. According to Nadini et al. (2021), the revolutionary aspect of NFTs resides in their function as digital certificates in the cyber art market, allowing buyers to claim ownership of a numeric code linked to an image. This property is explicitly stated in the term "non-fungible," which indicates that the certificate cannot be replaced by any equivalent. Moreover, non-fungible tokens are unalterable and cannot be forged, which is a significant difference from written certificates of authenticity. A typical challenge faced by art market stakeholders is indeed the forging of certificates, which traditionally take the form of a small piece of paper on which the artist him- or herself or an expert expresses an opinion on the work's authorship. Manipulating this crucial document is relatively easy, as evidenced by the deceptive practices of famous art forgers (Lenain 2011; Koldehoff and Timm 2013). Just as for the attribution of a painting, the authentication of a certificate requires a social consensus

among experts. A common misconception is, however, to envision NFTs as certificates of authenticity *stricto sensu*. According to [Frye \(2022, p. 6\)](#), “NFTs reinvented certificates of authenticity, while largely misunderstanding their point”, for they cannot guarantee that the work is truly genuine. As mentioned above, buying an NFT means buying access to a digital file through a numeric code that is linked to the digital work. Whether or not is the digital file is an authentic work created by a given artist is another issue. Additionally, buyers do not acquire copyright ownership, but merely the NFT itself under the form of a numeric code. This suggests that unlike the traditional certificate of authenticity, NFTs fail to create this meaningful connection with the works they are supposed to authenticate. At best, blockchain technologies allow art buyers to possess and control the use of a digital asset ([Clark 2021](#)). Still, they seem to create this sought-after feeling of owning “authorship” in the digital art world, accentuating our modern obsession for authenticity. Far from challenging it, the NFT phenomenon contributes, in fact, to feeding it by falsely giving auctorial value to the intangible.

The quest for authenticity is also reflected in the importance given to provenance. A non-negligible advantage of a decentralized system of authentication is the information that stakeholders can have on the provenance of a digital work of art. A well-documented and detailed provenance is particularly valued by buyers in the traditional art market ([Radermecker 2021](#)). As any transaction or shift in ownership is enacted through a smart contract in the blockchain, retracing a work’s pedigree and history of ownership becomes feasible in the digital sphere. According to [Wilson et al. \(2021\)](#) and [Gibson \(2021\)](#), the originality of crypto-art specifically resides in its reinterpretation of provenance in the cyber-environment, rather than the certification of authorship *per se*. Blockchain technologies are, therefore, presented as potential solutions to alleviate crucial issues encountered in the art market, including the market for antiquities, which is known for its opacity, inefficiency, looting, and forgeries ([Fincham 2019](#)). Put simply, applying this technology to a tangible work consists in associating it with its NFT-secured reproduction. By doing so, the art market may tend towards more transparency, although the implementation of this system also raises some challenges in practical terms. Non-official transfers of ownership are still possible, especially when reproductions of tangible works of art linked to an NFT are concerned.

Furthermore, while the hedonic benefit of “owning uniqueness” in multiplicity may be new in the digital realm, it is not in the history of art. The issue of seriality versus uniqueness has extensively been discussed in art history (e.g., [Benjamin 1936](#); [Steiner 1999](#); [Lazzaro 2006](#); [Tummers and Jonckheere 2008](#)), and envisioning NFTs as a radical change in people’s conception of uniqueness may be misleading. The process of creating exclusivity by issuing a limited series of NFT-secured items is not a revolutionary practice, as traditional artists have long used this strategy. By producing a limited series of prints and destroying the original plate, old masters such as Dürer and Rembrandt created exclusivity within multiples ([Benhamou and Ginsburgh 2006](#); [Lazzaro 2006](#)), a technique later exploited by major artists such as Andy Warhol or Jeff Koons. Doodle’s limited production of nine “aliens” sold for several million each follows the same logic. The reaction of DJ Steve Aoki was revealing in that regard, by proudly claiming that he had acquired the 7th alien in the middle of his DJ set. In other words, serial NFT-secured works of art are nothing but derivatives of ancestral art practices, transposed into the digital sphere and creating the same feeling of “exclusivity” for consumers.

Finally, despite the feeling of security generated by NFTs, one should not forget that opportunistic behaviors still occur in this market segment. While a buyer can pretend to own the digital code associated with a work of art in their digital wallet, the digital file can be subjected to copies and screenshots by others for personal or illegal use. Buyers benefit from the ownership of a digital work that remains reproducible by others, just as anyone can claim to own a copy of a famous work of art via a postcard, poster, or photograph. As for other traditional media, property is not synonymous with copyright ([Kapoor et al. 2022](#)), and providing a legal solution to the illegal tokenization of NFT-secured works of art is still

a major challenge faced by art market stakeholders (Chow 2021). For example, one may screenshot an NFT-secured art piece and turn it into a new NFT, challenging the notions of authenticity, uniqueness, and scarcity (Gibson 2021). In this respect, NFTs do not solve the long debate about originals and copies in the art world, with some artists even playing with this tension in their digital works.<sup>5</sup> More severe digital art frauds are also happening, taking the form of cybercrime (wallet hacking), the illegal production of NFTs, and copyright infringement, with varying degrees of gravity depending on the sophistication of the owner's protection system. Major artists such as Anish Kapoor and Banksy have already experienced such deceitful practices, including non-authorized copies or illegal sales of their NFTs (Escalante-De Mattei 2021; Tidy 2021). OpenSea, the largest NFT marketplace, acknowledges that some 80 percent of its NFTs are fakes (Mercier 2022). Mercier (2022) also notes that the resale rights enjoyed by the author of an original work of art or their heirs when resold on the secondary market are difficult to follow.<sup>6</sup> Crypto-stakeholders, therefore, engage in risky transactions within a highly unregulated cyber-environment that imperatively requires further due diligence protocols to counteract tax evasion, money laundering, criminality, and the financing of terrorism (Das et al. 2022; Salman and Abou Elnasr 2021).

Each point discussed in this section thus requires further investigation. As the market for crypto-art is mostly made up of cheap collectibles, one may wonder whether the notions of authenticity, uniqueness, and provenance are also valued in its lower ends, or what the risk aversion degrees are for buyers in this market segment. Semi-structured interviews need to be conducted with purchasers active at different levels of the crypto-art market to better understand their consumption experiences.

#### 4.2. *Disrupting Collecting Practices?*

While further empirical research is also needed on NFT buyers' profiles and incentives, several indicators can allow us to identify some consumption patterns that do not substantially differ from existing collecting practices. According to the press, NFT technologies enable any buyer to enter the art market, open a crypto-wallet, support their favorite artists, and build a collection based on their preferences and budget constraints (Clark 2021). In reality, such facilitated access to the primary art market is already permitted since the proliferation of online third-party platforms specializing in low-brow art or emerging artists. The democratic access to the art market offered by NFTs must also be mitigated by the fact that in 2021, people owning a crypto-wallet only represented one percent of the global population or approximately 74 million individuals.<sup>7</sup> Despite the attempt of some NFT platforms to enhance the user-friendliness of their website and transaction system—by allowing credit cards (Salman and Abou Elnasr 2021)—envisioning the NFT economy as democratic appears to be quite optimistic, since only educated buyers can navigate through this complex and costly interface.

Moreover, as pointed out by Clark (2021), the crypto-market is merely reproducing existing collecting patterns that are typical of the fine arts sector. High-end NFT-secured works of art are viewed as luxury "Veblen" goods and used for conspicuous consumption (Mandel 2009), being displayed in virtual environments to signal a certain social status and level of wealth. Recent price records could even suggest that NFTs have made conspicuous consumption reach its paroxysm, with buyers willing to spend millions on digital items to satisfy their self-esteem aspirations. Social media platforms such as Twitter play a crucial role in this process, not only in the artists' self-promotion but also in the buyers' self-distinction. The digital nature of NFT-secured works fits particularly well those applications, either to openly display conspicuous behaviors (by claiming and showing publicly the acquisition of a given work) or from a utilitarian perspective, as NFT-secured art pieces can be used as personal avatars, profile pictures, or gathered into a publicly-accessible file similar to a private art gallery. It is, therefore, not surprising to notice that most social media platforms now include an NFT option in their settings.<sup>8</sup>

In the art market literature, the notion of conspicuous consumption also closely relates to that of investment. The sudden entry of wealthy newcomers in this segment has led to a temporary speculative “bubble,” with large sums of money being invested in non-institutionalized works of art (Gibson 2021; Wilson et al. 2021; La Monica 2021; Ossinger 2021). In the upper ends of the crypto-art market, acquiring rare digital items has become a way of diversifying investment portfolios, with short-term speculative opportunities permitted by the high volatility of both NFTs and cryptocurrencies (Wilson et al. 2021). Levy (2021) and Botz (2021) designate this category of buyers as speculators, for whom making money largely prevails over the NFTs’ artistic and aesthetic peculiarities—a reductionist vision of art that is not uncommon in the traditional art market. Recent studies have, therefore, paid attention to the market performance of NFT-secured art in comparison with other currencies. Using the Foundation platform as a case study, Popescu (2021) explored the market dynamics of NFTs and showed that their performance at auction is similar to that of other NFT clusters. Through machine-learning algorithms, Nadini et al. (2021) analyzed 6.1 million datapoints from Ethereum and WAX blockchains to map the NFT market and detect certain interactions between NFT objects, trades, and sectors. Dowling (2022) and Ante (2021) explored three submarkets of NFTs and examined their relationships with cryptocurrencies, highlighting the relative immaturity and inefficiency of this market segment. Just as for traditional fine arts, the recent research also suggests that a set of hedonic attributes are good predictors of NFT prices. Provenance, through sales history saved in the blockchain, and “the recognition of the creator and the overall marketing around the NFT itself”<sup>9</sup> are the main drivers of the economic value of these digital assets (Nadini et al. 2021).<sup>10</sup> This is extra evidence that the market for NFT-secured art perpetuates the superstar economy typical of the CCI, where the quest for big names, authenticity, and scarcity often prevails over the works themselves.

Needless to say, this profile of buyers only represents a portion of the crypto-art market. In addition to speculators, a widespread group of consumers is composed of digital natives, who are savvy in computer science and digital technology and who have made substantial profits by investing early in crypto-money (AFP 2022). More specifically, Griffith (2021a) associates NFT buyers with “fans” who envision NFTs as an alternative form of entertainment. For these buyers, the NFTs’ utility resides in their status as collectibles, bearing a decorative and small investment value. What these early adopters purchase is an emotional feeling, the pleasure of owning an intangible asset, just as older generations show a strong attachment to material objects such as antiques. Other incentives to purchase NFTs are the phenomenon known as FOMO (“fear of missing out”) and the “nostalgia” argument, with buyers acquiring NFTs to reconnect with their past experiences (Griffith 2021b). The pixelized aspect of many NFT-secured items such as crypto-punks indeed recalls Game Boy devices and games that have marked an entire generation. One may, therefore, argue that the motivations of this category of buyers do not differ much from those of less-elite art buyers who acquire affordable contemporary pieces of art and antiques as a hobby or for decorative purposes. However, unlike traditional low-end galleries and auction houses, entering the market for NFTs requires significant search costs and computational skills for novice buyers. The lower value of those digital collectibles also shows that the NFT market is highly concentrated, with only 10% of traders performing about 85% of all transactions (Nadini et al. 2021). According to Criddle (2021), “unless you are prepared to spend a lot of money and time learning the market—it is hard to imagine making money from NFTs.” What has been mentioned for artists, thus, applies to buyers as well; despite some opportunities for fragmented ownership (Whitaker and Kräussl 2020), the investment potential of NFTs is relative.

That being said, this parallel economy, where individuals invest in digital life and buy and display immaterial collectibles, is expected to generate new kinds of consumption behaviors that scholars should investigate, especially using a comparative approach. To what extent digital purchases and lifestyles differ from physical ones and how online and offline tastes differ from each other are pending questions that require further research.

#### 4.3. *Disrupting Museums' Interventions in the Art Market?*

Museum curators are important stakeholders in the traditional art market, who make direct purchases to enrich the collections of their institution. Whilst some of them are already involved in the acquisition, preservation, study, and display of NetArt (Perrin 2021; Lartigaud and Thély 2008), the NFT hype is compelling public and private organizations to pay increased attention to blockchain-based technologies, either from an artistic perspective or to enhance their internal efficiency. For museums, the areas that are concerned with such innovation are provenance research (Whitaker and Kräussl 2020), archive management (Quirion 2021; O'Dair 2019), audience participation through gaming activities (Wang et al. 2021), collection management (storage and preservation) (Lo Duca et al. 2020), and innovative business models (Reyburn 2021). NFT-secured art is also raising new exhibition and conservation challenges for public institutions. Digital storage and obsolescence, cyberattacks, and digital display modes are issues that curators are seriously considering (Thibault 2021). Finding optimal resolutions and formats that best suit the peculiarities of digital works of art and allow audiences to appreciate these peculiarities other than through a cell phone or laptop screen is a recommendation already expressed by the sector (Devi 2021). As pointed out by Siri et al. (2018, p. 201), "faithful high-quality digital reproductions of works of art could be as arousing as the original works of art, but at the same time, they cannot replace the experience of standing in front of an authentic work of art in terms of explicit hedonic attributed values." Blockchain-based technologies still require further research to exploit their potential in line with museums' missions, including the acquisition of NFT-secured works of art, the study of their production, and the curatorship of exhibitions.

More problematic is the sale of NFT-secured works by public museums, which is a new form of museum intervention in the art market. Public institutions are increasingly expected to become more accessible, inclusive, diverse, and sustainable. In this respect, the tokenization of masterpieces from major institutions such as the British Museum and the State Hermitage Museum (Valeonti et al. 2021), through collaborations with private firms, is questionable.<sup>11</sup> Recently, NFTs of Hokusai's works were put up for sale through the LaCollection platform,<sup>12</sup> while the digital asset company Ezel.life began to sell reproductions of furniture from the Casa Roja, Frida Khalo's family home. While certain museums envision this practice as an alternative form of patronage (AFP 2022), one may argue that the sale of original digital reproductions of works owned by a public museum echoes some forms of deaccessioning. Deaccessioning is the practice of removing a tangible asset from a public collection through sale, restitution, transfer, donation, or destruction (Piazzai and Vecco 2015). According to the "inalienability" principle of public collections, this practice is forbidden in Europe. Arguably, selling an NFT-secured digital version of a painting or a print is not a deaccessioning practice per se, since the physical work remains the property of the museum or the government and is still available to audiences. However, the sale of a unique (or limited) reproduction of a public good by a public institution inevitably raises the unaddressed question of "digital deaccessioning." Unlike postcards or posters—whose value rarely exceeds a few dollars and therefore remains affordable to most visitors,—NFTs issued and sold by museums give a handful of people the exclusive privilege of owning a public good's authentic digital pictures, at prices that are far from being democratic. In the case of Hokusai's NFT-secured digital prints, several levels of rarity were proposed to create sophisticated price discrimination. The fixed prices were around \$500, while some editions were auctioned with low estimates close to \$4000 and with auction results fetching five-to-six figures.<sup>13</sup> What is done with the money resulting from those sales remains unclear, although this extra income derives from public money, as is the case for deaccessioning. New opportunistic behaviors may also emerge, including the tokenization of official museum NFTs for personal profit. While they remain non-competitive, NFT-secured reproductions of museum masterpieces become excludable, partly losing their status as a public good. This controversial practice has recently led the Italian government to prohibit all forms of contracting between public museums and NFT companies (Batycka 2022). However, as American and Northern European institutions are more open to deaccession-

ing practices (Piazzai and Vecco 2015), one may expect increased commercial use of this technology by public institutions, with potential abuses in terms of social welfare. Similarly, the environmental costs of issuing an NFT should be seriously considered by practitioners before embarking on the NFT venture, especially since sustainability has become a top priority of the museum sector.<sup>14</sup> In this shifting context, supranational organizations such as the International Council of Museums (ICOM) should update their deontological codes and provide professionals with well-informed recommendations.

In light of this, reflecting on the long-run opportunities offered by NFTs should prevail over short-run benefits, and the ethical questions raised by the entry of publicly funded museums in the crypto-art market need to be addressed critically. More broadly, empowering museum practitioners regarding cutting-edge technologies is crucial to allow them to keep up with the rapid evolution of digital environments and to develop appropriate responses and migration strategies. The uncertainty that currently surrounds NFTs and blockchains makes such developments costly and risky investments for museums, a reason why many initiatives remain exploratory at this stage and many practitioners relatively risk-averse (Greve 2007).

## 5. Concluding Note

In this paper, we have questioned the “revolutionary” nature of NFT-based technologies in the art ecosystem. The recent NFT mania, largely fueled by the press and social media, calls for more critical reflection among researchers and practitioners to disentangle the opportunities and limitations of radical innovations in a well-informed manner. At this juncture, the benefits of blockchain technology for the art field chiefly deal with copyright management and provenance research (Abbate et al. 2022; Nadini et al. 2021; Whitaker 2019; Catlow et al. 2018). Our thinking on the effects of NFTs on producers, intermediaries, and consumers mitigates the claim that NFT technologies have deeply and durably disrupted the entire art ecosystem. Not only is such a claim premature, but it is also reductive epistemologically. Throughout this essay, we have demonstrated that NFTs perpetuate, and even accentuate, long-standing behaviors and challenges encountered in the CCI, including oversupply, the competitive environment, the likely limited income possibilities, the quest for authenticity, and the moderate art returns. Discourses on NFTs should, therefore, avoid conveying simplistic or over-optimistic statements regarding the possibility for artists and collectors to earn substantial revenues from tokenization or the presumed democratic dimension of the NFT economy. If one may argue that our conclusions are self-evident—as the market for both tangible and intangible art is inherently part of the creative economy—our paper contributes to the fast-growing number of publications on the topic by focusing on the main stages of the CCI’s value chain and reflecting on the extent to which NFTs have disrupted each of them. As we are still in an exploratory phase (Purtill 2021; Shilina 2021), it would be presumptuous to conclude on the future directions that this technology will take in the forthcoming years or on how receptive art market stakeholders will be towards its next incremental innovations. Enhancing the awareness of the current opportunities and limitations and closely monitoring the market’s evolution are, however, crucial to enable the art ecosystem to welcome future developments in the most responsible and sustainable manner. Throughout this paper, we have also highlighted several research avenues that art historians, cultural economists, sociologists, artists, and curators should explore jointly. How to assess the quality of NFTs and intermediaries’ reputation signals, how to deal with unofficial digital reproductions, and how to make sure that NFTs serve artists’ careers and museums’ missions above all are open questions that must be addressed to ensure that this technology supports the core values of the CCI.

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## Notes

- <sup>1</sup> See Garber (1989) for an excellent survey of the rise and fall of the tulip mania.
- <sup>2</sup> This strategy has been experimented by the music band HLMTD, by decomposing an album into six NFTs and allowing the owners to compose their songs. Available at <https://async.market/music/master/0xb6dae651468e9593e4581705a09c10a76ac1e0c8-1605/player> (accessed on 10 January 2023).
- <sup>3</sup> Note that this is in contradiction with Mercier (2022).
- <sup>4</sup> See <https://cryptoart.humanities.uva.nl/> (accessed on 13 December 2022).
- <sup>5</sup> See, for example, the *Replicator* by Canadian artist Mad Dog Jones which replicates itself and generates a new NFT every 28 days.
- <sup>6</sup> See Ginsburgh and McAndrew (2020) and Van Haaften-Schick and Whitaker (2022) for details on resale rights.
- <sup>7</sup> See [Blockchain.com](https://blockchain.com), 2021.
- <sup>8</sup> On the potential of social media for NFTs marketing, see <https://chuckisaacaikens.com/social-media-marketing-for-nfts/> (accessed on 18 January 2023). See also <https://nftnow.com/news/almost-every-social-media-company-is-adding-nft-features/> (accessed on 18 January 2023).
- <sup>9</sup> See <https://cryptoart.humanities.uva.nl> (accessed on 27 December 2022).
- <sup>10</sup> In his study focused on crypto-punks, Pérez le Maignan (2021) has also shown that the avatars' gender, skin color, and accessories affect prices differently. A compelling example is the opening of the first private museum dedicated to NFTs in Seattle.
- <sup>11</sup> According to the International Council of Museums' new definition, "a museum is a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets and exhibits tangible and intangible heritage. Open to the public, accessible and inclusive, museums foster diversity and sustainability. They operate and communicate ethically, professionally and with the participation of communities, offering varied experiences for education, enjoyment, reflection and knowledge sharing." Available at <https://icom.museum/en/news/icom-approves-a-new-museum-definition/> (accessed on 28 December 2022).
- <sup>12</sup> Available at <https://lacollection.io> (accessed on 16 August 2022).
- <sup>13</sup> See, for example, <https://www.theguardian.com/technology/2021/sep/24/british-museum-nfts-digital-hokusai-postcards-lacollection>; <https://www.theartnewspaper.com/2021/09/24/british-museum-to-sell-nfts-of-200-hokusai-works-including-the-great-wave> (accessed on 18 January 2023).
- <sup>14</sup> Available at <https://www.ne-mo.org/advocacy/our-advocacy-work/museums-and-sustainability.html> (accessed on 20 July 2022).

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