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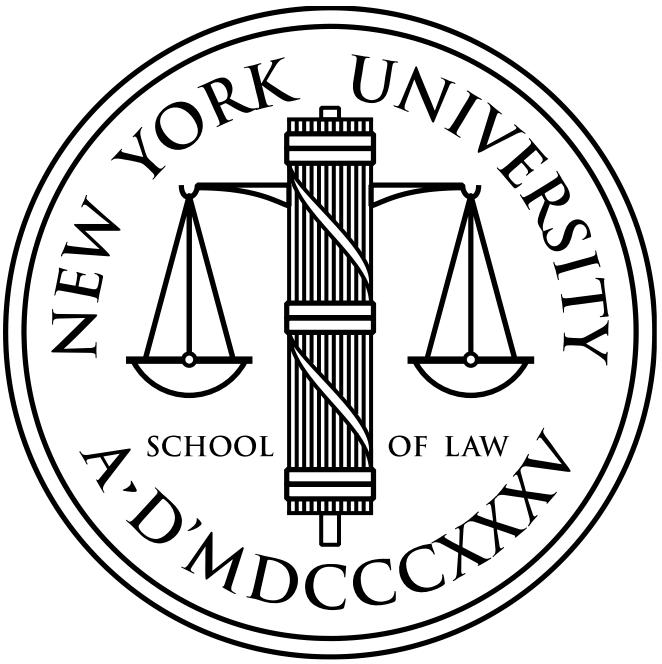

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I WANT MY NFT!: HOW AN NFT CREATIVE COMMONS PARALLEL WOULD PROMOTE NFT VIABILITY AND DECREASE TRANSACTION COSTS IN NFT SALES

MOLLY MARIAS*

Non-fungible tokens ("NFTs") have ushered in a novel era of creative expression and ownership, but with their introduction comes an array of unprecedented legal issues. Neither traditional copyright nor property law conforms to NFT creator or purchaser expectations, and these conflicting expectations hamper the efficiency of NFT sales. Authors of original works may be unprotected from purchasers subsequently minting NFTs from those original works, and NFT purchasers will often be without remedy should an NFT creator mint multiple, substantially similar NFTs from the same underlying asset. NFT purchasers face an additional information hurdle that hampers their ability to negotiate efficiently. Namely, contrary to most mainstream media coverage, NFT ownership does not correlate to a proprietary interest in the NFT's underlying asset. Smart contracts are often touted as the preeminent solution to this efficiency quandary, but they do little to lower the transaction costs associated with the information asymmetry between NFT creator and purchaser. Further, while smart contracts are an efficient mechanism to implement the NFT's terms of sale, they are ill-equipped to equalize an unbalanced negotiating process.

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An NFT Creative Commons parallel ("NFT CC") is the solution to these issues. With an NFT CC, creators would be able to affix established NFT CC licenses to their NFTs, pre-sale. These licenses would define, and readily convey, the NFT creator's and purchaser's legal rights in the NFT and its underlying asset and would allow for a more informed and efficient negotiating process. The licenses could range from full copyright transfer, to no copyright transfer, to more moderate "reciprocal ongoing licensing transfers" ("ROLTs"), which would enable NFT creators and purchasers to share ongoing copyright interests in the NFT. The NFT CC licenses' transparency would fundamentally lower NFT transaction costs by remedying the negotiating parties' information asymmetry. Injecting clarity and predictability into NFT transactions would not only augment the NFT market but would also protect NFTs' viability as an emerging asset class worthy of investment in the long term.

INTRODUCTION

On March 10, 2021, Christie's sold the digital artist Beeple's collection of Non-fungible tokens ("NFTs"), "Everydays—The First 5000 Days," at auction for $69.3 million, in what critics dubbed a "historical inflection point" for the

art world.[1] Two months later, an NFT of the infamous viral video "Charlie Bit My Finger" sold for over $700,000.[2] Paris Hilton collaborated with the artist Blake Kathryn on a collection of NFTs, which sold for more than $1.1 million,[3] and she recently backed an NFT nonprofit worth $300 million.[4] Even Martha Stewart joined the cryptocurrency art space, minting NFTs from images of iconic Halloween costumes and selling them on her e-commerce site.[5] For better or worse, NFTs went from "cult to culture in 2021," and their stark rise in prominence makes defining the NFT legal space imperative in order to maintain long-term NFT viability.[6]

NFTs have ushered in a novel era of creative expression and ownership, but with their introduction comes an array of unprecedented legal issues.[7] Neither traditional copyright nor property law conforms to NFT creator or purchaser expectations, and these conflicting expectations hamper NFT sales' efficiency.[8] On the one hand, an author may be unprotected if a purchaser mints an NFT from the author's original work and subsequently sells it.[9]On the other hand, a purchaser may be disadvantaged and without remedy if they are unclear about the scope of

[1] Scott Reyburn, *JPG File Sells for $69 Million, as 'NFT Mania' Gathers Pace*, N.Y. Times (Mar. 25, 2021), https://www.nytimes.com/2021/03/11/arts/design/nft-auction-christies-beeple.html.

[2] Christina Morales, *'Charlie Bit My Finger' Is Leaving YouTube After $760,999 NFT Sale*, N.Y. Times (May 30, 2021), https://www.nytimes.com/2021/05/24/arts/charlie-bit-my-finger-nft-auction.html.

[3] Sarah Cascone, *Here Are the 14 Most Expensive NFTs Sold to Date, From Beeple to Mad Dog Jones and Beyond*, ArtNet (June 21, 2021), https://news.artnet.com/market/updated-most-expensive-nfts-1980942.

[4] Joanna Ossinger, *Paris Hilton and Bill Ackman Back $300 Million NFT Foundation*, Bloomberg (Nov. 23, 2021, 7:00 AM), https://www.bloomberg.com/news/articles/2021-11-23/paris-hilton-and-bill-ackman-back-300-million-nft-foundation.

[5] Nashia Baker, *Martha Launched a Halloween-Inspired Collection of NFTs That You Can Bid on Right Now*, Martha Stewart (Oct. 19, 2021), https://www.marthastewart.com/8170277/martha-stewart-nft-halloween-launch.

[6] Ryan Zurrer, *Why I Spent $29M on a Beeple*, CoinDesk (Jan. 21, 2022, 4:26 PM), https://www.coindesk.com/layer2/culture-week/2021/12/16/why-i-spent-29m-on-a-beeple/.

[7] Gregory J. Chinlund & Kelley S. Gordon, *What are the Copyright Implications of NFTs?*, Reuters (Oct. 29, 2021, 11:41 AM), https://www.reuters.com/legal/transactional/what-are-copyright-implications-nfts-2021-10-29/.

[8] Gary P. Kohn, *Feature: NFTs and The Law*, L.A. Law. 18, 18 (2021); *see generally* Warren J. Samuels, *The Coase Theorem and the Study of Law and Economics*, 14 Nat. Res. J. 1, 6 (1974) (discussing Coase's theorem on the economic significance of market rights, and the impact these market rights have on protected interests and subsequent bargaining efficiency).

[9] Lynne Lewis et al., *Non-Fungible Tokens (NFTs) and Copyright Law*, Bird & Bird (June 2, 2021), https://www.twobirds.com/en/news/articles/2021/australia/non-fungible-tokens-nfts-and-copyright-law.

their NFT ownership rights.[10] Because NFT ownership does not automatically vest the purchaser with a proprietary copyright interest, an NFT creator could mint additional NFTs from the same underlying asset, which may de-value the original purchaser's NFT.[11] This phenomenon runs counter to most mainstream media coverage—which suggests some form of purchaser proprietary interest—so NFT purchasers are often ill-informed, and this hampers their ability to negotiate effectively.[12]

As marketplaces work in real-time to facilitate transactions between NFT creators and purchasers, they are hobbled by information inequities and inefficient transaction infrastructures.[13] Early-stage NFT jurisprudence has coalesced around traditional principles of copyright law in order to establish NFT creator rights, and purchasers occasionally negotiate copyright transfer and licensing rights through private agreements.[14] However, these private contracts, coupled with the tensions between creator rights and purchaser expectations, are inefficient and raise NFT sales' transaction costs.[15] Smart contracts are typically touted as the preeminent solution to this efficiency quandary, but smart contracts between an NFT creator and purchaser are subject to the same asymmetrical information constraints that plague traditional private agreements.[16]Efficient implementation does not equate

[10] *Id.*

[11] *See generally* Mark A. Lemley, *IP in A World Without Scarcity*, 90 N.Y.U. L. Rev. 460, 482 (2015) (discussing traditional economic theory's relationship to scarcity and purchaser incentives, noting IP's role in artificially raising the cost of imitation to make imitation at least as costly as creation, and highlighting the need to protect purchaser investments in a digital age with limitless reproduction potential).

[12] Will Garton & Farah Mukaddam, *NFTs and Intellectual Property Rights*, Norton Rose Fulbright (Oct. 2021), https://www.nortonrosefulbright.com/en/knowledge/publications/1a1abb9f/nfts-and-intellectual-property-rights.

[13] Ali Dhanani & Chris Sabbagh, *How Nonfungible Tokens Could Disrupt the Legal Landscape*, Law360 (Mar. 22, 2021), https://plus.lexis.com/document?crid=d39383e7-199f-441f-9d18-74a4f30f675d&pddocfullpath=%2Fshared%2Fdocument%2Fanalytical-materials%2Furn%3AcontentItem%3A628F-B921-F81W-20BD-00000-00&pdsourcegroupingtype=&pdcontentcomponentid=122100&pdmfid=1530671&pdisurlapi=true.

[14] Lewis et al., *supra* note 9.

[15] Lennart Ante, *Non-Fungible Token (NFT) Markets on the Ethereum Blockchain: Temporal Development, Cointegration and Interrelations* 22 (Blockchain Research Lab Working Paper Series No. 22, 2021).

[16] Ling W. Cong & Zhiguo He, *Blockchain Disruption and Smart Contracts, available at* https://ssrn.com/abstract=2985764 (noting that while automatically self-executing smart contracts are an efficient tool to implement contractual terms based on the "decentralized consensus" (i.e., the universally accepted state of the world), establishing the "decentralized consensus" remains

to an efficient negotiating process.[17] Accordingly, while smart contracts are an efficient mechanism to implement the NFT's terms of sale, they are ill-equipped to equalize an unbalanced negotiating process because the parties must still define the smart contract's terms.[18] At present, the NFT market infrastructure remains murky.[19]

Ultimately, protecting NFTs as a unique asset and investment opportunity requires a new legal paradigm that both embraces the spectrum of alienable ownership rights and facilitates clear and efficient information exchange. Further, the paradigm should capitalize on emerging technologies and lend itself to default purchasing arrangements. An NFT Creative Commons parallel ("NFT CC") meets this high burden. With an NFT CC, creators would be able to affix established NFT CC licenses to their NFTs, pre-sale. These licenses would define and convey the NFT creator's and purchaser's legal rights in the NFT and its underlying asset, allowing for a more informed and efficient negotiating process. The licenses could range from full copyright transfer to no copyright transfer, to what this note dubs more moderate "reciprocal ongoing licensing transfers" ("ROLTs"), which would enable NFT creators and purchasers to share ongoing copyright interests in the NFT.

The transparency of NFT CC licenses would fundamentally lower NFT transaction costs by remedying the negotiating parties' information asymmetry; in doing so, it would also offer the necessary infrastructure on which to build

predicated on "record-keepers' observing and receiving greater amount[s] of information."). In other words, the smart contract's terms reflect agreed-upon reality, but that reality is defined by individuals acting on the information available to them—it is same reality reflected in traditional contractual ordering. *See id. See also* Stefaan G. Verhulst, *Information Asymmetries, Blockchain Technologies, and Social Change: Reflections on the Potential (and Challenges) of Distributed Ledgers for 'Market for Lemons' Conditions*, Medium (July 24, 2018), https://sverhulst.medium.com/information-asymmetries-blockchain-technologies-and-social-change-148459b5ab1a (highlighting that while smart contracts have the potential to reduce instances of information asymmetry associated with compliance and enforcement (by automating these processes), they may also "create new or reinforce existing information asymmetries instead of dismantling them…").

[17] *See* Benjamin F. Blair & Tracy R. Lewis, *Optimal Retail Contracts with Asymmetric Information and Moral Hazard*, 25 RAND J. Econ. 284, 284–85 (1994) (discussing information asymmetries that arise when one party has private information).

[18] *See id.*

[19] *See generally* Ante, *supra* note 15, at 15 (observing that "many…legal and technical issues of NFTs remain open…and the legal rights to NFTs are insufficiently clarified.").

a sustainable, reliable, and efficient NFT marketplace.[20] Injecting clarity and predictability into NFT transactions would not only augment the NFT market but would also protect NFTs' viability as an emerging asset class worthy of investment in the long term.[21] In order to appreciate an NFT CC's utility and advantages, Part I of this note will review foundational NFT technology and transaction practices in order to contextualize NFT legal issues. Part II will then discuss NFT copyright implications, and Part III will highlight core NFT legal tensions. Part IV will examine an NFT CC's conceptual framework and discuss potential NFT CC default licenses—licenses which could exist on a spectrum of full copyright transfer from creator to purchaser to no copyright transfer at all. Part IV will also proffer the unique NFT CC licensing options that would enable the aforementioned reciprocal ongoing licensing transfers ("ROLTs"). Finally, before concluding, Part V will address pertinent NFT policy implications and discuss an NFT CC's sociocultural significance.

I
NFT Background & Transaction Mechanisms

Virtually any original work of authorship ("original work")—be it a digital or physical work of art, piece of music, written work, etc.—can be an NFT, and that original work is referred to as the NFT's "underlying asset."[22]The individual who creates an NFT is distinguishable from the individual who makes, and/or retains a copyright interest in, the original work.[23] Authors of original works may create NFTs from those works—and thus become NFT creators—but the NFT creator

[20] *See* Samuels, *supra* note 8.

[21] *See id.*

[22] In fact, even this Note is an NFT. It is listed here: https://opensea.io/collection/i-want-my-nft. *See* Copyright Act of 1976, 17 U.S.C. § 101 (1978) (referring to "original works of authorship" in the "definitions" section); *see also* Jones Day Commentaries, *NFTs: Key U.S. Legal Considerations for an Emerging Asset Class*, Jones Day (Apr. 2021), https://www.jonesday.com/en/insights/2021/04/nfts-key-us-legal-considerations-for-an-emerging-asset-class (using the term "underlying asset" when referring to the original work from which the creator minted the NFT).

[23] *See* 17 U.S.C. § 201(b) (1978) (discussing "works made for hire"); *see also* Scott K. Zesch, *Application of "Works for Hire" Doctrine Under Copyright Act of 1976 (17 §§ 101 et. seq.)*, 132 A.L.R. Fed. 301 (1996) (noting that generally the party who actually creates the work is the work's author (see 17 U.S.C. § 102) and that copyright ownership initially vests in that author (see 17 U.S.C. § 201(a)), but that under 17 U.S.C. § 201(b), if a work is made for hire, the employer or other person for whom the work was prepared is considered the author and copyright holder).

may also be a different individual from the author entirely.[24] This note will refer to the person who creates the NFT as the "creator" and the author of an original work as the "author" in order to highlight the difference between creating an NFT and making the original work on which the NFT is based.

A. NFT Basics & Blockchain

NFTs are assets created using blockchain technology.[25] Once a creator decides to create an NFT, the creator will first need to "mint" that work.[26] Minting is the process of validating the original work's information by scanning it with the appropriate software so that it may be recorded as a unique coded transaction on the blockchain.[27] The "chain" of the blockchain is akin to a public ledger, and each "block" represents a specific transaction.[28] On the blockchain, the NFT may represent ownership of both tangible and intangible items.[29] Unlike fungible currencies, whose values are comparable to each other, NFT values are unique, individualized, and cannot be interchanged.[30] To ensure individualization, each NFT has a "hash" associated with it—a string of numbers and letters that serve as the NFT's unique digital fingerprint.[31] Through NFTs, these hashes enable creators to transform digital works of art and other collectibles into one-of-a-kind, verifiable goods which may be bought, sold, and traded.[32] Though the scanning technology that tokenizes original works and uploads them to the blockchain to create NFTs is not itself novel, NFTs have only recently entered the mainstream art world and cultural conversation in a meaningful way.[33]

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[24] *See* Jones Day Commentaries, *supra* note 22.

[25] Mitchell Clark, *How to Create an NFT—and Why You May Not Want To*, Verge (June 6, 2022, 8:00 AM), https://www.theverge.com/22809090/nft-create-opensea-rarible-cryptocurrency-ethereum-collectibles-how-to.

[26] *Id.*

[27] Clark, *supra* note 25; *see generally* Polygon, https://mintnft.today/ (last visited Feb. 27, 2022) (an example of NFT minting software).

[28] *Id.*

[29] *Id.*

[30] Chinlund & Gordon, *supra* note 7.

[31] Lyle Daly, *What is Proof of Work (PoW) in Crypto?*, Motley Fool (Dec. 3, 2021, 12:16 PM), https://www.fool.com/investing/stock-market/market-sectors/financials/cryptocurrency-stocks/proof-of-work/.

[32] *See id.*

[33] *See* Clark, *supra* note 25; *see also* Marco Iansiti & Karim R. Lakhani, *The Truth About Blockchain*, Harv. Bus. Rev. 120, Jan.-Feb. 2017.

B. NFT Marketplace Sales

Typically, once minted, creators must choose whether to sell their NFTs on an online marketplace or privately via smart contracts.[34] The creators who select marketplaces typically choose those compatible with the Ethereum blockchain.[35] The Ethereum blockchain employs the "Proof of Work" system, which uses each NFT's unique cryptographic fingerprint as a marker to verify all blockchain transactions.[36] As an initial investment, creators usually compensate the "crypto miners" who write the creator's newly minted NFT onto the blockchain with the cryptocurrency specific to the blockchain on which they are working.[37]

To list an NFT on an established marketplace, creators first upload the file they wish to mint as the NFT and then fill-in additional information about the NFT's properties and statistics.[38] These statistics may include basic descriptive information, like the work's medium and date, or may extend to private "unlockable content" available to only the NFT purchaser.[39] Unlockable content may include coded maps for the purchaser to follow and find additional pieces of artwork, opportunities for the NFT creator to tell the purchaser a story, or a link to an additional certificate of authenticity.[40] Once the creator enters this descriptive information and clicks "Create," the NFT officially exists on the blockchain.[41] The creator can then list and sell the NFT for whatever price they choose.[42]

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[34] Iansiti & Lakhani, *supra* note 33, at 126.

[35] *See* Clark, *supra* note 25.

[36] *See* Jeffrey Craig, *Crypto Minting vs. Mining: What's the Difference?*, Phemex (Aug. 7, 2021), https://phemex.com/blogs/crypto-minting-vs-crypto-mining.

[37] Clark, *supra* note 25 ("…every transaction on the Ethereum blockchains costs fees that are paid to the miners. These fees are called 'gas,' and the amount of gas [needed] for a transaction can vary significantly."). While NFT payment systems and cryptocurrency are fascinating, these payment systems and their associated legal issues are complex and beyond this paper's scope. Suffice it to say, NFT creators typically set up "wallets," which are applications that store cryptocurrencies as well as minted or purchased NFTs. *Id.* These wallets are accessible via a browser extension, and once a creator sets up a wallet and downloads the extension, the creator will be able to access marketplaces compatible with the wallet. *Id.*

[38] *Id.*

[39] *Id.*

[40] *Unlockable content in NFTs: What is it?*, Mintable, https://editorial.mintable.app/2021/09/05/unlockable-content-in-nfts-what-is-it/ (last visited Feb. 27, 2022).

[41] *See* Clark, *supra* note 25.

[42] *Id.*

C. NFT Smart Contract Sales

In contrast to marketplace sales, where the newly minted NFT itself is added to the blockchain, creators may also embed their NFTs in decentralized smart contracts.[43] A smart contract is a digital contract where the agreement between the parties is written in code that can be programmed to self-execute when the parties meet pre-defined, "triggering" conditions.[44] Creators generally upload their newly minted NFT to the smart contract, write the code for the triggering conditions, and then upload that smart contract to the platform of their choosing.[45] Then, when the NFT purchaser meets the smart contract's triggering conditions—the most common condition being the purchase price—the smart contract automatically distributes the NFT to the purchaser, encodes the transaction on the blockchain, and thus completes the transaction.[46]

II
NFT Copyright Implications

Under 17 U.S.C § 106, copyright owners have the right to reproduce, prepare derivative works, distribute copies, and publicly display or perform their works.[47] NFTs are most akin to reproductions or derivative works: works based on one or more preexisting work(s) that may be recast, transformed, or adapted.[48] Consequently, tensions often arise when the NFT creator and the original work's author are not the same person. This is because the author, as the presumed copyright holder, has the inherent authority to transform the original work into an NFT.[49] Any NFT minted from an original work without the copyright

[43] Kohn, *supra* note 8, at 22; *see* Shaan Ray, *NFTs and Smart Contracts*, Medium (May 18, 2021), https://medium.com/lansaar/nfts-and-smart-contracts-6c4c5516d5a0.

[44] Ray, *supra* note 43.

[45] *Id.*

[46] *See generally id.*

[47] 17 U.S.C. § 106 (2002).

[48] *See* 17 U.S.C. § 101 (2010) (for a definition of "derivative work"); Daniel Dubin & H. James Abe, *'Pulp Fiction' NFT Lawsuit Presents New IP Battleground*, Law360 (Dec. 20, 2021), https://www.law360.com/articles/1450002.

[49] 17 U.S.C. § 102 (1978); *see also* 1 Melville B. Nimmer & David Nimmer, Nimmer On Copyright § 2.03 (2022) ("There is but a single work of authorship, no matter how numerous and diverse the copies. . . the 'author' is the originator of the intangible material (e.g., the novel), rather than the individual who fixes it into particular copies (e.g., the stenographer)."); Carly Kessler, *Copyright Concerns for NFT Buyers, Sellers in Music Industry*, Law360 (Apr. 20, 2021, 4:48 PM), https://www.law360.com/articles/1377035.

holder's explicit permission is therefore fraudulent and amounts to a copyright infringement.[50]

Purchasers also retain no default copyright interest in the NFT's underlying asset.[51] The purchaser can prove ownership of the NFT itself, but the purchaser has no intellectual or tangible property rights associated with the underlying asset, absent specific contractual provisions in the NFT's terms of sale.[52] This outcome runs counter to most mainstream media coverage, which suggests that NFT ownership correlates to some form of proprietary interest in the NFT's underlying asset.[53]

To illustrate, Jack Dorsey, co-founder and former CEO of Twitter, auctioned and sold an NFT of his first tweet, "just setting up my twttr" for $2.9 million.[54] The sale's terms made it clear that the purchase transferred no copyright to the purchaser, and that the NFT was analogous to no more than a "virtual autograph" "signed and verified by the creator."[55] As such, the purchaser owns an NFT of the tweet but is unable to use the tweet—by copying it onto merchandise, for example—without Jack Dorsey's express authorization as the tweet's copyright holder.[56] A major source of purchaser misunderstanding, therefore, is that NFT ownership does not automatically vest an ownership interest in the NFT's underlying asset.[57]

To summarize, NFT creators do not have the inherent authority to mint an NFT from an original work without the copyright holder's express permission—lest they commit copyright infringement—and purchasers have no ownership interest in the NFT's underlying asset, absent special contractual provisions in the NFT's terms of sale.[58] While traditional copyright principles afford insight into protecting authors of original works and NFT creators, these

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[50] 17 U.S.C. § 102.

[51] Garton Mukaddam, *supra* note 12.

[52] *Id.*

[53] *Id.*

[54] Taylor Locke, *Jack Dorsey Sells His First Tweet Ever as an NFT for Over $2.9 Million*, CNBC (Mar. 22, 2021, 3:07 PM), https://www.cnbc.com/2021/03/22/jack-dorsey-sells-his-first-tweet-ever-as-an-nft-for-over-2point9-million.html.

[55] *Id.*

[56] Garton & Mukaddam, *supra* note 12.

[57] *See* Dubin & Abe, *supra* note 48.

[58] *See* 1 Nimmer, *supra* note 49.

principles do little to protect purchasers, whose expectations often conflict with the realities of NFT ownership.[59] In short, both NFT creators and purchasers must tread cautiously before, during, and after an NFT's sale.

III
NFT Legal Tensions & Current Inadequacies in NFT Sales

Copyright law and traditional property law often work symbiotically; however, the distinction between copyright ownership and "ownership of a copy" is exceedingly relevant and may raise problems when expectations associated with tangible property ownership conflict with intangible intellectual property rights.[60] NFT creation, sales, and ownership aptly exemplify these tensions and create novel issues for both the NFT creator and purchaser, most of which stem from the nature of NFTs themselves.[61] More specifically, the often unclear "bundle of rights" to which NFT creators and purchasers are entitled after an NFT sale place copyright law and property law in stark conflict.[62]

A. Creator & Purchaser Expectations Conflict in NFT Sales

To illustrate, consider two scenarios: (1) an author sells a work of art to a purchaser, and the purchaser then mints an NFT from that work of art and sells it without compensating the author, and (2) an NFT creator sells an NFT to a purchaser and then mints multiple new NFTs from the same, or a substantially similar, underlying asset, which devalues the first purchaser's NFT because that NFT is no longer functionally scarce.

Both scenarios have parallels in the non-NFT world. After all, a creator minting an author's original work as an NFT without authorization is, on a basic level, an infringing reproduction—the same sort of infringing reproduction that constitutes a copyright infringement, regardless of the reproduction's medium.[63]

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[59] *See* Kessler, *supra* note 49.

[60] *See* U.S. Copyright Off., https://www.copyright.gov/help/faq/faq-fairuse.html (last visited Mar. 4, 2022) (ownership of a "copy"…the tangible embodiment of the "work"…is distinct from the "work" itself—the intellectual property."); *see also* 1 Nimmer, *supra* note 49 ("Ownership of tangible materials is distinct from ownership of intangible rights under copyright.").

[61] *See* Kohn, *supra* note 8, at 22.

[62] Will Gottsegen, *NFT Forgeries Aren't Going Away*, CoinDesk (Dec. 20, 2021, 11:34 AM), https://www.coindesk.com/layer2/2021/12/20/nft-forgeries-arent-going-away/.

[63] Jason Mazzone, *Copyfraud*, 81 N.Y.U. L. Rev 1026, 1029 (2006).

And purchasers often find themselves in situations where their initial investments are devalued based on volatile extraneous market circumstances.[64] However, NFTs represent unique challenges to creators and purchasers because the existing copyright and property frameworks are ill-equipped to accommodate ambiguous, and often complex, NFT ownership interests.[65] Creators often do not consider that, without the copyright holder's express permission, minting an NFT from the author's original work constitutes a copyright infringement, and most purchasers do not understand the limited reality of their initial NFT investment's associated copyright.[66]

B. VARA & the Resale Right as Suggested Solutions

The small body of NFT literature that addresses these tensions largely proposes solutions rooted in copyright, and while these solutions may shield NFT creators, they do little to protect purchasers who do not understand the rights associated with their NFTs.[67] These copyright solutions suggest enshrining the NFT creator's moral rights by either (1) expanding the scope of the Visual Artists Rights Act of 1990 ("VARA") or (2) mandating a de facto resale right in all NFT sales.[68] Moral rights are the rights afforded to authors by virtue of the author's role as the maker of the original work.[69] In addition to the economic rights associated with copyright, which control access to creative works and compensation for their exploitation and utilization, moral rights give authors control over how others may use their works in non-economic ways.[70]

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[64] *See generally* Paul G. Haskell, *The Prudent Person Rule for Trustee Investment and Modern Portfolio Theory*, 69 N.C. L. Rev. 87, 103 (1990) ("The 'laws' of economics are different from the laws of nature. . . .What happened yesterday in nature is an excellent predictor of what will happen tomorrow. . . .[This] assurance does not exist with respect to past economic experience. . . .It is uncertain that the future will be consistent with the immediate past. . . .The economic tomorrow may vary. . . based on. . . [new] information.").

[65] *See* Jones Day Commentaries, *supra* note 22 ("The existing regulatory and legal environment was not designed to accommodate digital assets, including NFTs. Nonetheless, there are some key issues that have emerged while investors. . . explore this space.").

[66] *See* Kessler, *supra* note 49 ("It is important for buyers and sellers to be careful when transacting in this new [NFT] marketplace. Sellers should be aware of what intellectual property rights they own. . . before offering it for sale as an NFT, and buyers should be aware of what they are actually purchasing.").

[67] *See* Lewis et al., *supra* note 9 ("The minting and sale of NFTs are susceptible to 'copyfraud' and infringement of copyright in the underlying work as well as the infringement of the moral rights of the author of the original work," but buyers remain unprotected in the NFT market).

[68] *See id.*

[69] *See* 3 Melville B. Nimmer & David Nimmer, Nimmer on Copyright § 8D.02 (2022).

[70] *Id.* at § 8D.06.

Generally speaking, the United States maintains a strictly neutral stance with respect to moral rights in intellectual property and does not afford them much protection.[71] However, under VARA, the United States recognizes artists' moral rights of attribution and integrity under extremely specific and limited circumstances.[72] The right of attribution includes the right to (1) claim authorship, (2) prevent others from using the artist's name to promote visual works of art that the artist did not create, and (3) prevent others from affixing the artist's name to a work that the artist did create but that has been distorted or otherwise modified in a way that harms the artist's reputation.[73] The right of artistic integrity grants artists the right to prevent (1) any intentional modifications of their works and (2) others from attaching the artist's name to works that the artist did not create.[74] In theory, VARA's moral rights' protections could extend to NFT creators if Congress expanded the statutory definition of a "work of visual art."[75] Under VARA, "works of visual art" currently include only paintings, drawings, prints, or sculptures.[76]

The "resale right" solution is based on the principle that authors, especially authors of graphic or plastic works, should have the ability to reap additional economic benefits if their works are later re-sold or displayed for profit.[77] In contrast to the United States' historically steadfast commitment to neutrality regarding moral rights, international copyright laws often grant resale rights to artists, and these royalties apply to all "works of graphic or plastic art such as pictures, collages, paintings, drawings, engravings . . . made by the artist himself."[78] To date, more than fifty countries have implemented some form of

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[71] *Id.*

[72] *See id.*

[73] *Id.*

[74] 3 Melville B. Nimmer & David Nimmer, *supra* note 69 at 8D.06; *see also* Information Sheet, Sharon Forscher, Philadelphia Volunteer Laws. Arts, The Visual Artists Rights Act of 1990 (on file with the City of Albuquerque), https://www.cabq.gov/artsculture/public-art/documents/visualartistsrightsact_philadelphiavolunteerlawyersarts.pdf.

[75] 3 Nimmer, *supra* note 69, at § 8D.06.

[76] 17 U.S.C. § 101 (1978) (defining "work of visual art."); *see also* 3 Nimmer, *supra* note 69, at § 8D.06.

[77] Elisa D. Doll, Note, *The Equity for Visual Artists Act of 2011 (EVAA): Crafting an Effective Resale Royalty Scheme for the United States Through Comparative Mediation*, 24 Ind. Int'l & Comp. L. Rev. 461, 466 (2014).

[78] Doll, *supra* note 77 at 467; *see generally* 3 Nimmer, *supra* note 69, at § 8D.06 (discussing the United States' commitment to neutrality regarding moral rights).

resale royalty legislation.[79] These resale royalties are economic in nature but stem from the "special relationship" that exists between authors and their works.[80] Resale royalty legislation finds its purpose in equity and brings about equitable results through economic measures.[81] The legislation seeks to address the power imbalance between poor artists and dealers who flip paintings for additional profit and/or exploit the artist's creative efforts.[82] Certain scholars maintain that encoding a de facto resale right into an NFT's terms of sale would protect NFT creators from exploitation on the secondary art market and authors of original works from having NFTs minted from their works without their express authorization.[83]

C. Flaws in the Suggested & Current Solutions

The suggested VARA and resale right solutions are inadequate. Though these solutions would likely benefit original works' authors by protecting their right of artistic integrity and allowing them to collect revenue from purchasers subsequently minting NFTs from the authors' original works, these copyright solutions do little to protect an NFT purchaser's investment if the NFT creator mints subsequent NFTs from the same underlying asset.[84]

There is no default copyright transfer from NFT creator to purchaser, so the copyright solutions that protect NFT creators are unavailable to protect purchasers; moreover, proponents of the VARA and resale royalty right solutions do not allege that these solutions *should* protect NFT purchasers.[85] The creator retains a full copyright interest, and the purchaser owns only their isolated NFT, which

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[79] Doll, *supra* note 77, at 461.

[80] *Id.*

[81] *Id.* at 465.

[82] *Id.*

[83] *See* Collin Starkweather et al., *How Intellectual Property Rights Can Complicate NFT Market*, Law360 (Aug. 17, 2021, 5:26 PM), https://www.law360.com/articles/1412858/how-intellectual-property-rights-can-complicate-nft-market; *see generally* Ingram Yuzek Gainen Carroll & Bertolotti, LLP, *Buying Selling NFTs: Navigating the Legal Landscape*, JD Supra (Nov. 30, 2021), https://www.jdsupra.com/legalnews/buying-selling-nfts-navigating-the-2284166/ (noting that coded resale royalties "may be configured to pay a percentage…from the secondary sale of the NFT as a royalty payment to the artist upon each resale…" and that "[a] groundbreaking feature of NFTs is the ability of the rights owner or original seller to capture revenue from the secondary market, or the resale marketplace.").

[84] *See id.*

[85] *See* Zhao Zhao, *Fulfilling the Right to Follow: Using Blockchain to Enforce the Artist's Resale Right*, 39 Cardozo Arts Ent. L.J. 239, 251 (2021) ("As artists advocate for the resale right to become mandatory, it is just as crucial to consider innovative ways to achieve effective enforcement.… [G]overnments should

ultimately grants the purchaser no copyright interest or default licensing claim in the underlying asset.[86] There is also no analogous resale right available to purchasers that would similarly allow purchasers to collect revenue from NFT creators who sell substantially similar NFTs to new buyers after the initial purchaser's NFT investment.[87]

The proposed resale right solution is particularly non-viable, given the United States' clear hesitancy to adopt any federal resale royalty legislation. In 1992, the U.S. Copyright Office issued an extensive report with findings regarding how a potential resale royalty right, or "droit de suite," may operate in the United States.[88] The 1992 report recognized that many countries, particularly those in the European Union, do more to encourage the social and economic well-being of visual artists than the United States, and that adopting a federal resale royalty right may be a viable mechanism to support struggling artists.[89] Yet, the report also recognized that a resale royalty may violate the first sale doctrine and run counter to long-held principles of property's free alienability post-sale—a hallmark of Anglo-American jurisprudence.[90] Notably, the report expressed additional concerns that integrating a resale royalty into a free market system would depress the art market, as buyers would not be willing to pay as much for works bound by subsequent royalties.[91]

In 2013, the Copyright Office issued a follow-up to the 1992 report which addressed the 1992 report's concerns and examined countries who had, in the interim between the two reports, adopted a resale royalty right in some form.[92] The report noted that in 2013, more than seventy countries—including the European Union—had enacted some form of a resale royalty provision, and that the 1992

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also consider… blockchain as a means of enforcing resale royalty rights for visual artists who create physical artwork.").

[86] Lewis et al., *supra* note 9 ("Acquiring ownership of an NFT representing a work in which copyright subsists does not, without more, grant the new owner of the NFT copyright in the underlying work.").

[87] *See id.*

[88] U.S. Copyright Office, Droit de Suite: The Artist's Resale Royalty (1992).

[89] *Id.* at 60, 133.

[90] *Id.* at 134 n.43 (highlighting that the "concept of individual purchaser[s] having to share ownership with other [purchasers is] inconsistent with U.S. property law); *see also* 17 U.S.C. § 109(a) (1978) (codifying the first sale doctrine which grants an IP holder and copyrighted work's owner the right to sell, lend, and share copies of the copyrighted work without having to obtain permission or compensate the work's original author).

[91] *See id.* at 139.

[92] *See* U.S. Copyright Office, Resale Royalties: An Updated Analysis (2013).

report's assumptions that a resale royalty would substantially reduce primary art market prices proved to be without merit.[93] In stark terms, the Copyright Office expressed that there were no clear impediments to implementing a resale royalty right in the United States, and that the United States should consider the right as one remedy to address disparities between visual artists—who are disadvantaged due to the nature of their work—and other authors under copyright law.[94] The report additionally outlined precise legislative recommendations for Congress to consider should it wish to adopt a resale royalty right.[95]

Yet, despite the Copyright Office's go-ahead, the United States has yet to adopt any federal resale royalty legislation. Perhaps this stems from the 2013 report's cautioning that a resale royalty right should be considered as only one potential option, and that Congress must deliberate further to determine if it is the best option.[96] It is also possible that Congress deliberated and concluded that principles of property's free-alienability and the first sale doctrine take precedence over protecting visual artists.[97] Either way, the lack of federal resale royalty legislation suggests that Congress would be similarly hesitant to recognize a uniform NFT resale right.

While the suggested VARA and resale right solutions are clearly inadequate, the current solution—to mitigate the tensions between creator and purchaser through private negotiation and contractual arrangements—is no better because it is inefficient.[98] NFT ownership is often in conflict with the purchaser's traditional

[93] *Id.* at 2 (acknowledging that the 1992 report's arguments may have been "overblown.").

[94] *Id.* at 3 (observing that visual artists are at a practical disadvantage when compared with other authors due to "certain factors endemic to the creation of works…produced in singular form (or in very limited copies) and are valued for their scarcity.").

[95] *Id.* (recommending that the legislation: (1) "[a]pply to sales of works of visual art by auction houses, galleries private dealers, and other[s]…engaged in the business of selling visual art," (2) "[e]stablish a royalty rate of 3 percent to 5 percent of the work's gross resale price," (3) "[r]equire copyright registration as a prerequisite to receiving royalties," etc.).

[96] *Id.*

[97] *See* U.S. Copyright Office, *supra* note 88.

[98] U.S. Copyright Office, *supra* note 88; *see also* Sean M. Sullivan & Lance Koonce, *What You Don't Know About NFTs Could Hurt You: Non-Fungible Tokens and the Truth About Digital Asset Ownership*, Davis Wright Tremaine LLP (Mar. 24, 2021), https://www.dwt.com/insights/2021/03/what-are-non-fungible-tokens ("The purchase of a token *may* include, as a matter of contract, other associated rights…even…transfer of possession of a digital file of the digital asset, but that depends entirely on the terms of sale for any particular NFT. The range of rights that *could* flow…are virtually unlimited.").

property expectations, so the purchaser is not in an efficient negotiating position.[99] An efficient party is an informed party, and the less informed the party, the more onerous and futile the negotiating process.[100] In short, information asymmetry makes NFT transactions inefficient.[101]

Proponents of private negotiation, especially those who also support encoding a de facto resale right, often point to smart contracts as the most viable and efficient transaction instrument.[102] Yet the smart contract's efficiency wanes when contextualized in light of the negotiating parties' conflicting expectations and the purchaser's dearth of information.[103] In other words, smart contracts may be an efficient *mechanism* to enforce private agreements for an NFT's sale—because smart contracts automatically enforce themselves when the parties meet the contract's encoded triggering conditions—but they do little in the way of lowering the negotiation and transaction costs necessary to establish those conditions in the first place.[104]

Within the NFT realm, all contractual solutions—traditional and smart—are also inefficient due to their potential for non-enforcement.[105] Smart contracts are touted as an efficient sales mechanism because they "cut out the middle man," but

[99] *See* Inés Macho-Stadler & J. David Pérez-Castrillo, An Introduction to the Economics of Information 54, (2d ed. 2001) ("The existence of…hidden information introduces important inefficiencies into the contract….").

[100] *Id.*

[101] *See id.*

[102] Ingram Yuzek Gainen Carroll & Bertolotti, LLP, *Buying & Selling NFTs: Navigating the Legal Landscape*, JDSupra (Nov. 30, 2021), https://www.jdsupra.com/legalnews/buying-selling-nfts-navigating-the-2284166/ ("the first sale doctrine appears to have no place in the universe of NFTs. NFTs are coded with smart contracts, which may be configured to pay a…royalty payment to the artist."); *see also* Kei Teshirogi, *Mechanism of NFT and Legal Issues Related to NFT Transactions*, 51 Oh-Ebashi Intell. Prop. Newsl. (Feb. 17, 2022), *available at* https://www.ohebashi.com/jp/feature/2022NFT_features.php (discussing how NFT creators can code something similar to a resale right as one of the smart contract's terms at the time of the NFT's issuance in order to receive a portion of the transaction amount if the purchaser resells the NFT to a third party).

[103] *See generally* Blair & Lewis, *supra* note 17 at 285 (discussing information asymmetries that arise when one party has private information).

[104] *See id.*

[105] As an initial matter, courts recognize smart contracts' validity. *See Rensel v. Centra Tech, Inc.*, No. 17-24500-CIV, 2021 WL 4134984 (S.D. Fla. Sept. 10, 2021); *see also* Sullivan & Koonce, *supra* note 98 (noting that while courts recognize smart contracts as viable instruments, "the NFT smart contract itself cannot *enforce* . . . provision[s]—a seller would have to resort to traditional methods of enforcement (e.g., demand letters, litigation).").

if the creator or purchaser breaches the NFT's terms of sale, the smart contract's enforcement mechanism still rests in traditional legal actions.[106] Moreover, if the purchaser is ill-informed of the NFT's terms of sale or does not understand the practical effects of those terms, then the purchaser could bring an action against the NFT creator for fraudulent misrepresentation, breach of contract, or seek a rescission of the contract in its entirety.[107]

These copyright and property tensions, coupled with the inadequacy of the proposed and current mitigation measures, highlight the overemphasis on NFT creator protection at the expense of NFT purchasers.[108] In fact, the asymmetric bargaining power inherent in the proposed and current solutions may ultimately constitute a "moral hazard," where the purchaser bears the economic risk of a volatile investment while the NFT creator can capitalize on the lack of legal restraints in subsequent NFT minting.[109] In the same way that private negotiation exacerbates information asymmetry, expanding VARA and the resale right similarly place the NFT creator and purchaser on unequal footing because the purchaser has neither a copyright claim in the original work nor a remedy against a creator for minting and selling substantially similar NFTs to other purchasers.[110] When NFT creators sell multiple, substantially similar NFTs—NFTs which are *functionally* identical to each other, despite each having their own unique hash on the blockchain—the initial NFT purchaser ends up assuming the majority of the transaction risk.[111] Initial purchasers may purchase NFTs at high prices, which do not reflect the creator's ability to sell additional NFTs from the same underlying asset, and the value of the initial purchaser's NFT may then depreciate because it is no longer functionally unique.[112] Without adequate purchaser protections, the

[106] *See* Sullivan & Koonce, *supra* note 98.

[107] *Id.*; *see also* Luca Anderlini et al., *Should Courts Always Enforce What Contracting Parties Write?*, 7 Rev. L. & Econ. 15, 16 (2011) ("The potential benefit of a court's voiding explicit contractual clauses stems from asymmetry of information between the parties at the time they contract. Because of asymmetric information, when the court does not intervene, inefficient trades may take place.").

[108] *Id.*

[109] *See* CFI Team, *Moral Hazard*, Corp. Fin. Inst. (May 18, 2020), https://corporatefinanceinstitute.com/resources/knowledge/other/moral-hazard.

[110] *See id.*

[111] *See id.*

[112] *See* Luke Dormehl, *NFTs and the Explosive Rebirth of Artificial Scarcity, Digit. Trends* (Mar. 22, 2021), https://www.digitaltrends.com/features/nfts-artificial-scarcity ("[NFT's] digital scarcity does not refer to the artwork [itself]…the digital scarcity refers to…the receipt for the artwork…the ownership of the artwork

precise attribute that makes NFTs valuable—their scarcity—may be nothing more than a fallacy.[113]

IV
Novel Solution: An NFT Creative Commons Parallel ("NFT CC")

Clearly, the challenges posed to the integrity of the NFT purchase and the ultimate viability of NFTs as a unique asset and investment opportunity necessitate a novel solution. This solution must draw from copyright law, address traditional property expectations, capitalize on emerging technologies, and lend itself to default purchasing arrangements. Such a hybrid solution would (1) permit the NFT creator and purchaser to know precisely what rights they are entitled to in the NFT and (2) decrease transaction costs and make NFT sales more efficient by mitigating information asymmetry. An NFT Creative Commons parallel ("NFT CC") meets this high standard.

A. Creative Commons Overview

Creative Commons ("CC") works in tandem with The Copyright Act's "all rights reserved" setting and affords authors the ability to grant specific licenses and copyright permissions for others to use their original works.[114] The Creative Commons seeks to build "a layer of reasonable, flexible copyright in the face of increasingly restrictive default rules."[115] All CC licenses allow authors to retain a full copyright interest while still allowing others to distribute, reproduce, create derivative works, and otherwise make use of authors' original works in ways defined by the licenses the authors choose.[116] Because these licenses are premised on copyright, they last as long as the copyright interest exists.[117]

CC licenses employ a "three-layer" design that renders the licenses legally legitimate, accessible to laypeople, and conducive to creative works that employ

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[is] scarce, *not* the artwork itself. All you really own…[with] an NFT is an entry in a database on the blockchain…that *entry* is scarce.").

[113] *Id.*

[114] *See About CC Licenses*, Creative Commons, https://creativecommons.org/about/cclicenses (last visited Nov. 24, 2022).

[115] Lydia Pallas Loren, *Building a Reliable Semicommons of Creative Works: Enforcement of Creative Commons Licenses and Limited Abandonment of Copyright*, 14 Geo. Mason L. Rev. 271, 273 (2007).

[116] *About CC Licenses*, *supra* note 114.

[117] *Id.*

technology.[118] The first "Legal Code" layer utilizes copyright licenses' traditional language and text.[119] The second "Commons Deed" layer serves as a reference that summarizes and expresses the licenses' salient terms for creators, educators, and others who wish to license their creative works but are ill-versed in the legal field.[120] The third and final "Machine Readable" layer of the license encodes the license's terms so that they are recognizable through software.[121] Simply put, the three layers of CC licenses protect licensors and licensees by observing legal formalities while simultaneously ensuring layperson and software accessibility.

There are currently six CC licenses, and each license permits and restricts certain licensee actions; the multitude of licenses gives authors a flexible range of options when sharing their works with the public.[122] Each license has a specific name and graphic associated with it that both designates the type of license it is and conveys the ways in which licensees may legally make use of the licensor's work.[123] For example, the "Attribution-NoDerivs" ("CC BY-ND") license permits licensees to reuse the licensor's work for any purpose, but restricts licensees' abilities to share the work in an adapted form; the license also requires the licensee to credit the licensor.[124] Once an author chooses the CC license that best reflects the ways in which they intend for licensees to use their works, the author then affixes the license to their work, either through a link, graphic, piece of text, or embedded HTML code, along with a link explaining the chosen license's terms.[125]

B. NFT CC's Logistics

An NFT CC, with an analogous three-layer license design that would define how the NFT creator and purchaser may utilize the NFT and its underlying asset post-sale, would lower NFT transaction costs by increasing the reliability and efficiency of NFT sales. Affixing an NFT CC license to an NFT prior to its sale would place purchasers on notice of precisely how they may utilize their NFT.

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[118] *See About the Licenses*, Creative Commons, https://creativecommons.org/licenses (last visited Nov. 24, 2022).
[119] *Id.*
[120] *Id.*
[121] *Id.*
[122] *Id.*
[123] *Id.*
[124] *Id.*
[125] *See About CC Licenses*, *supra* note 114.

Crucially, these licenses would also alert the purchaser to whether the NFT creator retains the right to mint additional, substantially similar NFTs from the same underlying asset. With this information in mind, purchasers would then be able to negotiate prices that adequately convey the NFT's true market value.

Although the possibilities for potential NFT CC licenses are abundant, this note offers six examples to demonstrate their utility.[126] The first two license examples represent extreme options: (1) full copyright transfer from NFT creator to purchaser in the NFT's underlying asset and (2) no copyright transfer at all. The four middle license examples represent a more moderate approach, with what this note terms "reciprocal ongoing licensing transfers" ("ROLTs"). These ROLTs would enable purchasers and creators to share licensing rights and revenues when either meets the licenses' pre-defined conditions. For example, drawing from established resale royalty logistics, which compensate authors based on a percentage of the work's sale price, these ROLTs could include licenses that: (3) permit authors of original works to receive a percentage of the revenue from a purchaser who mints an NFT from the original work, (4) prohibit NFT creators from minting additional NFTs from the same underlying asset, but permit creators to mint NFTs from the underlying asset's derivative works, (5) prohibit authors from creating substantially similar derivative works from the underlying asset and then minting additional NFTs from those derivative works, and (6) permit NFT creators to mint and sell subsequent NFTs from the same underlying asset as the initial purchaser's, but also permit the initial purchaser to claim a percentage of the subsequent NFTs' revenue.

The NFT CC solution is, in essence, a spectrum of licensing arrangements where in certain scenarios the purchaser is entitled to a greater claim on the NFT and its underlying asset, and in other scenarios the NFT creator and/or original author retains more control. The key element of this solution's viability is that the licenses' terms would be easily communicable to purchasers, readily digestible due to their three-layer structure, and reliable because of the licenses' codified and pre-defined conditions. Together, these factors ensure transaction efficiency

[126] It is for a future project to determine the "who" and "how" of NFT CC licenses, but it is the author's opinion that a consortium comprised of stakeholders with diverse interests in the NFT market should design the NFT CC licenses. The 1992 U.S. Copyright Office's report is informative; in discussing a proposed resale royalty right, the report references testimony from "artists, representatives of museums, art galleries, auction houses, and legal experts…" U.S. Copyright Office *supra* note 88, at 99. The NFT CC license consortium should similarly take these diverse perspectives into account when designing the licenses.

by decreasing information asymmetry. Through the licenses, NFT creators would be able to signal to purchasers precisely what the sale affords both parties, and the informed purchaser would be in a better negotiating position as a result.

C. NFT CC's Proposed Benefits

Utilizing NFT CC licenses would increase the overall efficiency of NFT sales by clarifying the rights and responsibilities of creators and purchasers from the transaction's inception.[127] From a free market perspective, an NFT's price would reflect its licensing terms, and a potential purchaser dissatisfied with an NFT's post-sale rights may choose not to purchase it.[128] In this way, because the NFT's price would be impacted by its attached NFT CC license, the NFT's price would more accurately convey its true market value.[129] The NFT CC licensing structure internalizes transaction costs by shifting the majority of the risk to NFT creators, who are the parties best-equipped to determine the NFT's worth and choose the appropriate license to attach to it.[130]

The NFT CC solution is also economically efficient because it ensures that the party with the greater interest in the NFT's digital scarcity pays more.[131] This

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[127] *See* Timothy Vollmer, *Do Open Educational Resources Increase Efficiency?*, CREATIVE COMMONS (Sept. 9, 2010), https://creativecommons.org/2010/09/09/do-open-educational-resources-increase-efficiency.

[128] *See* James G. Gatto, *NFT License Breakdown: Exploring Different Marketplaces and Associated License Issues*, NAT'L L. REV. (Sept. 21, 2021), https://www.natlawreview.com/article/nft-license-breakdown-exploring-different-marketplaces-and-associated-license-issues (discussing how a seller's representations of rarity impact the NFT's price).

[129] *But see* Kate Rooney, *Crypto Investors See Looming NFT Bubble but Tout Staying Power of the Underlying Tech*, CNBC (Dec. 3, 2021, 10:42 PM), https://www.cnbc.com/2021/12/03/crypto-investors-see-an-nft-bubble-but-tout-power-of-underlying-tech.html (highlighting the demand for NFTs, but noting that only the quality projects will have staying power in the long-term). *See generally* International Trade Administration, *Export Pricing Strategy*, INT'L TRADE ADMIN., https://www.trade.gov/pricing-strategy (discussing traditional factors to include in price calculation e.g., market demand and competition).

[130] *See generally* Samuels, *supra* note 8, at 6 (discussing Coase's theorem on the economic significance of market rights, and the impact these market rights have on protected interests and subsequent bargaining efficiency).

[131] *See* David Z. Morris, *Art in the Age of Digital Scarcity: Why NFTs Enchant Us*, COINDESK (Oct. 19, 2021, 5:04 PM), https://www.coindesk.com/business/2021/08/30/art-in-the-age-of-digital-scarcity-why-nfts-enchant-us ("NFTs are valuable in themselves…because they give digital objects a claim on the sense of presence, history, and authenticity previously reserved for physical objects."); *see also* Robyn Conti & John Schmidt, *What You Need to Know About Non-Fungible Tokens*

scarcity stems from either owning the right to mint subsequent NFTs (creator scarcity), or owning an NFT from which a creator may never mint a subsequent NFT from the same or a substantially similar work (purchaser scarcity). For example, NFT creators who retain the right to mint subsequent NFTs would "pay more" for this creator scarcity by listing the NFT for a lower price. Conversely, purchasers who own an NFT with a license that prohibits the creator from minting subsequent NFTs from the same underlying asset would pay more for this purchaser scarcity because the NFT would be valued at a higher price.

An NFT CC would also protect the value of the NFT purchaser's investment by stabilizing the lower threshold of the NFT's price.[132] Though the NFT creator would choose which license to attach to their work, the purchaser would have an equal power to choose which NFT, with its corresponding license, they would be willing to purchase, or even negotiate with the creator over the affixed license itself. Purchasers may choose not to purchase NFTs that are subject to licenses that limit what the purchaser may do with either the NFT or its underlying asset, or licenses that limit purchaser claims if the creator retains the right to mint subsequent NFTs. NFT CC licenses are also advantageous from a contractual standpoint. In the event of a breach, courts would be more likely to enforce an NFT sales contract with the weight of an NFT CC license behind it than a traditional NFT sales contract that supplies terms that clearly demonstrate the parties' information asymmetry.[133]

Put simply, NFT sales in their current state are inefficient because the purchaser is ill-informed.[134] The current practice is to bargain the NFT's terms of sale through private negotiation, but private negotiation does little to remedy the

(NFTs), Forbes (Apr. 8, 2022, 8:36 AM), https://www.forbes.com/advisor/investing/nft-non-fungible-token (noting that NFTs create digital scarcity); Steven L. Jones & Jeffry M. Netter, *Efficient Capital Markets*, Econlib, https://www.econlib.org/library/Enc/EfficientCapitalMarkets.html (last visited Nov. 24, 2022) (discussing the ways in which price reflects consumer expectations); *see generally* Jaya Klara Brekke & Aron Fischer, *Digital Scarcity*, 10 Internet Pol'y Rev. 2, 2 (2021) (defining digital scarcity).

[132] *See* Lawrence M. Ausubel et al., *Bargaining with Incomplete Information, in* 3 Handbook of Game Theory (Robert J. Aumann & Sergiu Hart eds., 2002) (discussing buyer/seller equilibrium in terms of information access through a game theory analysis).

[133] Amit Elazari Bar On, *Unconscionability 2.0 and the IP Boilerplate: A Revised Doctrine of Unconscionability for the Information Age*, 34 Berkeley Tech. L.J. 567, 567 (2019) ("Private [contractual] ordering is expanding its governing role in IP, creating new problems and undermining the rights…[of] creators and users.").

[134] *See generally* Samuels, *supra* note 8.

stark information asymmetry between NFT creators and purchasers.[135] An NFT CC is an elegant solution to these problems. The licenses would not only serve a signaling purpose to purchasers but would also put the most salient terms of the NFT's sale in accessible language so that the purchaser would know exactly what rights they, and the creator, are entitled to post-sale.

V
NFT CC's Significance & Policy Implications

NFTs have revolutionized the modern art and media worlds and also the broader technology culture. The national and international NFT markets support novel artistic contributions and have opened new pathways for unprecedented purchaser access to art and media ownership.[136] An NFT CC would contribute to this valuable innovation—and would particularly bolster the international market—by streamlining the NFT sales process. Moreover, an NFT CC would afford auction houses the stability necessary for long-term NFT viability in art transactions.[137] Generally speaking, NFTs have added to the growing mainstream awareness of "digital scarcity" and continue to fundamentally alter what it means to "own" a digital asset.[138] Consequently, any legal solution, including an NFT CC, that protects NFT investments will impact, be implicated in, and inform all forthcoming digitally-scarce spaces writ large.

A. An NFT CC Would Bolster Efficiency in the International IP Market

Compared with a federal statutory scheme, an NFT CC is almost certainly the more effective way to implement NFT licenses and effectuate copyright law's longstanding goal to promote scientific and artistic innovation.[139] As IP markets become increasingly global, "traditional IP norms and private ordering regimes have failed to keep pace with changing market realities."[140] Private international IP

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[135] *See* Ausubel et al., *supra* note 132.

[136] *See* Sonia Baldia, *The Transaction Cost Problem in International Intellectual Property Exchange and Innovation Markets*, 34 Nw. J. Int'l L. & Bus. 1, 31 (2013).

[137] *See generally* Partha Dasgupta & Eric Maskin, *Efficient Auctions*, 115 Q.J. Econ. 341, 342 (2000) (discussing the market inefficiency that results when buyers attach values to goods independent of information to which other buyers may have access).

[138] *See What is Digital Scarcity?*, NBX, https://nbx.com/crypto101/what-is-digital-scarcity (last visited Nov. 24, 2022).

[139] *See* U.S. Const. art. I, § 8, cl. 8.

[140] Baldia, *supra* note 136, at 31.

rules vary based on jurisdiction, and the exclusive rights a jurisdiction grants to its IP holders can be exercised only within the borders of that specific jurisdiction.[141] Consequently, federal NFT licensing statutes would be effective within only the United States and would likely complicate international NFT transactions because IP rights granted or denied in the United States would not obligate any other jurisdiction to recognize those rights within its borders.[142]

In contrast to federal licenses, the Creative Commons, on which an NFT CC would be based, is an internationally-recognized phenomenon that has been translated and adapted for the legal rules of over thirty-four countries.[143] Drawing from the collaborative copyright model, the Creative Commons is engaged in the International Commons Project, which posts and translates licenses to myriad legal jurisdictions.[144] Moreover, in recent years, the scientific and academic communities have generated Creative Commons spin-offs, with successful implementation both domestically and abroad.[145] Analogous to these spin-offs, an NFT CC would similarly be able to work within the existing international Creative Commons framework.[146]

From a Coasean market efficiency perspective, international NFT sales are subject to additional layers of transaction costs, which domestic NFT sales do not face, and these additional costs further impede NFT transactions and contribute to inefficient economic behavior.[147] Not only is there information asymmetry

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[141] *See id.* at 25–26.

[142] *See id.* at 26–27 (noting that (1) legal diversity is "deeply rooted in the principles of territoriality and independence of rights enshrined in the public international IP law," (2) these "independence of rights" principles imply that "an IP right granted or denied to an IP right holder by one jurisdiction does not obligate any other jurisdiction to do so within its borders," and (3) "[t]he nature and scope of IP rights in different countries can…modulate depending on…jurisprudential, social, political, and economic factors.").

[143] Loren, *supra* note 115, at 287.

[144] § 4. Atypical Developments and Other Legal Issues, Int'l Ency. Cyber L. (Wolters Kluwer 2022) (last updated Oct. 2022), at ¶¶ 394-95 (discussing iCommons and Creative Commons' international recognition).

[145] Ashley West, *Little Victories: Promoting Artistic Progress Through the Enforcement of Creative Commons Attribution and Share-Alike Licenses*, 36 Fla. St. U. L. Rev. 903, 904–05 (2009) ("…Creative Commons has stimulated several recent spin-offs, such as the Science Commons and CCLearn, which are similar licensing regimes for the scientific and academic communities.").

[146] *See id.*

[147] *See* Baldia, *supra* note 136, at 23–25 (noting that parties bargaining internationally "…may incur high transaction costs, knowingly or unknowingly, ex ante in search and bargaining costs, or ex post in enforcement costs, or both…" and transaction costs which are "too high relative to the transaction value…can

inherent in the NFT sale itself—the same asymmetry currently present in *all* NFT sales with which this note is primarily concerned—but from the international vantage, there are also transaction costs associated with negotiating and navigating multi-jurisdictional IP rights that may or may not transcend territorial bounds.[148] Implementing an NFT CC would not only alleviate the information asymmetry in the NFT sale, for the reasons stated above, but an NFT CC could also potentially mitigate tension-inducing discrepancies between jurisdictions by working within the existing Creative Commons architecture.[149]

More generally, the importance of increasing and facilitating international IP exchange cannot be overstated.[150] An efficient international IP network not only enhances global problem solving, but also promotes best-use knowledge sourcing and idea-generation.[151] An NFT CC would encourage open innovation by streamlining multi-jurisdictional NFT transactions with its internationally-accepted, recognizable, and transparent licensing system. An NFT CC would significantly decrease the transaction costs associated with international NFT sales and would ultimately ensure that the NFT market allocates NFT IP rights to those who value them most.[152]

B. An NFT CC Would Support Auction Houses & NFT Market Access

An NFT CC would benefit auction houses by facilitating NFT sales' ease and predictability.[153] Recent economic trends speak to consumers' growing awareness that art should be treated as an investment first and consumption good second.[154] This understanding of art as an investment underscores the necessity of stable price-setting processes that promote sophisticated, streamlined efficiency throughout

impede transactions…resulting in inefficient economic behavior…" Under the Coase theorem, "the higher the transaction cost, the less likely the IP exchange transaction will be made.").

[148] *Id.* at 27.

[149] *See* West, *supra* note 145.

[150] *See* Baldia, *supra* note 136, at 3.

[151] *Id.* at 15.

[152] *See id.* at 25 ("Viewed through a Coasean prism, high transaction costs can be a threat to the ability of the market to allocate IP to those participants that value it the most.").

[153] *See* Dasgupta & Maskin, *Efficient Auctions*, 115 Q.J. Econ. 341, 342 (2000) (discussing the market inefficiency that results when buyers attach values to goods independent of information to which other buyers may have access).

[154] M.A. Louargand & J.R. McDaniel, *Price Efficiency in the Art Auction Market*, 15 J. Cult. Econ. 53, 53 (1991).

the auction process from acquisition to sale.[155] Works of art are quasi-financial instruments, so in order for the art market to run efficiently, it must meet the same standards established for financial markets.[156] An efficient market is one in which "prices which prevail at any time are found to be an unbiased representation of *all currently available information.*"[157] A competitive, efficient, and "fair game" auction house market is one in which a work's price at auction closely approaches what the purchaser realistically expected to pay.[158] Consequently, because "[c]ollectors typically specialize in one or more categories of art,"[159] auction houses with experts in those categories will be better equipped to accurately estimate efficient selling-price ranges.[160]

With these efficiency benefits in mind, the necessity of an NFT CC for large auction houses becomes apparent. Not only would an NFT CC promote the unbiased representation of "all currently available information," but it would also afford NFT collectors and sale experts the opportunity to immerse themselves in the NFT CC's non-volatile framework where each license brings with it clear, established, and unbiased conditions of ownership. This NFT CC infrastructure would enable NFT creators and purchasers to approach the auction process with the assumption that they are entering a "fair game" market with symmetrical information.[161] Establishing realistic market expectations around NFT sales would also allow for collector and curator specialization, contribute to NFT's stability and versatility as an emerging asset class, and make auction houses more likely to participate in the NFT art market.[162]

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[155] *Id.*

[156] *Id.* at 53–54.

[157] *Id.* at 54 (emphasis added).

[158] *Id.* at 57.

[159] *Id.* at 58.

[160] *See* William Z. Hodges, Capstone, *The Value of Estimating the Price of Art: A Lesson for Auction Houses*, WRLC (Fall 2011/Spring 2012), *available at* https://islandora.wrlc.org/islandora/object/1112capstones%3A217/datastream/PDF/view (noting that auction house experts set estimation ranges that "[signal] to buyers the experts' confidence in a work's value," and suggesting that "[b]y publishing an estimation window, an auction house asserts…that the [work's] true value is within that window.").

[161] *See id.* at 57.

[162] *See generally* Rocco Puno, *The Democratization of Fine Art: How Much for 0.02% of That Picasso?*, Harv. Bus. Sch. Digit. Initiative (Oct. 17, 2019), https://digital.hbs.edu/platform-digit/submission/the-democratization-of-fine-art-how-much-for-0-02-of-that-picasso/.

C. An NFT CC Would Protect Digital Scarcity

NFTs introduced digital scarcity into the market and starkly shifted the conversation around allocative efficiency and copyright.[163] At its core, digital scarcity is the notion that a digital asset may be coded to have a permanently limited supply.[164] This concept of a limited digital asset runs contrary to the traditional understanding of digital assets as being subject to potentially limitless replication and copies.[165] NFT's utilization of blockchain technology to credibly maintain the asset's uniqueness transformed the modern conception of what may be an "original" source where artistic provenance is concerned.[166] Though NFTs introduced and reified digital scarcity's prominence and legitimacy, they are but one example of how blockchain technology may be leveraged to both enable unique digital property ownership and establish the necessary infrastructure for other blockchain-based relationships.[167] As such, any copyright solution that affects NFT viability, sales, distribution, and use, will likely also influence future legal frameworks surrounding novel examples of digital scarcity.[168]

D. An NFT CC Would Encourage & Protect Innovation

Perhaps most compelling, an NFT CC would support exploration of NFT's untapped potential uses, particularly in the generative art space. Generative art is, in essence, a form of digital art that continually updates itself based on the artist's set parameters and algorithms.[169] In this way, generative art conceptualizes an

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[163] *See* Neil Weinstock Netanel, *Copyright and a Democratic Civil Society*, 106 YALE L.J. 283, 319 (1996) ("[Traditionally], private entitlements . . . best promote allocative efficiency when would-be users must pay the price agreed upon by the *entitlement holder* in a voluntary exchange.") (emphasis added).

[164] *What is Digital Scarcity?*, NBX https://nbx.com/crypto101/what-is-digital-scarcity#:~:text=Digital%20scarcity%20is%20the%20idea,million%20bitcoins%20in%20its%20code (last visited Nov. 24, 2022).

[165] *See id.*

[166] Jaya Klara Brekke & Aron Fischer, *Digital Scarcity*, 10 INTERNET POL'Y REV. 2, 5 (2021) ("The rise of NFTs has led to experiments with new types of digital property where 'the broader intention does not appear to be to reduce the circulation and reproduction of the work . . . .' This . . . implies producing a digital 'original' where its source and provenance is considered important enough to be able to acquire value as a 'unique' digital object . . . .").

[167] *Id.*

[168] *See generally id.* ("As more advanced and general-purpose blockchain networks [appear], the scope for scarce ledger entries [grows].").

[169] *See* AI Artists, *Generative Art Guide: Examples, Software and Tools to Make Algorithm Art*, AI ARTISTS, https://aiartists.org/generative-art-design (last visited Mar. 10, 2022).

artistic work as a "living system," capable of responding to code.[170] There has been a long tradition of generative art since the 1940s,[171] but the introduction of NFTs has allowed artists to put the code for these generative works entirely on the blockchain and implement blockchain transactions as part of the generative work's algorithm.[172] For example, pieces of generative art minted as NFTs may alter their appearance as purchasers buy and sell these generative works on the blockchain.[173] Minting generative art NFTs adds a level of previously unobtainable uniqueness and scarcity to digital works, which many digital artists view as a welcome paradigm shift in a digital art world otherwise plagued by the possibility of limitless reproduction.[174] In fact, the NFT platform Art Blocks is dedicated entirely to generative art NFTs.[175] On this platform, generative artists are able to upload algorithms from which purchasers may subsequently mint NFTs.[176] With the generative art NFT ecosystem in mind, it is clear that generative artists would benefit from the ability to include specific NFT CC licenses within their works' initial parameters, and both purchasers and subsequent NFT creators would also be able to take advantage of the NFT CC's established licensing boundaries.

In the modern art world, bolstering art NFTs' accessibility, supporting art NFTs' novel uses, and promoting art NFTs' transaction efficiency is paramount

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[170] Brian Droitcour, *Generative Art and NFTs*, Art News (Mar. 11, 2021, 4:12 PM), https://www.artnews.com/list/art-in-america/features/generative-art-and-nfts-1234586572/.

[171] *See* David Z. Morris, *How NFTs Put Generative Artists on the Map*, CoinDesk (Dec. 17, 2021), https://www.coindesk.com/layer2/culture-week/2021/12/17/how-nfts-put-generative-artists-on-the-map/ (noting that in the 1940s, prominent creatives began to explore "ideas of procedure and randomness." For example, composer John Cage and choreographer Merce Cunningham used "chance operations such as flipping a coin to determine the length of a note.").

[172] *Id.*

[173] *Id.*

[174] *See* Leeor Shimron, *The NFT Generative Art Movement is Challenging How We Think About Value*, Forbes (Sept. 8, 2021), https://www.forbes.com/sites/leeorshimron/2021/09/08/the-nft-generative-art-movement-is-challenging-how-we-think-about-value/?sh=1ddfddc478ae ("[G]enerative art projects often programmatically enforce a supply cap on the total amount of pieces that can be produced, which typically has been ∼10,000 unique NFTs per collection. . . creators may [also] include specific attributes. . . [which] imbu[e] additional scarcity and value to NFTs that have those rare traits.").

[175] Morris, *supra* note 131.

[176] Morris, *supra* note 131; *see Latest Curated Release*, Art Blocks, https://www.artblocks.io/ (last visited Mar. 10, 2022).

to ensuring continued purchaser engagement and societal recognition.[177] In November of 2021, Beeple sold *Human One*, a generative NFT kinetic hybrid sculpture, for $29 million.[178] The work portrays a video sculpture with a corresponding dynamic NFT component and is designed to continuously evolve over time.[179] Beeple, through the NFT aspect, retains remote access to the artwork and has creative control over its content forever.[180] *Human One* dabbles with the physical realm and is a seven-foot-tall, box-like sculpture with four LED screens that project video images of an astronaut walking through various dystopian environments.[181] The displays featured on the screens are stored on the Ethereum blockchain and change randomly every twenty-four hours.[182] Beeple plans to add new designs to the blockchain—a feat made possible through a more flexible interpretation of the work's corresponding NFT—meaning that as Beeple evolves, so too will the work.[183] In an interview with Christies, Beeple called *Human One* a "lifelong project, . . . [one where] people can continue to come back . . . and find new meaning in [it]."[184] Beeple additionally contemplated generative art's paradigm-shifting capacity, noting that "[while] traditional . . . art is more akin to a finite statement, frozen in time . . . [Human One's] ability to be updated makes it . . . an ongoing conversation."[185] An NFT CC would protect and embolden innovative NFT interpretations, like Beeple's generative kinetic sculpture, by establishing clear licensing terms for continuous artistic revisions and other forms of innovative NFT uses.

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[177] *See* Shimron, *supra* note 174 ("…early stewards of the [generative art NFT] movement believe it is ushering in a new digital renaissance enabling artists to reach a global audience and experiment with a new medium that is engaging collectors on a deeply emotional level.").

[178] *Beeple's 'Human One' Generative NFT Sculpture Sells for $29 Million USD*, HypeBeast (Nov. 11, 2021), https://hypebeast.com/2021/11/beeple-human-one-nft-29-million-christies-auction.

[179] *Id.*

[180] *Id.*

[181] Ryan Waddoups, *Beeple's First-Ever Physical Sculpture Evolves Over Time*, SurfaceMag (Nov. 02, 2021), https://www.surfacemag.com/articles/beeple-human-one-christies/.

[182] *Id.*

[183] *Id.*

[184] *Beeple Gets Real*, Christie's, https://www.christies.com/features/Beeple-gets-real-with-human-one-11940-7.aspx.(last visited Nov. 24, 2022) (interview by Noah Davis, Head of Digital Art, Christie's, with Mike Winkelmann aka Beeple).

[185] Waddoups, *supra* note 181.

Conclusion

NFTs have ushered in a novel era of creative expression and ownership, but with this phenomenon comes an array of unprecedented legal issues. Neither traditional copyright nor property law conforms to creator or purchaser expectations, and these conflicting expectations hamper NFT sales' efficiency.[186] On the one hand, authors of original works are unprotected when purchasers mint NFTs from those original works.[187] On the other hand, NFT purchasers often do not understand that they own no proprietary copyright interest in the NFT, and that NFT creators may mint subsequent, additional NFTs from the same underlying asset.[188] The suggested copyright solutions, like expanding VARA to include NFTs or coding a de facto resale right into an NFT's terms of sale, may protect NFT creators, but these solutions are not expansive enough to include uninformed NFT purchasers, whose NFT investments may be devalued if creators mint subsequent NFTs from the same, or substantially similar, underlying assets. The lack of transparency surrounding NFT sales results in information asymmetry, particularly from the purchaser's perspective, which makes the current mitigation measures insufficient.[189] Smart contracts, though an efficient implementation mechanism, do little in the way of lowering the transaction costs associated with brokering a sale between an NFT creator and ill-informed NFT purchaser.[190]

The NFT market needs a solution that would (1) permit NFT creators and purchasers to know precisely what rights they are entitled to post-sale and (2) make NFT sales more efficient by mitigating information asymmetry and decreasing the

[186] Kohn, *supra* note 8, at 8; *see generally* Samuels, *supra* note 8.

[187] Lewis et al., *supra* note 9.

[188] *Id.*

[189] Joshua A.T. Fairfield, *Tokenized: The Law of Non-Fungible Tokens and Unique Digital Property*, 97 Ind. L.J. 1261, 1303 (2022) (recognizing that NFT purchasers face a particular information hurdle in NFT sales and proposing that a warranty (which would be similar to, but narrower in scope than, an NFT CC) "would. . . act as an important counterbalance to power and information asymmetry in the NFT market. Those who know and make a living from the sale of NFTs would be held to the standard of the warranty, while those who merely purchase the assets and sell them occasionally to someone else would not.").

[190] Cong & He, *supra* note 16 (an ill-informed purchaser would not be able to reach a "decentralized consensus" with a knowledgeable NFT creator without additional information, and the smart contract cannot bridge that information divide. Smart contracts automatically execute "contingencies reached based on [the] decentralized consensus." Consequently, when one of the contracting parties is ill-informed, the smart contract—despite being efficient from an implementation perspective—remains inefficient because its terms reflect contingencies based on a non-consensus).

transaction costs associated with uninformed negotiation. To wit, it needs an NFT CC. An NFT CC, by employing a design like the traditional three-layer Creative Commons structure, would both define how the NFT creator and purchaser may utilize the NFT and its underlying asset post-sale and also lower NFT transaction costs by increasing NFT sales' efficiency and reliability. Affixing an NFT CC license to an NFT prior to its sale would remedy the stark information asymmetry that currently plagues the NFT transaction framework. These licenses would put purchasers on notice of precisely how they may utilize their NFT and, crucially, alert the purchaser to whether the NFT creator retains the right to mint additional NFTs that are substantially similar to the initial purchaser's. An NFT CC would also promote public policy by its ability to bolster the international IP market, stabilize the price-setting processes for auction houses, and contribute to the broader legal discussion around unique digital asset ownership and blockchain-based relationships.

At their core, NFTs are a fresh, contemporary medium in a long journey of human artistic expression. It is therefore unsurprising, given the historically well-established interplay between art and investment, that both NFT creators and purchasers enter transactions hoping to exploit NFTs' investment potential.[191] Current marketplaces are working in real-time to facilitate this exchange of value; yet, because these marketplaces are hobbled by information inequities and inefficient transaction mechanisms, they often fail to convey each parties' copyright interests post-sale.[192] The current contractual solutions that cannibalize copyright and traditional property theories of ownership are unsurprisingly proving insufficient to meet the contemporary and seemingly limitless forms of expression and investment opportunities that NFTs enable.[193] NFTs warrant a novel licensing

[191] Louargand & McDaniel, *supra* note 154.

[192] *See* Dasgupta & Maskin, *supra* note 137.

[193] *See* Jeremy M. Evans, *Practice Tips: A Primer on Digitalizing Sports Collectibles*, L.A. Law. 10, 12 (2021) ("The copyright, contract, privacy, security law, and money issues created by NFTs are substantial…"); *see also* Rebecca Carroll, *NFTs: The Latest Technology Challenging Copyright Law's Relevant Within a Decentralized System*, 32 Fordham Intell. Prop. Media Ent. L.J. 979, 984–85, 994–95 (2022) (highlighting that NFTs' non-fungibility can be challenging to comprehend because "[o]ne person's use of the intangible image…does not interfere with the NFT owner's use of their tangible asset," and that although copyright owners who wish to "voluntarily transfer all or certain specific rights…may do so by way of a contract," the contractual solution has proved complicated in practice, and that copyright infringement "run[s] rampant in the NFT space.").

approach—one that draws from the Creative Commons framework in order to embrace digital scarcity and effectively convey reliable information—on which both NFT creators and purchasers can act. An NFT CC, with its focus on clarity, transparency, and flexibility, would establish the necessary infrastructure on which to build a sustainable, reliable, and efficient NFT marketplace.