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Metaverse, NFTs and Artificial Intelligence: Toward a Continued Intellectual Property Crisis in European Union Law

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Abstract

The present paper analyzes the legal classification of non-fungible tokens (NFTs) in European law, with particular reference to their potential status as digital works of art. After reconstructing the market's evolution and the main legal controversies, this study challenges the interpretation of NFTs as mere digital certificates, arguing that, especially in native NFTs, the token can constitute the technical-legal basis through which the digital work is identified and circulated. The study addresses the tensions between tokens, underlying content and exploitation rights, focusing on the applicability of the exhaustion principle and the potential reshaping of rights in the context of digital resales. It also examines the critical issues arising from the lack of coordination between the regulation of crypto-assets, copyright and the regulation of artificial intelligence. It concludes that the shrinking market does not negate the cultural and legal relevance of the phenomenon, but requires a systematic realignment to ensure legal certainty and regulatory consistency.

Keywords: European Union Law, NFT, metaverse, crypto culture, digitalization, intellectual property, AI Act, copyright, international and European case law

1. Introduction

The ongoing digitalization of technological advances has had both a positive and negative impact on copyright law within the European and international context. This right has been based on the idea of the work. It is the result of human creative activity presupposing the centrality of one or more natural persons as the original owners of the creation. Likewise, social changes and the spread of advanced digital tools, driven by complex systemic tensions, have created systems of intensified and dynamic artificial intelligence, thus necessitating a structural revision of traditional copyright paradigms. The need for a social, regulatory and human-centered approach has paved the way for the evaluation of well-founded results that crystallize intellectual property, reflecting thus the evolution of contemporary creative

processes.[1]

Another level of complexity is linked to the material dimension and to the dynamic relationships of an exchange that takes place virtually. Content is creative and not necessarily anchored to material supports in physical, delimited spaces. It exists as digital entities encoded in distributed ledgers exchanged in global transaction markets and displayed in virtual environments assuming commercial and social spaces. The object of exchange is not a material work, which in onlife (Floridi, 2014) should be a non-fungible token (NFT), an algorithmic output that processes diverse data. Thus, the NFT has emerged as a suitable instrument that uniquely guarantees ownership of the digital work. This delimits the legal scope of guarantees with reference to a token capable of certifying copyright. It does not create, transfer, or infringe works that are placed in virtual worlds of the so-called metaverse. The term was introduced by Neal Stephenson in his 1992 novel Snow Crash, in New York. The metaverse defines an immersive digital environment based on blockchain-enhanced virtual reality technologies that perform social and economic activities. Companies and artists also protect the designs and trademarks of virtual goods, which extends to intellectual property rights.

The token phenomenon and the purchase of NFTs do not in themselves determine the transfer of ownership of the digital asset the token represents, nor the automatic attribution of intellectual property rights, which are recognized to the purchaser through the presence of an express license. Generative Artificial Intelligence takes on a central role, challenging the requirement of originality and traditional human authorship standards, such as the legality of using protected works in training datasets. Within this context, exceptions regarding text and data mining, contractual arrangements and data governance rules prove inadequate to ensure an equilibrium between the interests of the game. Criticisms are heightened according to the outputs of AI. They have become tokens released into the NFT market, with direct effects on the circulation and monetization of digital content.

Intellectual property within the European context is translated by a profound alignment of legal categories conceived within an analogical, human framework that limits the technological activity that characterizes an ever-evolving expansion in an unrestricted manner. The risk and lack of regulatory rules, along with the private autonomy of smart contracts and standard licenses, are based on an anachronistic vision and a creativity and artistic production that are useful for guiding behavior and investments. Within this framework, crypto art is understood as digital art on the blockchain. Through NFTs, it is classified as a frontier phenomenon in the absence of an ad hoc regulatory framework, necessitating the use of existing legal instruments as the price of a hermeneutic effort. This combines intellectual property rules that address the relationship between tokens and copyrights, licenses, limitations and exceptions, data protection and privacy regulations with known tensions between blockchain and erasure and minimization rights, rules on consumer protection and platform liability and jurisdictional and applicable law issues in cross-border contexts. These regulatory tools ultimately ensure adequate systematic coordination. However, these differences give rise to inconsistent and incomplete outcomes at the intersection of NFTs with intellectual property protection, artificial intelligence, creating thus definitional gaps, information asymmetries and various uncertain applications.

2. A Framework for NFTs, Metaverse and Crypto

The ongoing digital evolution, with its various copying and circulation dynamics is overcoming traditional models in the analog age. Blockchain technologies, the metaverse and NFTs are establishing and introducing forms of certification and provenance of digital originality that contribute to and redefine the ways in which art is created, exchanged and enjoyed.

Blockchain leverages the cryptocurrency market, which has applications in various sectors. It is a

[1] Supreme Court of the United States, Burrow-Giles Lithographic Co. v. Sarony (111 U.S. 53, 1884): https://supreme.justia.com/cases/federal/us/111/53/ based on the work of Oscar Wilde No. 18 also affirming the objective reproduction of a reality that is not a photograph, an image that ultimately reflects the author's relative choices and the artist's own sensitivity.

ledger that distributes and records transactions in a unique manner that can be altered using cryptographic techniques and consensus mechanisms. Each type of transaction is part of a blockchain that is manipulated by simultaneous interventions of a network that protects against cyber attacks. This technology connects to NFTs unique cryptographic attestations recorded on the blockchain and associated with digital content that identifies provenance metadata, unlike fungible tokens that are not interchangeable. The NFT ultimately certifies a record that refers to a work stored off-chain.[1] The immediate object of the right is an alphanumeric code, not the work itself, which, in most cases, excludes functional aspects linked to pathological situations that interrupt this correlation.

The owners of trademarks, designs and of other intellectual property rights are part of a metaverse, a digital environment in which users interact and exchange goods, experience and leverage augmented reality technologies through their avatars. Various platforms, such as Roblox and Decentraland, are based on blockchains, transforming the metaverse not only into a social space but also into an economic and creative space for users who produce content, applications and virtual environments that can be monetized and converted into NFTs. This proprietary production raises significant legal issues related to the protection of copyright on digital works, governing trademarks and distinctive signs used in virtual environments and regulating licensing agreements on platforms imposed on users. Companies are evaluating the possibility of extending the protection of registered trademarks and designs to virtual contexts. These include goods, digital services and NFTs. This framework is relevant to requests for the registration of new trademarks, the extension of existing trademarks and virtual products and services. Cases such as Nike, Abercrombie and Fitch are noteworthy, as is the phenomenon affecting the fashion world since it filed for listing on the New York Stock Exchange.

From an artistic perspective, the technology employed in blockchain is associated with digital content through images, texts, music tracks and non-fungible tokens that distinguish the original from copies distributed outside the blockchain. By creating digital works (Dray, 2022), the author first registers on a marketplace and provides a token to identify the work. After the mint is completed, the token is associated with a digital file. In the case of NFTs, cryptocurrency entrepreneur Sina Estavi, also CEO of Bridge Oracle and Cryptoland, purchased the NFT for $2.9 million. After the sale, he presented the Mona Lisa in digital form for $6,800. This is a reproduction of a physical work, based on a cryptographic method that verifies the so-called token base, i.e., the link with a token to the file that occurs via a URI, i.e., an off-chain archive, that is, a digital creation that does not exist and can be replicated outside the environment in which it was created. The operation of a simple standard is costly. Public networks like Ethereum and marketplaces like OpenSea or Rarible charge a variable fee in cryptocurrency, known as a gas fee. The token, along with the digital asset, ceases the direct sale of artworks. Therefore, the auction process is used on major platforms, and payment is made in cryptocurrency such as Bitcoin or Ether (ETH).[2] Through smart contracts, it seeks to automate the execution and to recording the transactions. Bitcoin is often used to purchase speculative targets. The art market also used Ether. The Ethereum platform, the second most popular, is used for marketplace transactions and smart contracts specifically related to NFTs.

In these cases, the object of exchange is not a work as such but only an alphanumeric record, i.e. a token that certifies ownership and allows access to the file of the work, which remains stored off-chain for technical, economic and storage reasons linked to the size of the file.

There is talk of a crypto culture that records high-

[1] See recital 37 of Commission Recommendation (EU) 2024/915 of 19 March 2024 on measures to combat counterfeiting and enhance the enforcement of intellectual property rights, C/2024/1739, **OJ L, 2024/915, 26.3.2024:** "(…) non-fungible token is a digital asset that represents the uniqueness and authenticity of a specific digital item or content with the help of blockchain technology (…)". See also: EU Blockchain Observatory and Forum team, Demystifying Non-Fungible Tokens (NFTs), 29 November 2021, p. 4: https://blockchain-observatory.ec.europa.eu/publications/demystifying-non-fungible-tokens-nfts_en

[2] We recall the case of the OpenSea marketplace, one of the main Web3 hubs for NFTs as well as crypto-collectibles, which have been registered in various counterfeit cases. An NFT with a fake name attributed to Banksy, also recognized as inauthentic, was sold for over a million dollars. The motion graphics reworking of Picasso's Le Taureau. The Picasso Administration manages the artist's rights, having sued the creator Trevor Johns and the NFT, which was withdrawn during an auction at Christie's.

profile sales, [1] often signaling a volatile and speculative market (Schneider, 2026). [2] This market facilitates creators by giving them the opportunity to operate outside of the traditional art market channels, galleries and auction houses. In practice, the purchase involves fractions of digital works, each of which is resold separately through a single token at a favorable time, benefiting from any price increases that reflect the author's valuation. This mechanism diminishes aesthetic enjoyment and helps economic positions for a growing monetization that seeks to exploit and develop the digital art market. It appears as an investment in works motivated by, exclusive to, profit-making purposes. The legal classification of a financial product subject to a purely profit-making discipline is excluded. Traditional and digital works of art are part of a common cultural heritage. This fuels the narrative of a democratization of crypto culture. It determines a change in perspective for a digital good that entails a financial asset. Its value shifts the quality of the work and the performance of the token. This means that is modified the framework of artistic value and its exchange.

Parceling includes fractional works of ordinary financial instruments according to EU regulations. It considers artistic NFTs to be ordinary financial instruments. The regulation and digital financial activities (MiCA)[3] highlight a range of cases involving the attribution of credit to the issuer that does not use the NFT. Article 3 of the MiCA regulation includes terminology geared toward the regulation of financial activities. It includes the scope of a discipline covering profiles that are closely linked to a crypto-asset market. The problem of systematic framing, which creates a regulatory vacuum, remains unresolved. The digital ecosystem outlines the position of a specific discipline, dedicated to a regulatory framework for the Union in the field of copyright, the InfoSoc[4] and the DSM[5] directives that goes beyond the AI Act. The acts contribute to and update the protection regime. The documents do not directly address the phenomenon of NFTs, which leaves key issues unresolved, such as the qualification of certificates of autonomous works and aspects relating to the exhaustion of rights.

The InfoSoc Directive refers to digital works within the context of NFTs. An NFT includes the protected work and allows access to a subsequent creation, making it available through a platform that also integrates acts relevant to copyright, reproduction and public communication, which requires authorization from the rights holder. Tokens are not limited to a mere certificate of authenticity but directly express a creative process that identifies original digital content. In native NFTs, the work is created directly in digital form. Through tokens, the scope of works of art is identified. This classification allows for and transcends the idea of NFTs as simple technical recording and circulation tools, recognizing an artistic dimension connected to a theoretical line of the traditional protection system that reconstructs and questions the operation of the exhaustion principle with reference to NFTs (Keeling, 2003; Cottier, 2008).[6] These positions and context are recorded for the NFT as a principle that constructs a logic of

[1] The sale of Beeple's NFT digital artwork, "Everydays: The First 5000 Days," surpassed $69 million at Christie's 2021 auction, bringing massive media attention to the NFT and digital art industry globally.

[2] See the report: Dead NFTs: The Evolving Landscape of the NFT Market.

[3] Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on markets in crypto-assets, and amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937 (Text with EEA relevance), PE/54/2022/REV/1, **OJ L 150, 9.6.2023, pp. 40–205.**

[4] Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society, **OJ L 167, 22.6.2001, pp. 10–19.**

[5] Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC (Text with EEA relevance.), PE/51/2019/REV/1, **OJ L 130, 17.5.2019, pp. 92–125.**

[6] CJEU, 18 March 1980, 62/79 SA Compagnie générale pour la diffusion de la télévision, Coditel and others v. Ciné Vog Films and others, (Coditel I), ECLI:EU:C:1980:84, I-00881. 6 October 1982, C-262/81 Coditel/CinéVog Films II (Coditel II), ECLI:EU:C:1982:334, I-03381. 20 January 1981, joined cases C-55/80 and C-57/80, Musik-Vertrieb Membraun, ECLI:EU:C:1981:19, I-00147. see art. 4, par. 2 of Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs, **OJ L 122, 17.5.1991, pp. 42–46.** Art. 4, par. 2, Directive 2009/24/EC of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs (Codified version) (Text with EEA relevance), **OJ L 111, 5.5.2009, pp. 16–22.** Art. 9, par. 2 of Council Directive 92/100/EEC of 19 November 1992 on rental right and lending right and on certain rights related to copyright in the field of intellectual property, **OJ L 346, 27.11.1992, pp. 61–66.** Art. 9, par. 2 Directive 2006/115/EC of the European Parliament and of the Council of 12 December 2006 on rental right and lending right and on certain rights related to copyright in the field of intellectual property (codified version), **OJ L 376, 27.12.2006, pp. 28–35.**

materiality, losing of control over the transferred specimen.

The token's valorization and uniqueness, as well as its function identifying the digital original, allow the NFT to be assimilated to a functional level of a material support for the work. From this perspective, the sale of the token constitutes an act of putting it up for sale. It is original, suitable and determines the exhaustion of the distribution right, which makes subsequent sales on the secondary market legal, a scheme that transfers the digital context to a traditional model of figurative works.

The Court of Justice of the European Union (CJEU) (Rizzuto, 2020)[1] establishes the principle of exhaustion and assimilates the token as a discipline applicable to a computer program. Thus, software and the nature of the replicable work are intended to circulate through a plurality of identical copies, which lacks the character of uniqueness. Within this scope of exhaustion, the placing on the market of the original and a copy on the material medium that meets the requirement that allows the free circulation of the author who has received the compensation derived from his own sale is limited.

Within the context of NFTs, there is no exemplary transfer for traditional works. The token circulates as digital content. It remains accessible and reproduces the owner's control over its rights. Along with the software used to classify digital works, it shows its limitations. The sale of tokens does not integrate the work into the market, in accordance with the exhaustion objectives and as a consequence of the principle that does not apply. Thus, the very nature of a digital copy is highlighted, which does not deteriorate and transfers costs that make markets interconnected according to the risk of compromising the author's remuneration. European case law regarding the non-applicability of the exhaustion principle for NFTs conveys digital copies and pre-existing works. The reconstructions propose another path to recognizing NFTs as works of art. This perspective for the token is not limited to its function as a certificate. It constitutes the form through the digital work that it uniquely identifies. The NFT is understood as an equivalent function of the original in the digital world. Blockchain technology does not replace the work and defines the modalities of existence and circulation.

A classification allows for and takes into account NFTs, which are entirely subject to tangible works of art. The object of exchange is not a copy of an artwork but a unique digital asset, suitable for identifying the original and enabling its circulation on the market. This is an application of the exhaustion principle, which, prior to being placed on the market, has a physical copy and the author loses control over the transferred copy. The token identifies and transfers the digital original in the absence of a physical medium. From this perspective, the application of the exhaustion principle does not a priori exclude but rather requires the category to which the object of transfer belongs. From a traditional perspective, there is no copy of a work, but only a digital original itself, identifiable and transferable via the token. The NFT thus presents itself as an equivalent function of a digital original. It enables a form of circulation devoid of materiality similar to traditional artworks. Its operation is exhausted and depends on the materiality of a medium, such as the possibility of identifying the original and circulating it on the market. It follows a logic different from traditional works of art due to the new technological context used.

This is a necessary approach for the

[1] CJEU, 19 December 2019, C-263/18, Tom Kabinet, ECLI:EU:C:2019:1111, published in the electronic Reports of the cases, parr. 58 and 64. The case concerned a legal regime regarding the destruction and access to digital copies and literary works, including electronic ones. The CJEU equivalently excluded the distribution of physical support books and the provision of e-books, thus highlighting digital copies as distinct from tangible ones, which do not deteriorate with use and could also constitute and perfectly replace new copies. Circulating digital copies does not entail additional costs and/or efforts, according to the risk that it significantly impacts the economic interests of rights holders, while respecting the traditional second-hand market. The CJEU sought to clarify the objectives of communication to the public, which also makes the work available on an accessible website, effectively leaving out for users the legal act representing the offer of access upon their request.

reconstruction of copyright (Wu, 1998-1999). The traditional model is justified by the author's loss of control over the original material following the first sale. The transfer of the token to the other party does not lead to a definitive separation from the author of the work in a material sense, since digital content does not entail a definitive separation in a material sense, since digital content remains reproducible and accessible. The token identifies and circulates the digital original, placing it on the secondary market and also allowing subsequent resales, thus increasing the value of the digital artwork over time. The operation of the exhaustion principle is configured within the functional spirit of placing it on the market, thus enabling the economic circulation of the digital origin and guaranteeing the author's participation in subsequent transactions. Within this framework, the NFT performs a certification function and constitutes the legal context of the digital original, which is configured through circulation.

From an interpretative perspective, the dissemination of digital artworks to the public and their potential assimilation into digital platforms entails consequences that arise from a liability perspective. The DSM Directive makes protected content available through the reproduction and display of images associated with a token that does not meet this type of requirement. Furthermore, it is the author himself who offers his work for sale on an NFT platform, and consequently his offering to the public. This implies the authorization for the dissemination of the work, which is applied in a restrictive manner under the DSM Directive. The MiCA regulation addresses cryptocurrencies and does not appear to fill the gap associated with copyright protection. This creates an uncertain and inconsistent regulatory framework. Criticisms in this regard demonstrate the difficulty of Union law in adapting to this conceptual category. Recommendation (EU) 2024/915 of the Union has developed tools and an effective practice to prevent, identify and combat the dissemination of counterfeit content in online and digital environments. The European Commission has highlighted the ambiguous nature of emerging technologies such as blockchain, which on the one hand strengthen the traceability mechanisms of digital works and on the other amplify the circulation of counterfeit content and its global spread. This scenario raises complexities regarding consumer protection as well as the application of the Digital Services Act as a framework for anti-money laundering.

3. NFTs, Digital Works and Copyright Protection

The relationship between NFTs and intellectual property protection systematically conflicts the logic of token functioning with traditional legal categories arising from intellectual property law. It is excluded that the NFT is in itself classified as a work of genius, that is, as a blockchain-generated record referring to a specific digital content. The token is excluded from the blockchain record of the work it refers to. It does not transfer copyright and does not authorize acts of production and communication to the public unless expressly licensed (Garbers-Von Boehm, Haag & Gruber, 2022).[1] This has an impact in ownership and in the exhaustion of rights. Within an asymmetric framework of ownership of NFTs, the underlying rights and the structural criticism represented by them are aimed at goods and brands being protected by copyright without the prior consent of their owners. However, this system is exposed to phenomena of parasitic exploitation and misappropriation.

In this context, numerous disputes regarding NFTs have emerged from the US. It is worth noting the Roc-A-Fella Records v. Damon Dash case, which promoted the record company against a co-founder. The album rights were put up for auction. Jay-Z, Reasonable Doubt, held an exclusive shareholding in the company without being the owner.[2] According to the CJEU the album copyrights belong entirely to Roc-A-Fella Records. This means that Dash is exluded from disposing of and monetizing the album through NFTs without a prior authorization. Dash was recognized as having the right to transfer its shareholding. The decision thus explicitly affirms the principle, as does the sale of the NFT, which does not imply the transfer of the copyright. This confirms the clear distinction between a digital

[1] Garbers-Von Boehm, Haag and Gruber affirmed that: "(…) NFT does not necessarily mean owing the asset that it represents. Buying an NFT leads to the acquisition of a token entered on a blockchain. The purchaser of an NFT has ownership-like rights in the NFT in the sense that they can dispose of it (...)".

[2] United States District Court Southern District of New York, Roc-A-Fella Records, Inc., Damon Dash, Case No. 1:21-cv-05411-JPC, 1 July 2021: https://law.justia.com/cases/federal/district-courts/new-york/nysdce/1:2021cv05411/562168/86/

certificate and the rights to exploit the underlying work.

The dispute between Quentin Tarantino and Miramax has highlighted the inadequacy of traditional film production contracts, drafted in the analog era. The need for an evolutionary reinterpretation of the terms of an economic instrument for the new digital uses of the analog era has been highlighted. Miramax has taken action against Quentin Tarantino and the company, alleging breach of contractual obligations for copyright infringement, trademark infringement, and unfair competition. The lawsuit is based on the premise of creating the commercialization of NFTs, which constitute a further form of economic exploitation of the cinematographic work, reserving them exclusively to the producer. Quentin Tarantino has announced his intention to auction unreleased scenes from the well-known film Pulp Fiction in the form of NFTs, arguing that such an initiative falls within the scope of reserved rights associated with publication and screenplay. The settlement agreement has in fact left the underlying legal issue unresolved as well as the creation of NFTs, transferring the rights reserved to the registered author and the exclusive rights for exploitation which belong to the producer (Adam, 2021; Margaret Taylor, 2021).

Also noteworthy is the Free Holdings v. McCoy case,[1] which highlighted the ambiguity of claims arising from the NFT market based on the token's economic and symbolic value, which is linked to an alleged priority that legitimizes ownership. Kevin McCoy created the work "Quantum" on the Namecoin blockchain in 2014, which was also considered the first NFT. In 2021, McCoy himself placed the new NFT on Ethereum. It was subsequently sold at auction at Sotheby's for $1.47 million. Free Holdings registered a new entry on Namecoin, thus claiming that the original token holder had filed a lawsuit against Kevin McCoy and the auction platform, seeking confirmation of ownership of the token associated with the "Quantum" work, as well as a declaration of invalidity and/or illegitimacy of the NFT that was subsequently listed on Ethereum. The damages were related to the sale concluded by Sotheby's. The federal court dismissed the plaintiffs' claims. It found that the company had failed to provide sufficient evidence of exclusive ownership of the token. The token is originally registered on Namecoin, demonstrating the existence of a legal right capable of establishing the damages claims. The related decision clarified the technical registration of an entry on the blockchain as sufficient in itself to prove an exclusive right. Within this claim, Free Holdings appropriated its own economic and symbolic value associated with the first NFT without an adequate evidentiary basis.

The Metabirkin case[2] concerned the protection of a well-known trademark, offering thus interesting insights worthy of mention. Mason Rothschild reworked a Birkin bag model, modifying the colors, materials and decorations. It remained precise and recognizable to the NFT, also marketing the MetaBirkin name at prices comparable to traditional bags. Hermès complained of trademark infringement and documented media and consumers, believing that it was attributable to its fashion house. Rothschild requested the inadmissibility of the action invoking the protection of freedom of expression guaranteed by the First Amendment. The court held that the MetaBirkin constituted expressive digital artworks eligible for First Amendment protection, thus rejecting Mason Rothschild's motion for dismissal. Ultimately, it held that Hermès had provided sufficient evidence to demonstrate the use of the MetaBirkin name, which lacked any real artistic relevance misleading with respect to the content of original works. Mason Rothschild was liable, according to the court, for trademark infringement and dilution through cybersquatting. Mason Rothschild registered and used the domain metabirkin.com. This decision was systematically guided. The court clarified the use of NFTs, which were not in themselves devoid of artistic character. It also viewed the token as a means of certifying authenticity and traceability of its transfers, without exclusive commercial use. This is a reductive conception of the NFT, which required digital certification, which did not consider the possibility that the token was not limited to certifying the pre-

[1] United States District Court Southern District of New York, Free Holdings Inc., Kevin Mccoy and Sotheby's, Inc., Case 1:22-cv-00881-JLC, 17 March 2023: https://www.nysd.uscourts.gov/sites/default/files/2023-03/Free%20Holdings%20vs%20mccoy.pdf

[2] United States Southern District Court of New York, Hermès International v Mason Rothschild, Case 1:22-cv-00384-JSR, 8 February 2023: https://www.wipo.int/wipolex/en/judgments/details/1841

existing work but contributed to a legal structure regarding the mode of circulation. The judge's decision note noted the assessment that changed the NFTs' application to virtual goods, such as the Birkin bag used in digital environments.

The relevant solutions emerging from American case law have developed a different regulatory framework with significant interpretative guidelines, despite the limited scope of litigation in the NFT sector. A common trend was distinguished between the circulation of the token and the intellectual property rights on an underlying work, such as the NFT to a function of certification, traceability and economic valorization of a suitable autonomous asset, which directly impacts the ownership of the rights.

The decisions from the EUIPO and the application for registration of the Burberry pattern distinguished itself from digital goods and services in the metaverse that included NFTs. On 8 February 2023, the office rejected a request that deemed a decorative motif devoid of distinction for a significant portion of the goods and services indicated, such as those related to NFTs and virtual goods. Digital content related to avatars and video games is registered and admitted on a limited basis, excluding the claimed categories. [1] The assessment of distinctiveness in the context of the European administration was an attempt to frame the use of distinctive signs in virtual environments and also in the NFT market. The EUIPO's approach demonstrated a tendency to treat digital and virtual goods as functional projections of corresponding real goods that applied the new forms of circulation within trademark law and without recognizing NFTs as an autonomous classification in themselves. This approach was confirmed in the Trade Mark Guidelines 2023-2024. At that time, the office classified NFTs as certified digital assets registered on blockchain, having their own authentication function for a digital asset that was distinct from the token itself. [2] The NFT did not coincide with the creative object it referred to and constituted a means of certification through identification. Consequently, the commodity classification objectives indicated digital content, thus linking virtual goods and digital content categories.

4. Doubts About the Phenomenon of Plurality of Approaches Found in Practice

American case law has valued NFTs as instruments that certify and exploit economic perspectives, emphasizing also the distinction between copyright and underlying work. The Roc-A-Fella v. Dash case falls within this perspective. In it, the court highlighted that a token could not transfer the copyright and an ancillary function for the NFT that respected the exploitation of the work. In Europe, a systemic approach has been demonstrated that considers NFTs as a genuine technology that guarantees transparency in the digital works market, lacking independent legal qualification. The MiCA regulation, which excluded NFTs from the application of financial instruments that place the token's function on creative content, falls within this perspective.

The case law in the previous paragraphs was not exhaustive, but merely indicative, given the complexity of the phenomenon that has pushed the questioning and classification of NFTs beyond their simple digital aspect. It is clear that tokens were not intended as an authentic vehicle for exchange, but rather as elements participating in the work, which lies somewhere between artistic digital creation and intangible cultural heritage. This perspective is reflected in the experience of crypto culture and the practices of, for example, museums, where tokens are not limited to documentation, traces of the circulation of their work, but also contribute to

[1] EUIPO, decision of 8 February 2023, Application No. 018647205, Burberry Limited.

[2] EUIPO, Guidelines for Examination in the Office, Part B-Examination, Section 3-Classification: https://guidelines.euipo.europa.eu/2302857/1790338/trade-mark-guidelines/section-3-classification, par. 6.25 "Downloadable goods and virtual goods" from 31 March 2023 (ed. 2023–2024). The Guidelines highlighted that the 12th edition of the Nice Classification also included the related expression "downloadable digital files authenticated by non-fungible tokens [NFTs]" in Class 9 and defined the NFT as "a cryptographic tool that uses a blockchain to create a unique, non-fungible digital asset which can be owned and traded (...)". And the office clarified that the NFT are used as: "(…) digital certificates to record an interest of some kind in relation to an item (…) downloadable digital art, authenticated by an NFT (…) minting of NFTs (…)".

the ways in which culture is presented, enjoyed and evaluated.

5. AI Act and the Human Ontological Crisis Toward Generative AI

The individual dimension in the era of generative AI emerges as a result of the interaction between human subjects, data, algorithmic models and technical infrastructures. From this perspective, "distant writing" demonstrates the definitive overcoming of the romantic figure of the author, a configuration of creativity, design and engineering activity at the prompt (Floridi, 2025). The work is not merely the exclusive product of a human subject, traditional in the very term of "author", which does not necessarily coincide with an identifiable individual in a complex process. The output respects the concepts of originality and authorship, which inevitably assume various other contours within a context in the absence of a preliminary definition of the notion of authorship as the legal protection that risks and establishes the protection of an inadequate legal fiction, a reality for creative processes.

For the author, the ontological crisis lies alongside a growing normative fragmentation of the legal instruments that conceive and regulate human creativity. It is proved inadequate to capture the complexities and peculiarities of algorithmic processes. Within this context, authorship and originality are exhausted by the law without leading to coherent outcomes applied to algorithmic generation processes. The problems of generative AI in systems that work with neural networks are inspired and reproduced by the functioning of the human brain and the created works (Smirnova et al., 2023). Generative AI is different from assistive AI. [1] AI systems are capable of generating autonomous content that merely assists humans in the creative decision-making process without replacing their central role.

The existing rules regarding copyright and the possibility of granting a form of protection to output seem straightforward for works. Furthermore, the rules require and attribute authorship directly to the system, a prompt that considers humankind as a fundamental requirement. The EU has taken a position through the AI Act. [2] Some arguments and questions remained unresolved within the regulation, given that it concerns copyright protection within a series of provisions such as the provisions of positive law, through Article 53. The relationship between AI and copyright emerges through main orders and criticisms. Thus, a dispute arises over the use of protected works in datasets used to train artificial intelligence systems.

Among the most significant litigation in the field of generative artificial intelligence and copyright protection was the case brought by Getty Images v. Stability AI in the United Kingdom. In this case, the images were developed according to the Stable Diffusion model to reproduce without authorization millions of images that were protected for training purposes. This is similar to The New York Times v. Open AI (and Microsoft) case in the United States, which involved the use of newspaper articles relating to the training of linguistic models and the alleged reproduction of content coinciding with original works. This is the spirit of the actions brought by individual authors. The class action lawsuits filed by illustrator Sarah Andersen against Stability AI, Midjourney, and DeviantArt, also alleged the unauthorized use of artistic works to train generative models of their images.

The cases brought by authors Paul Tremblay and Mona Awad v. OpenAI, as well as the related action brought by Authors Guild v. OpenAI, concerned the systematic use of protected literary works within datasets and training processing. The related developments are occurring in the publishing and information sector, as demonstrated by Dow Jones & Company v. Perplexity AI, regarding the automated reprocessing of journalistic content through related AI-based search systems. The disputes differed in subject matter but included common legal issues, such as the classification of training as an act of reproduction, which is relevant for copyright purposes. The applicability and

[1] Par. 14 of **European Parliament resolution of 20 October 2020 on intellectual property rights for the development of artificial intelligence technologies (2020/2015(INI)).**

[2] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act) (Text with EEA relevance), PE/24/2024/REV/1, **OJ L, 2024/1689, 12.7.2024.**

exceptions in the US, as well as those for text and data mining in European Union law, ultimately lead to economic exploitation of the generated output, as well as to licensing mechanisms and collective remuneration. There is a growing body of evidence recognizing a form of direct authorship to artificial intelligence systems with reference to output generated without human intervention. The central point consists in the establishment of a creative process that autonomously leads to an algorithmic system protected by current copyright, that is, within an affirmative case that attributes to the relative ownership (Bonadio & Lucchi, 2019).

Article 53 of the AI Act requires providers to use AI models for purposes consistent with European copyright law, which respects the reservation of rights exercised under the DSM Directive and transparency obligations for the use of content protected under training processes. The provisions, therefore, aim to strengthen traceability and accountability, as a result of formulating broad prescriptive terms, leaving open the operational uncertainties of territorial fragmentation of rights and the lack of unified registers of protected works in the absence of harmonized criteria for compensation and licensing. The regulation limits itself to and incorporates a passive regime for text and data mining that outlines the DSM Directive without precisely adapting to the specificities of generative AI.

The AI Act presents a certain gap since it does not address the issue of attribution of authorship and works generated by artificial intelligence systems. It also limits itself to regulating the security requirements and risk management of systems without impacting the ownership regime for creative results. The legal classification of AI-generated works remains entrusted to traditional copyright instruments according to the cases developed by case law. Within this context, the differences between registered jurisdictions require the recognition of authorship protection. Continued originality is understood as an expression of the author's personality and as the result of choices attributable to an identifiable individual. Consequently, human intervention imposes limits on the provision of generic inputs, as well as the initiation of a generative process without effective control over expressive and final choices, such as attribution of authorship, which is problematic. This approach, as well as the anthropocentric tradition of copyright, raises many doubts and risks excluding the protection of a growing category of creative basis for new intentional modalities between man and machine.[1]

The legal implications associated with tokens and the output of artificial intelligence systems are based on a regulation, which fails to clarify the measures and content produced by AI models that ultimately constitute non-fungible tokens for digital assets with independent economic value. The ownership of the rights to the work inherent in the token remains unresolved, as does the legitimacy of the subsequent commercialization of NFT markets. This is a gap not only in theory but also in practice. Tokens presuppose an economic perspective through the existence of an asset susceptible to appropriation and legal exchange, which requires the identification of a party that legitimizes what it disposes of. The generated AI output does not constitute a protected work due to the lack of human creative input, which ultimately requires a foundation for its circulation as an exclusive asset. Copyright as the economic value of NFTs risks a form of technological exclusivity that is not supported by intellectual property rights. The dissociation between the technological regulation of the AI Act and intellectual property law risks producing a fractured regulation that legitimizes and incentivizes the use of generative systems that comply with transparency, management and security requirements. However, the legal classification of the creative results released to the market remains unresolved, creating uncertainty for artists, platforms, buyers and operators.

The organic coordination between the AI Act, copyright and cryptocurrency regulation creates a significant regulatory vacuum. The tokens risk creating negative economic effects. The legal qualifications also seem uncertain, allowing the circulation and monetization of unoriginal

[1] CJEU, 17 January 2012, C-302/10, Infopaq International, ECLI:EU:C.2012:16, published in the electronic Reports of the cases. 1st December 2011, C-145/10, Painer, ECLI:EU:C:2011:798, published in the electronic Reports of the cases. 1st March 2012, C-604/10, Football Dataco Ltd, ECLI:EU:C:2012:115, published in the electronica Reports of the cases.

outputs. This allows for the unauthorized use of protected works in the training phase. The tokens end up performing a certification and apparent legitimacy function that strengthens purchasers' confidence consolidating thus proprietary expectations without clarifying the rights they assert over the digital work. The AI Act does not provide specific transparency requirements, nor does it require the disclosure of a subsequent token and the outputs generated, which introduce suitable legal traceability mechanisms for linking the token to the legality of the creative process and the chain of rights underlying the work. The associated risk of a disconnect between AI-compliant technology and the legality of digital content, and the potential consequences in terms of legal uncertainty and information asymmetries, are responsible for intermediaries and an increase in litigation.

6. Conclusions

From the previous paragraphs, we understand that the NFT phenomenon, following its registration in 2022, has been accompanied by marked enthusiasm and significant, yet diminished, speculative dynamics. The initial promises concerned the valorization of digital assets through blockchain technology, which caused the prices of numerous projects to plummet and led to a widespread erosion of user trust. There are many arguments in this regard, as well as the impact of scams and opportunistic practices on a fragile structure linking tokens with digital content to a metaverse and/or Web3 ecosystem, i.e., a shift in technological priorities toward generative artificial intelligence. The legal framework in this regard presents many gaps and a progressive failure about the exclusive ownership of digital assets, that is, a social and cultural value that contributes to the economic and symbolic sustainability of NFTs.

This is an element of continuous discontinuity within an overall recessionary framework attributable to political developments and interventions by the United States, especially after the re-election of President Trump, who has pursued a permissive path towards cryptocurrency activity. The context and approval of the Genius Act [1] has assimilated stablecoins to traditional means of payment.[2] As a sign of media and/or political visibility, the NFT market has continued to experience negative trends, recording a decline exceeding thirty eight percent by the end of 2025 compared to previous years. The reduction in the phenomenon requires a systemic reflection, from which emerges the technological innovation that redefines the methods of circulation and production of digital content, ensuring the stability and economic sustainability of an adequate regulatory framework capable of regulating the creation, circulation and exploitation of tokens that are non-fungible, as well as the market and its expectations. Regulatory coordination is precise and predictable, thus contributing to dampening investor confidence, which negatively impacts market maturation. This confirms the sustainability of emerging technologies, which depend on technical innovation and the ability of the law to provide stable, consistent and intelligible regulatory frameworks.

NFTs, crypto culture, blockchain and artificial intelligence systems do not represent regulatory uncertainty but rather a space for innovation. In its native form, NFTs do not merely certify a pre-existing norm. Rather, they constitute a technological legal space for digital works that take shape and sensibly identify their circulation. Tokens and works of exploitation rights are traditional in jurisprudence and administrative practice, without exhausting the complexity of such a phenomenon.

The European context in this regard is based on the prevalence of a form that has clarified the NFT, but is not in itself decisive when the asset presents substantial characteristics. It cannot be ruled out that the types of NFT are unique and not serial. They qualified as digital works of art, bringing relevant consequences on copyright and on the protection of cultural heritage. The corresponding qualifying recognition does not bring analogous extension to traditional categories but requires an interpretative adaptation that takes into account the intangible, distributed nature of the asset. The criticisms are varied and systemic, such as the information deficit, the financialization of digital assets, the difficulty of enforcement and the environmental impact. These arguments highlight the need for a coherent and coordinated regulatory framework. A systematic connection between the regulation

[1] S.394 - Genius Act of 2025: https://www.congress.gov/bill/119th-congress/senate-bill/394

[2] With the new presidency, Trump himself spoke of a personal meme coin, a collection of NFTs called "Trump Bitcoin Digital Trading Cards," following a similar initiative with the first lady.

of cryptocurrency activities, such as copyright and the regulation of artificial intelligence has brought uncertainty to the market. This requires a systemic intervention capable of adequately explaining technical innovation within foreseeable legal categories.

These cases are considered to be anthropocentric assumptions for the traditional conception of copyright, which ultimately suggests abandoning existing categories. The NFT thus embodies a creative project with a specific expressive configuration, understood as a digital work of art inserted into the technological ecosystem that ultimately conditions the modalities of existence, attribution and circulation.

In sum, there is no overall need for systematic realignment. Even if this is not limited to financial risk governance linked to a crypto-asset capable of recognizing and enhancing the cultural and creative dimension of non-fungible tokens. Effective coordination between existing regulatory instruments and the development of ad hoc regulations prevents NFTs from remaining confined to a conceptual limbo between technology, finance and art. Instead, it ensures legal certainty, regulatory proportionality and effective protection of the interests involved. It functions as a precise, coherent regulatory framework that contributes to and restores stability to the current market. Consequently, the search for legal certainty for artistic expression, born precisely in the digital environment, is an integral part of the contemporary cultural landscape.

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