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## The Property Law of Tokens

Juliet M. Moringiello

Christopher K. Odinet

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# THE PROPERTY LAW OF TOKENS

*Juliet M. Moringiello*\*

*Christopher K. Odinet*\*\*

## Abstract

Non-fungible tokens—or *NFTs*, as they are better known—have taken the world by storm. The idea behind an NFT is that by owning a certain thing (specifically, a digital token that is tracked on a blockchain), one can hold property rights in something else (either a real or an intangible asset). In the early part of 2021, NFTs for items ranging from a GIF of a pop-tart cat with a rainbow tail, to former Twitter CEO Jack Dorsey’s first tweet, to a *New York Times* column (about NFTs!) have sold for millions of dollars over the internet. Promoters assert that NFTs are the “future of digital property,” and that they herald a day when “government will lose its unique power to mint currency and protect property.” And these promoters reach beyond the typical crypto crowd. Giants of finance and industry are promising to extend the use of NFTs to securities, industrial assets, and real estate in the coming years. Moreover, this crypto token craze comes at a time when the American Law Institute and the Uniform Law Commission are in the midst of recommending revisions to U.S. commercial law to accommodate the digital age. This Article takes a more sober look at the tokenization phenomenon and, in doing so, describes what exactly it means when it comes to property rights. What can a purchaser of a token expect? How is a token actually connected to the underlying asset, if at all? What does the law—not the hype—have to say about it? This Article shows that tokenization under the law actually has a long history, one backed by practical economic considerations and animated by strong theoretical underpinnings. This Article also shows that NFTs have neither of these attributes. Additionally, this Article surveys a dataset of terms of service from the most prominent NFT platforms to explore both their disconnect from real legal effects and their puzzlingly contradictory promises about the

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\* Associate Dean for Academic Affairs and Professor of Law, Widener University Commonwealth Law School.

\*\* Professor of Law and Michael & Brenda Sandler Fellow in Corporate Law; Professor of Finance (*secondary*) University of Iowa College of Law. The authors thank Robert T. Miller, Gregory Shill, Ann Laquer Estin, Mihailis Diamantis, Andy Grewal, Ryan T. Sakoda, Thomas P. Gallanis, Jason Rantanen, Anya Prince, Josephine Gitler, Sean Sullivan, and the other participants of the Iowa Law School Summer Faculty Workshop Series, as well as Matthew Bruckner and the students in his Consumer Law Seminar at the Howard University School of Law, David Webber and the students in his Fintech Seminar at the Boston University School of Law, Brian Frye, Aviv Milner, Chris Brown, Zak Hingst, and Lawrence Cook for their helpful comments and critiques. The authors also thank John M. Miles (Iowa Class of 2023) for his helpful research support. All errors belong to the authors alone.

relationships between buyers, sellers, and the platforms. This project aims not only to inform current commercial law reform efforts, but also to offer a policy prescription for policing the NFT market.

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## INTRODUCTION

In February 2021, the GIF of an animated cat with a pop-tart body flying through the sky and leaving behind a rainbow trail sold for about \$580,000.<sup>1</sup> Well actually, it wasn’t really the digital feline (called Nyan Cat) that was sold. Rather, the auction was for a *token* representing the

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1. Erin Griffith, *Why an Animated Flying Cat with a Pop-Tart Body Sold for Almost \$600,000*, N.Y. TIMES (May 27, 2021), <https://www.nytimes.com/2021/02/22/business/nft-nba-top-shot-crypto.html> [https://perma.cc/735D-S6HS].

graphic. Although noteworthy for its expensiveness, it wasn't the first so-called non-fungible token (NFT) to fetch such a shocking price.<sup>2</sup> Indeed, Nyan Cat is just the latest in the tokenization craze—the idea of creating a unique digital representation (a token) of a particular asset—that proponents assert will upend government and property law as we know it.<sup>3</sup>

This Article gets to the heart of the real question: What does it really mean to *tokenize* something under the law? In other words, what does the owner of the Nyan Cat token actually get? Ownership? Some other kind of property right? A contract right, perhaps? Maybe all the winner gets are bragging rights. The answers to these questions have tremendous implications for just how revolutionary tokenization can really be.

To be sure, the market for NFTs appears to be growing at an impressive rate.<sup>4</sup> Aside from Nyan Cat and its half-million-dollar bounty, the NFT for a JPG produced by digital artist Beeple sold for \$69.3 million in March 2021.<sup>5</sup> That same month, Jack Dorsey, the former CEO of Twitter, sold an NFT of his first tweet ever for a whopping \$2.9 million,<sup>6</sup> and a *New York Times* reporter sold an NFT related to a news story (on NFTs!) for \$560,000.<sup>7</sup> So while the idea of non-fungible tokens has been

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2. See, e.g., Chris Williams, *Cult Digital Artist Beeple Raises Record \$3.5 Million in NFT Auction*, CRYPTO BRIEFING (Dec. 14, 2020), <https://cryptobriefing.com/digital-art-auction-raises-record-million/> [<https://perma.cc/MU9A-MFHN>] (reporting that digital artist Beeple sold an NFT collection for \$3.5 million in 2020).

3. See *Tokenize*, DECRYPTIONARY (Oct. 9, 2017), <https://decrptionary.com/dictionary/tokenize/> [<https://perma.cc/PC9B-GLHN>] (“A token is a digital representation of an asset that exists on the blockchain.”); see also *Asset Tokenization: Bringing Real-World Value to the Blockchain*, CHAINLINK (Oct. 7, 2020), <https://blog.chain.link/asset-tokenization-bringing-real-world-value-to-the-blockchain/> [<https://perma.cc/FR7P-M69Z>] (characterizing tokenization as “preserving the liquidity premium because the tokens are still tied to a unique asset”).

4. See generally Jamie Redman, *30 Day NFT Sales Continue to Run Hot with Punks and Apes, Metaverse Trade Volume Skyrockets*, BITCOIN.COM (Jan. 19, 2022), <https://news.bitcoin.com/30-day-nft-sales-continue-to-run-hot-with-punks-and-apes-metaverse-trade-volume-skyrockets/> [<https://perma.cc/P4EM-2MJY>] (explaining that there has been a consistent rise in NFT sales).

5. 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> [<https://perma.cc/DPB8-SYUK>].

6. Elizabeth Howcroft, *Twitter Boss Jack Dorsey’s First Tweet Sold for \$2.9 Million as an NFT*, REUTERS (Mar. 22, 2021, 1:50 PM), <https://www.reuters.com/article/us-twitter-dorsey-nft/twitter-boss-jack-dorseys-first-tweet-sold-for-2-9-million-as-an-nft-idUSKBN2BE2KJ> [<https://perma.cc/G2ME-ET5S>].

7. Clive Thompson, *The Untold Story of the NFT Boom*, N.Y. TIMES MAG. (Aug. 12, 2021), <https://www.nytimes.com/2021/05/12/magazine/nft-art-crypto.html> [<https://perma.cc/Z45S-S6QB>]; see also Kevin Roose, *Buy This Column on the Blockchain!*, N.Y. TIMES (June 30, 2021), <https://www.nytimes.com/2021/03/24/technology/nft-column-blockchain.html> [<https://perma.cc/6D3S-X75X>] (demonstrating the potential of NFTs by inviting readers to bid on an NFT corresponding to the cited column).

around since the mid-2010s,<sup>8</sup> the market is only now catching fire.<sup>9</sup>

There's also quite a bit of forward-looking excitement around the potential uses of NFTs. Millionaire Mark Cuban said that anything digital can be an NFT, and opined that the NBA Mavericks, which he owns, could use NFTs to "sell virtual Mavs gear, sneakers, art, pictures, videos, experiences, anything our imagination can come up with we can sell."<sup>10</sup> There is even a move to tokenize real world assets.<sup>11</sup> Mainstream corporate giants like BNY Mellon<sup>12</sup> and Deloitte<sup>13</sup> have concluded that tokenization has the potential to "disrupt" everything from securities trading to real estate markets.<sup>14</sup> Sotheby's, Vanguard, and Microsoft all

8. Josie Thaddeus-Johns, *What Are NFTs, Anyway? One Just Sold for \$69 Million*, N.Y. TIMES (Oct. 4, 2021), <https://www.nytimes.com/2021/03/11/arts/design/what-is-an-nft.html> [https://perma.cc/C3NY-G2X5].

9. *Id.*

10. Cathy Hackl, *Five Things Brands Need to Know About NFTs (Non-Fungible Tokens)*, FORBES (Mar. 4, 2021, 8:13 PM), <https://www.forbes.com/sites/cathyhackl/2021/03/04/four-things-brands-need-to-know-about-nfts-non-fungible-tokens/?sh=5f86139e222f> [https://perma.cc/D82L-CPZE].

11. Jesse Lund et al., *The Digitization of Real-World Assets into Tokens on Blockchain*, IBM INST. FOR BUS. VALUE (May 1, 2018), <https://www.ibm.com/thought-leadership/institute-business-value/report/tokenassets> [https://perma.cc/UU8P-63JZ].

12. *Tokenization: Opening Illiquid Assets to Investors*, BNY MELLON INSIGHTS (June 2019), <https://www.bnymellon.com/emea/en/insights/all-insights/tokenization-opening-illiquid-assets-to-investors.html>; [https://perma.cc/2H5M-EQEN]; Katy Burne, *Tokens of Appreciation?: The Benefits of Digitizing Assets Using Blockchain*, BNY MELLON: AERIAL VIEW MAG. (Feb. 2020), <https://www.bnymellon.com/us/en/insights/aerial-view-magazine/tokens-of-appreciation.html> [https://perma.cc/6N7M-BXL7].

13. Patrick Laurent et al., *The Tokenization of Assets Is Disrupting the Financial Industry. Are You Ready?*, DELOITTE: INSIDE MAG., Oct. 2018, at 62, [https://www2.deloitte.com/content/dam/Deloitte/cz/Documents/financial-services/Deloitte\\_Inside\\_19\\_CIO\\_Edition\\_Nov\\_2018.pdf](https://www2.deloitte.com/content/dam/Deloitte/cz/Documents/financial-services/Deloitte_Inside_19_CIO_Edition_Nov_2018.pdf) [https://perma.cc/D37Q-PT4R] ("From art to buildings, the way we invest in assets could be about to fundamentally change with the arrival of tokenization. The act of tokenizing assets threatens to disrupt many industries, in particular the financial industry, and those who are not prepared risk being left behind.").

14. We take note of one so-called innovation in using NFTs to tokenize real estate by the Silicon Valley firm Propy. The CEO of Propy argued in *Forbes* that buying real estate is a "costly and lengthy, drawn-out process . . . with its reliance on outdated methods of transacting business and multiple middlemen." Natalia Karayaneva, *Real Estate NFTs: How It Began*, FORBES (Nov. 24, 2021), <https://www.forbes.com/sites/nataliakarayaneva/2021/11/24/real-estate-nfts-how-it-began/?sh=2f3dec4c3b12> [https://perma.cc/XD26-EA65]. In order to address these problems using NFTs, Propy acquires real estate and then transfers it to some kind of entity, like a trust or LLC. *Id.* Then, an NFT is created that supposedly represents ownership of the entity. *Id.* The NFT is auctioned off and the owner of the NFT becomes the owner of the property. *Id.* Propy says that the auction winner was thrilled because of how quick and easy the process was. *Id.* But, when one digs a little deeper, it is not clear where the savings really occur. Any serious buyer of real estate will still need to conduct a title search to ensure the purported seller actually has title to the property. Also, a buyer will typically want to conduct a physical inspection of the property. And of course, most home buyers need time to apply for a mortgage, which entails an appraisal of the

have NFT projects in the works for industrial assets, real estate, and securities transactions.<sup>15</sup> The financial giant State Street announced in the summer of 2021 that it was moving hundreds of its staff members to a new unit specializing, among other things, in “support for ‘tokenized’ assets.”<sup>16</sup>

The idea behind the tokenization of a tangible or intangible asset is that the owner of the asset creates a digital item (essentially, an entry in a blockchain ledger) that is to be identified with the asset itself. The creation of this digital entry is called *minting*, and, as the foregoing suggests, the entry itself is called a *token*.<sup>17</sup> After its minting, the token is sold, often through an auction facilitated by the same online platform that performed the minting service, to willing buyers.<sup>18</sup> Typically, payment for the token is made by using some form of cryptocurrency—Ethereum’s ether being particularly popular.<sup>19</sup> The purchaser of the token then ostensibly also owns the underlying asset, or at least that’s the whole idea behind tokenization—that the owner of the token acquires authentic title to the reference asset.<sup>20</sup>

Commentators note that tokenization has tremendous potential to change everyday transactions. They note that tokens can easily “be traded on a secondary market of the issuer’s choice.”<sup>21</sup> The fact that transactions

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property. All of these components of the buying process require time, money, and middlemen, and they are not impacted (much less diminished) by the fact that there is an NFT. Not to mention, any reasonable buyer of this NFT would want (or at least should want) to see the governing documents of the entity that holds title to the property to ensure that the owner of the NFT will actually be deemed the owner of the business entity as well, and not just take some NFT platform’s (or seller’s) word for it.

15. J.D. Alois, *Smartlands and Sotheby’s Partner on Tokenized Real Estate Offering in the UK*, CROWDFUND INSIDER (Dec. 20, 2019, 11:59 AM), <https://www.crowdfundinsider.com/2019/12/155457-smartlands-and-sothebys-partner-on-tokenized-real-estate-offering-in-the-uk/> [<https://perma.cc/M2VB-T4TD>]; Brian Croce, *Vanguard Concludes First Phase of Blockchain Pilot*, PENSIONS & INVS. (June 11, 2020, 1:44 PM), <https://www.pionline.com/money-management/vanguard-concludes-first-phase-blockchain-pilot> [<https://perma.cc/AAJ8-RXM4>]; Paddy Baker, *Microsoft Partners with Waves Enterprise to Tokenize Industrial Assets*, COINDESK (Sept. 14, 2021, 5:31 AM), <https://www.coindesk.com/microsoft-partners-waves-tokenize-industrial-assets>. [<https://perma.cc/24X9-XFX8>].

16. Chris Anstey, “*You Can Tokenize a Building*” in *State Street’s New Digital Push*, BLOOMBERG (June 11, 2021, 2:42 PM), <https://www.bloomberg.com/news/articles/2021-06-11-you-can-tokenize-a-building-in-state-street-s-new-digital-push> [<https://perma.cc/6XK5-NT9H>].

17. See Roose, *supra* note 7 (describing his experience minting a token).

18. See, e.g., Thompson, *supra* note 7.

19. Ollie Leech, *How to Make, Buy and Sell NFTs*, COINDESK (Jan. 5, 2022), <https://www.coindesk.com/how-to-create-buy-sell-nfts> [<https://perma.cc/3PSP-JVRT>].

20. See Laurent et al., *supra* note 13, at 63; Burne, *supra* note 12 (“Here’s how tokenization works: the digital token references someone’s right to property or delivery of an asset.”).

21. Laurent et al., *supra* note 13, at 2; Burne, *supra* note 12, at 1 (“[T]he digital token references someone’s right to property or delivery of an asset.”); see also Non-Fungible Tokens

involving tokens happen on the blockchain and through smart contracts,<sup>22</sup> promoters proclaim, means that there are few “administrative burden[s] involved in buying and selling,” which, in turn, leads “to not only faster deal execution, but also lower transaction fees.”<sup>23</sup>

But what is most interesting for purposes of this Article are the developments surrounding tokens and property rights. Crypto enthusiasts proclaim that NFTs are the “future of digital property.”<sup>24</sup> Tokens herald a day when “government will lose its unique power to mint currency and protect property.”<sup>25</sup> Self-proclaimed experts on YouTube state that tokens convey ownership,<sup>26</sup> constitute “intellectual property,”<sup>27</sup> and contain “historical ownership data” related to an underlying thing.<sup>28</sup> And while the assertions of social media influencers with no particular expertise may not seem noteworthy on the surface, their observations are, in practice, quite important. A recent study by LendingTree’s MagnifyMoney unit revealed that 41% of Gen Z investors and 15% of Millennials sought financial and investment advice from personalities on the social media platform TikTok.<sup>29</sup> Even some lawyers claim that “nonfungible tokens can be used to represent ownership of all sorts of original digital items.”<sup>30</sup>

More concretely, industry proponents assert that tokenization does not only add “transparency to transactions,” but also allows for the holder’s “rights and legal responsibilities [to be] embedded directly onto the token” alongside “an immutable record of ownership.”<sup>31</sup> In that vein, the promise includes the notion that because tokens are both indivisible, and because they have a direct connection to ownership of a tethered thing,

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(NFT), ETHEREUM.ORG, <https://ethereum.org/en/nft/> [<https://perma.cc/QKQ2-U57Y>] (“NFTs are tokens that we can use to represent ownership of unique items. They let us tokenise things like art, collectibles, even real estate.”).

22. Burne, *supra* note 12; Ephrat Livni, *For Rules in Technology, the Challenge Is to Balance Code and Law*, N.Y. TIMES (Nov. 23, 2021), <https://www.nytimes.com/2021/11/23/business/dealbook/cryptocurrency-code-law-technology.html> [<https://perma.cc/83WL-4FCG>].

23. Laurent et al., *supra* note 13, at 63.

24. Thompson, *supra* note 7.

25. *Id.*

26. See Johnny Harris, *NFTs, Explained*, YOUTUBE, at 0:57 (Apr. 27, 2021), [https://www.youtube.com/watch?v=Oz9zw7-\\_vhM](https://www.youtube.com/watch?v=Oz9zw7-_vhM) [<https://perma.cc/2NV4-PANZ>].

27. Rhett/Mankind, *What Is an NFT? (Crypto Beginners)*, YOUTUBE, at 1:30 (Oct. 13, 2020), <https://www.youtube.com/watch?v=a8ww4aNIPQU> [<https://perma.cc/738L-SNEF>].

28. Marko - WhiteBoard Finance, *What Are NFTs and How Do They Work?*, YOUTUBE, at 2:53 (Mar. 6, 2021), <https://www.youtube.com/watch?v=LU5Mv4TQEE8> [<https://perma.cc/RU4L-LZVG>].

29. See Cheryl Winokur Munk, *TikTok Is the Place to Go for Financial Advice if You’re a Young Adult*, WALL ST. J. (May 2, 2021, 12:00 PM), <https://www.wsj.com/articles/tiktok-financial-advice-11619822409> [<https://perma.cc/686L-H7BS>].

30. Richard Acello, *Big Money: Nonfungible Tokens Are All the Rage Now. What Are They, and What Should Buyers Watch For?*, 107 A.B.A. J. 25 (2021).

31. Laurent et al., *supra* note 13, at 63.

individuals will be able to purchase fractional interests in an underlying asset,<sup>32</sup> the entirety of which they may not be able to afford.<sup>33</sup> In this way, tokenization is said to open up investment opportunities—to democratize finance.<sup>34</sup>

Because of the tokenization craze,<sup>35</sup> the significant funds being deployed to support the NFT market,<sup>36</sup> and the many assertions (from a variety of directions) about what rights a token holder actually acquires in the underlying thing,<sup>37</sup> it is inevitable that issues about tokenization and property rights will end up before courts.<sup>38</sup> With this prospect, this Article endeavors to take a more sober look at the tokenization phenomenon and, in doing so, to describe what exactly it means for property rights. What can a purchaser of a token expect? How is a token

32. See Aurore Geraud, *Tech vs. Tech: Real estate NFTs vs. Real Estate Tokenization*, L'ATELIER BNP PARIBAS (July 1, 2022), <https://atelier.net/insights/tech-real-estate-nfts-tokenisation> [https://perma.cc/555J-WE8W].

33. Laurent et al., *supra* note 13, at 2.

34. See Burne, *supra* note 12 (promising that tokenization makes the underlying asset more liquid).

35. See David Rothman, *Cashing in on the NFT Craze*, CBS NEWS (July 11, 2021, 9:55 AM), <https://www.cbsnews.com/news/the-nft-craze-non-fungible-tokens/> [https://perma.cc/J6EC-648E].

36. Erin Griffith, *From Crypto Art to Trading Cards, Investment Manias Abound*, N.Y. TIMES (Apr. 13, 2021), <https://www.nytimes.com/2021/03/13/technology/crypto-art-NFTs-trading-cards-investment-manias.html> [https://perma.cc/Q4BW-ZYLN] (“Even as millions were laid off in the pandemic, many people’s bank accounts flourished, flush from stimulus checks and government cash infusions into the economy. But while people accumulated more money, traditional investments like stocks and bonds became less attractive.”).

37. Zach of Mintable.app, *Mintable Is Live! Create a Digital Item in Seconds. Manage All Your ERC-721s in One Place—and Sell Your Newly Minted Items for Profit*, MINTABLE (Apr. 15, 2019), <https://mintable.medium.com/mintable-is-live-7d022b1aaa28> [https://perma.cc/M64Y-EQDL]; *Frequently Asked Questions*, MAKERSPLACE, <https://makersplace.com/faq/> [https://perma.cc/Y6ME-J4ET]; *NFTs Are Transforming the Digital Art World*, FOUNDATION (Oct. 13, 2020), <https://foundation.app/blog/nfts-are-transforming-the-digital-art-world> [https://perma.cc/27FP-TYZ7]; *About KnownOrigin*, KNOWNORIGIN (Feb. 8, 2021), <https://knownorigin.io/journal/platformupdate/how-to-template> [https://perma.cc/4HQB-QKDT] (stating that its tokens provide “an immutable, trustworthy and reliable source of ownership”); Devin Finzer, *The Non-Fungible Token Bible: Everything You Need to Know About NFTs*, OPENSEA (Jan. 10, 2020), <https://opensea.io/blog/guides/non-fungible-tokens/> [https://perma.cc/R766-PCVN] (“Non-fungible tokens (NFTs) are unique, digital items with blockchain-managed ownership. Examples include collectibles, game items, digital art, event tickets, domain names, and even ownership records for physical assets.”).

38. Ass’n Am. L. Schs., *Webinar Recap: The Art of NFTs*, YOUTUBE, at 9:30–10:32, 14:05–15:47 (June 28, 2021) (quoting crypto/NFT industry lawyers Emilio Cazares, Chief Legal Officer for the crypto company SuperRare, and Pamela M. Deese, a partner with the law firm of Arent Fox), <https://www.youtube.com/watch?v=IQMyS5HCvNM> [https://perma.cc/HY6E-5FS6]; *The Art of NFTs*, ASS’N AM. L. SCHS. (June 25, 2021), <https://www.aals.org/sections/list/art-law/the-art-of-nfts/> [https://perma.cc/5AJW-C4T8]; see also Andrew R. Chow, *The Quentin Tarantino-Miramax Dispute Isn't the First Lawsuit over NFTs—And It Won't Be the Last*, TIME (Nov. 17, 2021), <https://time.com/6120878/tarantino-nft-lawsuit/> [https://perma.cc/W23J-ND6Z].



actually connected to the underlying asset, if at all? What does the law—not the hype—have to say about it? These are the questions this Article answers in the following pages. In answering these questions, this Article seeks to guide policymakers as they consider drafting and amending laws to deal with NFTs and other blockchain assets, such as the current committee appointed by the American Law Institute and Uniform Law Commission to draft Uniform Commercial Code amendments to address emerged and emerging technologies.<sup>39</sup> This Article also adds to the nascent literature of NFTs (indeed, this Article will be only the second on the topic) and to the broader, ever-growing literature on crypto assets.<sup>40</sup>

Part I sets the stage by describing the idea of tokenization (which actually has a lengthy pedigree) as it has historically existed in the law, providing examples along the way. Part I also explains the NFT transactions of late by engaging in a minting exercise and by exploring a hand-collected dataset of terms of use/service from several prominent NFT platforms. Part II then explores the conceptual underpinnings of tokenization and provides a normative critique of NFTs, both in their practical application in property transactions and in their theoretical shortcomings in the property theory literature. Part III concludes with two main points. First, Part III constructs two kinds of typical transactions involving NFTs: a sale and a collateralized loan. In each instance, this Article explains how existing law would resolve disputes between the parties (with results contrary to what crypto advocates suggest). Second, Part III advocates for what should be done at present to police rampant misrepresentations in the NFT market—specifically through the threat of unfair and deceptive acts and practices enforcement by state and federal consumer protection regulators. Through the analysis this Article provides and the measures it urges, the number of NFT disputes in the

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39. See *Uniform Commercial Code and Emerging Technologies Committee Description and Roster*, UNIF. L. COMM'N (2021), <https://www.uniformlaws.org/committees/community-home?CommunityKey=cb5f9e0b-7185-4a33-9e4c-1f79ba560c71> [https://perma.cc/E7N7-AKLY]; see also Leigh E. Furtado, *NFTs for Estate Planners: Not Just a Token Concern*, 35 PROBATE & PROPERTY 10 (2021) (discussing the estate planning implications arising from the NFT market).

40. See, e.g., Joshua Fairfield, *Tokenized: The Law of Non-Fungible Tokens and Unique Digital Property*, 97 IND. L.J. 1261 (2022), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3821102](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3821102) [https://perma.cc/5J87-GUPE] (arguing that the laws of personal property, such as Article 2 of the Uniform Commercial Code, should apply to transactions in NFTs); M. Todd Henderson & Max Raskin, *A Regulatory Classification of Digital Assets: Toward an Operational Howey Test for Cryptocurrencies, ICOs and Other Digital Assets*, 2019 COLUM. BUS. L. REV. 443, 449–51 (aiming to provide clarity as to whether digital assets should be classified as securities); Kristin N. Johnson, *Decentralized Finance: Regulating Cryptocurrency Exchanges*, 62 WM. & MARY L. REV. 1911, 1921 (2021) (debunking the myth that cryptocurrency trading is disintermediated and suggesting regulatory reforms to protect investors from fraud and theft); Megan McDermott, Online Essay, *The Crypto Quandary: Is Bankruptcy Ready?*, 115 NW. U. L. REV. 1921, 1932 (2021) (arguing that cryptocurrency investments will challenge courts in consumer and business bankruptcies).

future can be mitigated, and when such disputes do occur, this Article's analysis will make their resolution more coherent and easily adjudicated.

## I. TOKENIZATION

Before one can understand what NFTs are—in other words, what these contemporary tokenizations are really doing—one must understand tokenization as a legal concept. Having a background in how the law conceptualizes tokenizing something, in turn, helps to see what NFTs can and cannot be under existing property law and related frameworks. To make these distinctions more concrete, the second half of this Part engages in an NFT minting exercise to show how the prototypical NFT transaction works. Then, to give some private ordering texture, this Part explores a dataset of terms of service (including the one governing our own NFT transaction) to see what exactly parties say (whether knowingly or not) about their rights and duties when minting and auctioning off NFTs.

### A. *In the Law*

There is already law around the idea of tokenization.<sup>41</sup> While not always referred to by this name, doctrinal tokenization has been happening for many centuries. Specifically, legal concepts have developed to recognize that a single thing can be configured to actually represent rights, such as property rights, in something else. The following furnishes the bedrock examples of doctrinal tokenization: the law of negotiable instruments, the law of securities, the law of deeds, and the law of bills of lading. This Section concludes by describing an assortment of other tokens in law as well. These examples illustrate bodies of law that recognize the fact that possession or control of one thing, usually a piece of paper, may convey certain exclusive or relative rights in something else, which may be either an intangible right or a tangible asset.

#### 1. Negotiable Instruments

Negotiable instruments law is first because it is perhaps the most famous example of tokenization. This body of law provides that pieces of paper that satisfy listed requirements as to form<sup>42</sup> confer rights that are different from those conferred by an ordinary contract written on paper. The paper is not only evidence of a debt owed, but evidence of a debt that

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41. A token is “tangible evidence of the existence of a fact.” *Token*, BLACK’S LAW DICTIONARY (11th ed. 2019).

42. See U.C.C. § 3-104 (AM. L. INST. & UNIF. L. COMM’N 1977) (providing form requirements).

is easily transferrable and highly liquid.<sup>43</sup> Article 3 of the Uniform Commercial Code (UCC) reifies payment rights in such paper, providing that a person who possesses the paper has the right to enforce the payment right evidenced by that instrument.<sup>44</sup>

As is the case with all tokenized property, the tokenization of debts in negotiable instruments satisfied a commercial need. The idea of using a tangible item of little worth to represent monetary value dates back to ancient times. Importantly, this representation solved a practical problem. Ancient coins were heavy, and it was not safe to transport large amounts of them, so traders accepted skins, leather, silks, and other textiles as currency.<sup>45</sup>

Negotiable bills of exchange, the precursors to today's checks, emerged in the fourteenth century.<sup>46</sup> The early bill of exchange was a letter addressed from one party to another directing the addressee to pay a third person a sum of money.<sup>47</sup> These instruments addressed a problem created by counterfeiting. To lessen the reach of counterfeiting, some countries, such as England, limited the exportation of their currency.<sup>48</sup> The need to be able to assign debts as payment was particularly acute in commercial transactions involving parties from such countries. In countries such as England, the negotiable bill of exchange thus facilitated trade transactions that crossed national borders.<sup>49</sup>

The industrial revolution served as the catalyst for developing the negotiable instrument principles that remain in effect today. The money supply at the time was insufficient to allow for cash payments in the growing number of commercial transactions spawned by

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43. See FREDERICK H. MILLER & ALVIN C. HARRELL, *THE LAW OF MODERN PAYMENT SYSTEMS* § 1.3[1][a] (2d ed. 2017) (explaining that a holder of a negotiable instrument need only produce an instrument in order to be paid on it).

44. U.C.C. § 3-301 (AM. L. INST. & UNIF. L. COMM'N 1977); see also James Steven Rogers, *Negotiability as a System of Title Recognition*, 48 OHIO ST. L.J. 197, 200 (1987) (explaining that the “liabilities of the parties to negotiable instruments are ‘reified’ in the pieces of paper, that is, the writings become the indispensable embodiments of the liabilities of the parties”).

45. See Frederick Read, *The Origin, Early History, and Later Development of Bills of Exchange and Certain Other Negotiable Instruments*, 4 CANADIAN BAR REV. 440, 440 (1926) (explaining the use of representative money in China and Carthage).

46. W.S. Holdsworth, *Origins and Early History of Negotiable Instruments II*, 31 L.Q. REV. 173, 173 (1915).

47. *Id.*

48. See Read, *supra* note 45, at 447 (explaining legislation prohibiting exportation of “coin of the realm” in order to thwart the use of counterfeit coin in trade).

49. See W.S. Holdsworth, *Origins and Early History of Negotiable Instruments I*, 31 L.Q. REV. 12, 13, 29 (1915) (discussing bills of exchange as a method of “effecting an exchange of money without incurring the risks of its physical transportation”).

industrialization.<sup>50</sup> As a result, parties in commerce invented their own paper currency substitute based on the bill of exchange.<sup>51</sup> This money substitute was in the form of a draft in which the seller would order a buyer to pay a specified sum of money to a third person.<sup>52</sup> This paper, which could pass from hand to hand to pay such debts, therefore supplemented the inadequate money supply.<sup>53</sup>

The large-scale problem that had to be solved to give instruments value as money substitutes was *assignability*.<sup>54</sup> Ancient systems of law did not allow one person to represent another before a tribunal, and did not allow creditors to assign their rights against their debtor to another person.<sup>55</sup> Because these creditor rights (called *choses in action*)<sup>56</sup> were not assignable at common law, the primary goal of early English negotiable instruments law may have been to make debts assignable.<sup>57</sup> This is supported by the fact that the law developed a method of assignment that would ensure that the person presenting the instrument for payment would have the legal right to be paid.<sup>58</sup>

To substitute for currency, the paper had to satisfy a number of requirements that now form the basis of negotiable instrument law. In passing from person to person in a worldwide market, these instruments ended up in the possession of a person who had no knowledge of the transaction that created the instrument.<sup>59</sup> The negotiable instrument principles that endure today ensure that the ultimate holder, the one who wants to exchange the instrument for government-backed money, will be paid a sum that can be ascertained from the face of the instrument.

For paper to serve as a medium of exchange, it must be easy to determine the value of that paper. The paper itself would not be

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50. See Grant Gilmore, *Formalism and the Law of Negotiable Instruments*, 13 CREIGHTON L. REV. 441, 447 (1979) (observing that the “idea that the payments could be made in metallic currency, chronically in short supply, was ludicrous”).

51. *Id.*

52. *Id.*

53. See MILLER & HARRELL, *supra* note 43, ¶ 2.01[1] (noting that paper was used to supplement the money supply).

54. *Assignment* is being used to mean the transfer of property rights from one person to another. See *Assignment*, BLACK’S LAW DICTIONARY (11th ed. 2019) (citing ALEXANDER M. BURRILL, A TREATISE ON THE LAW AND PRACTICE OF VOLUNTARY ASSIGNMENTS FOR THE BENEFIT OF CREDITORS § 1, at 1 (James L. Bishop & James Avery Webb, eds., 6th ed. 1894)).

55. Holdsworth, *supra* note 49, at 13.

56. A “chose in action” in this context is the right to bring an action against someone else for the recovery of a debt. See *Chose*, BLACK’S LAW DICTIONARY (11th ed. 2019).

57. Rogers, *supra* note 44, at 199.

58. *Id.*

59. Gilmore, *supra* note 50, at 448.

acceptable as payment if its value was not easily ascertainable.<sup>60</sup> The paper payment devices developed over the centuries could not effectively serve as payment for goods and services without meeting what we now recognize as the requisites of negotiability.<sup>61</sup> To qualify as a negotiable instrument in American law today, the paper must show that the right to payment is unconditional, for a fixed amount, due on demand or at a definite time, and payable either to the bearer or to a named person.<sup>62</sup>

Once the assignment problem was solved, determining priority between obligees became important. Because a right to payment is intangible, the law had to develop a way to determine who had the prior right to payment if the obligee assigned the payment right twice (the double-dealing problem). Tokenization, or reification,<sup>63</sup> solved this problem. Once the payment right was reified in the paper, the person holding the token, in this case the paper, had a better right to payment than anyone else.<sup>64</sup>

An important feature of negotiable instrument law is holder in due course status. When a person takes a negotiable instrument for value, in good faith, and without notice of any forgery or claims to the instrument, that person takes the instrument free of any defenses of the person obligated to pay the instrument.<sup>65</sup> It is this holder in due course status that gives value to the token; a person can buy a payment right and know what the value of that right is by looking at the token instrument.

## 2. Securities

The tokenization of securities also has a long history, and, like negotiable instruments, developed to address a particular economic problem. This form of tokenization dates back to the small (but often very wealthy) city-states of the Italian peninsula and other nearby commercial centers in the 1100s and 1200s.<sup>66</sup> For example, the French *Société des Moulins du Bazacle*, which was a mill system association in Toulouse that was owned by the citizens of the town, issued shares in the form of

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60. See MILLER & HARRELL, *supra* note 43, § 2.1[1]. (“The acceptability of a commodity, whether it is gold or a negotiable instrument, is determined in significant measure by the ease of ascertaining whether it is the ‘real thing.’”).

61. See Rogers, *supra* note 44, at 200.

62. U.C.C. § 3-104 (AM. L. INST. & UNIF. L. COMM’N 1977).

63. The legal concept of reification stands for the idea that the rights a paper certificate references are incorporated into the paper itself. See FINANCIAL COLLATERAL 14 (Matthias Haentjens ed., 2020).

64. Rogers, *supra* note 44, at 200.

65. U.C.C. §§ 3-302, 3-305 (AM. L. INST. & UNIF. L. COMM’N 1977).

66. FINANCIAL COLLATERAL, *supra* note 63, at 13. During that period, there was a vibrant market for the buying and selling of bonds (debt instruments) in the form of certificates. See *id.*

certificates.<sup>67</sup> Those certificates indicated on their face that the bearer of the certificate held the share rights in the association—in other words, whoever possessed the certificate had the rights of an association member and could participate in mill decision-making.<sup>68</sup> The certificate was a kind of token for rights in the association. Then, in the early 1600s, the Dutch East India Company issued (for what is believed to be the first time ever) true equity shares to the public.<sup>69</sup> The shares did not come in the form of actual certificates like the *Bazacle* shares,<sup>70</sup> but the use of certificate-like receipts called “deeds of bargain and sale”—used in connection with the company’s official share ledger—became integral in facilitating the exchange of Dutch East India Company shares.<sup>71</sup> The buyer would pay for the shares and the seller would furnish a deed of bargain and sale.<sup>72</sup> The buyer would then bring the deed to the company’s corporate office and have the transfer formally consummated.<sup>73</sup>

In the late 1800s, commercial parties recognized the need for legal reform in securities law and set about bringing corporate tokenization into effect.<sup>74</sup> To facilitate numerous and quick transactions involving the transfer of corporate stock, the legal rules changed so that it was no longer necessary to bring a certificate to the corporation’s office and have the owner’s name changed in the official records.<sup>75</sup> Instead, there would be true *tokenization*—reification to a degree that would provide easy assignability of the security from one party to another.<sup>76</sup> Thus, only the holder of the certificate held the relevant rights in the referenced thing—

67. *The Fascinating 600-Year History of a French Mill, the World’s Oldest Shareholding Company*, YALE INT’L CTR. FIN. (Aug. 19, 2014), <https://som.yale.edu/news/2014/08/the-fascinating-600-year-history-of-french-mill-the-world-s-oldest-shareholding-company> [https://perma.cc/P9JX-L82R]. To view one of the share certificates, see *The PW Collection*, PROF. WEALTH, <https://www.professionalwealth.com.au/education/collection/> [https://perma.cc/5QZV-QGMH].

68. See *The PW Collection*, *supra* note 67 (showing an example of one of the certificates).

69. See Henry Hansmann & Mariana Pargendler, *The Evolution of Shareholder Voting Rights: Separation of Ownership and Consumption*, 123 YALE L.J. 948, 1002 (2014).

70. Lodewijk Petram, *The Oldest Share*, WORLD’S FIRST STOCK EXCH. (Nov. 2, 2020), <https://www.worldsfirststockexchange.com/2020/11/02/the-oldest-share/> [https://perma.cc/5RZ5-G4RY]; John P. Shelton, *The First Printed Share Certificate: An Important Link in Financial History*, 39 BUS. HIST. REV. 391, 397–99 (1965).

71. See Shelton, *supra* note 70, at 393, 400–01 (noting that these receipts played a “vital role in the transactions” even though the parties had to nevertheless go to the company’s official office).

72. See *id.* at 392–94 (implying that to effectuate the transfer, the buyer would pay for the shares and the seller would provide the deed of bargain and sale).

73. See *id.*

74. FINANCIAL COLLATERAL, *supra* note 63, at 14.

75. See Shelton, *supra* note 70, at 392–93.

76. FINANCIAL COLLATERAL, *supra* note 63, at 14.

in this case, the corporation—and that holder could easily transfer the token and thereby effect a transfer of the corporate rights.<sup>77</sup>

Today, the UCC again provides the framework for these tokenized securities, known as certificated securities (i.e., stock and bonds that are evidenced by a piece of paper).<sup>78</sup> The law provides that such certificated securities can be denominated as bearer securities or registered securities.<sup>79</sup> If in bearer form,<sup>80</sup> then the person who “acquires possession”<sup>81</sup> of the certificate acquires the rights in the security.<sup>82</sup> If the certificated security is in registered form, then the certificate will indicate its holder’s name.<sup>83</sup> In order to transfer rights in it to another person, the certificate must be indorsed (typically signed) by the holder and then delivered into the possession of the new holder.<sup>84</sup> In either case of being in bearer or registered form, the certificated security is a tangible *token*. Becoming the holder of the physical token gives the person rights to the underlying asset—the security. The tokenization solved the problem of high-volume assignability. Tokens could pass from hand to hand, and the corporate rights followed.

Until the second half of the twenty-first century, securities remained in certificated form.<sup>85</sup> Eventually, however, the continued and widespread use of paper (or paper tokens) went out of vogue. It was extremely cumbersome and inefficient to actually deliver the certificates to many individuals at great distances throughout a trading day.<sup>86</sup> In fact, the late 1960s and 1970s saw a so-called paperwork crisis where trading days were cut in half to give time for trading staff to catch up; transfer and recording errors abounded during this period.<sup>87</sup> The answer was for the law to also allow for the creation of an *intangible* token. These are known under the UCC as uncertificated securities.<sup>88</sup>

Transfer of intangible tokens occurs by having the name of the owner changed in the official records of the company, rather than by a change

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77. *Id.* For a discussion of the theorizing of shareholder rights as either property rights or contract rights, see generally Robert Anderson IV, *A Property Theory of Corporate Law*, 2020 COLUM. BUS. L. REV. 1.

78. U.C.C. § 8-102(a)(4) (AM. L. INST. & UNIF. L. COMM’N 1977).

79. *Id.* § 8-102(a)(2), (a)(13).

80. *Id.* § 8-102(a)(2).

81. *Id.* § 8-301(a)(1).

82. *Id.* § 8-104(a).

83. *Id.* § 8-102(a)(13).

84. *Id.* § 8-102(a).

85. See Martin J. Aronstein, *The Decline and Fall of the Stock Certificate in America*, 1 J. COMP. CORP. L. SEC. REG. (1978) (explaining that the reform of the paper certificate began in the 1960s and 1970s).

86. FINANCIAL COLLATERAL, *supra* note 63, at 52.

87. *Id.*; *In re Appraisal of Dell Inc.*, No. 9322, 2015 WL 4313206, at \*1 (Del. Ch. July 30, 2015) (discussing the paperwork crisis).

88. U.C.C. § 8-102(a)(18).

in physical possession.<sup>89</sup> In essence, this created a precursor to digital possession, which is largely referred to as *control*. Rather than possessing the token (and thereby acquiring referenced rights), one would control the token by having it associated with them in an official ledger.<sup>90</sup> The controller of the token acquired the legal rights in it. Having the legal rights in the token gave the holder rights in the corporation.

Control over securities developed even more in the second half of the twenty-first century with the indirect holding of these tokens.<sup>91</sup> In 1973, certificated securities issued by publicly traded companies were deposited with a private and centralized entity called the Depository Trust Company.<sup>92</sup> This depository company was designated as the owner of the securities, but it merely held them for others—specifically, on behalf of other intermediary parties (such as banks and broker-dealer firms).<sup>93</sup> In turn, individual investors had so-called brokerage accounts with these one-step-removed intermediaries, such as Charles Schwab, Vanguard, and the like.<sup>94</sup> This concept—the idea of being the ultimate beneficial owner of a token through the indirect holding of that token via an account with a securities broker—is memorialized in the UCC through Article 8’s rules on *securities entitlements*, and this system dominates public securities trading to this day.<sup>95</sup>

In sum, despite the desire to move away from tangible tokens, there was still a need to maintain the token itself as an authoritative object, even if rights in it could be acquired through new, indirect means. The holder of the securities entitlement, which is itself a token, holds the rights in the shares of the corporation (yet another token), and in turn has rights in the corporation (the underlying thing). Moreover, although holding the token evolved to now include control of an intangible thing, the existence and

89. *Id.* § 8-301(b)(2).

90. *Id.* § 8-301 cmt. 3.

91. See RICHARD D. FREER & DOUGLAS K. MOLL, *PRINCIPLES OF BUSINESS ORGANIZATIONS* 415 (2d ed. 2018) (explaining the “book entry” or “street name” system that developed starting in the 1960s).

92. *About DTCC*, DEPOSITORY TR. CO., <https://www.dtcc.com/about/businesses-and-sub-sidiaries/dtc> [<https://perma.cc/NAL2-4PPB>].

93. Issuer Restrictions or Prohibitions on Ownership by Securities Intermediaries, 69 Fed. Reg. 70,852, 70,853 (Dec. 7, 2004) (codified at 17 C.F.R. pt. 240).

94. See JEFFREY J. HAAS, *CORPORATE FINANCE* 326–27 (2d ed. 2021) (stating that stockholders beneficially own shares through a brokerage account).

95. U.C.C. § 8-102(a)(17) (AM. L. INST. & UNIF. L. COMM’N 1977) (“‘Security entitlement’ means the rights and property interest of an entitlement holder with respect to a financial asset specified in Part 5.”). A *financial asset* includes “a security” or “any property that is held by a securities intermediary for another person in a securities account if the securities intermediary has expressly agreed with the other person that the property is to be treated as a financial asset under this Article.” *Id.* § (a)(9); see also JAMES J. WHITE & ROBERT S. SUMMERS, *UNIFORM COMMERCIAL CODE* 1304 (6th ed. 2010) (explaining the overlap of UCC sections discussing securities entitlements).



continued recognition of tokens persists in securities law because it still serves a useful economic purpose.

### 3. Deeds of Real Property

Deeds of real property provide yet another instance of tokenization under the law. In Anglo-American law, the transfer of an interest in real property could be accomplished without a writing through a ceremony-laden process known as *feoffment with livery of seisin*.<sup>96</sup> This was accomplished, as first year property law students know all too well, through the formal delivery of possession of the land from the grantor to the grantee.<sup>97</sup> The grantor at the ceremony needed only say as little as “I enfeoff thee and thy heirs forever of black acre” to accomplish the transaction.<sup>98</sup>

Over time, however, there was a recognition that these transactions needed evidence of their occurrence. English courts generally suffered from a certain level of deception in their proceedings, with perjury and the use of so-called professional witnesses (individuals who hung around the court house waiting to swear to anything for a price) being all too common.<sup>99</sup> For this reason and others related to it, the result was that some individuals began executing a document—often called a deed or charter of feoffment—that did not replace the ceremony and oral transfer but instead served as after-the-fact evidence of it, using language in the past tense.<sup>100</sup>

The *need-for-a-token* problem in land transactions, however, eventually became a problem of public administration. English revenue officials needed a better way to determine when property had changed hands and triggered tax implications.<sup>101</sup> So, in 1536, the English statute of enrolments<sup>102</sup> came into effect, which required that so-called bargain and sale<sup>103</sup> transactions of freehold interests in real property had to be consummated in writing under seal, with the document thereafter recorded in a land records registry.<sup>104</sup> From this point onward, a transfer

96. JAMES H. BREWSTER, *THE CONVEYANCE OF ESTATES IN FEE BY DEED* § 11, at 11 (1904).

97. *Id.*

98. *Id.* § 14, at 13.

99. G.H.L. Fridman, *The Necessity for Writing in Contracts Within the Statute of Frauds*, 35 U. TORONTO L.J. 43, 47 (1985); FRANKLIN G. SNYDER & MARK EDWIN BURGE, *AMERICAN CONTRACT LAW FOR A GLOBAL AGE* 259 (2017).

100. BREWSTER, *supra* note 96, § 15, at 13.

101. See SNYDER & BURGE, *supra* note 99, at 259 (stating that the deed system helped tax collectors discern who owned what).

102. Statute of Enrolments 1536, 27 Hen. VIII c. 16 (Eng.).

103. *Deed*, BLACK'S LAW DICTIONARY (11th ed. 2019) (“[B]argain-and-sale deed. (1863) A deed that lacks an express covenant about the validity of the title but implies that the grantor holds title to the property and conveys it to a buyer for valuable consideration.”).

104. BREWSTER, *supra* note 96, § 12, at 12.

of this particular type of legal interest in land—although not as prevalent as other types of transfer at the time, such as leaseholds<sup>105</sup>—had to be memorialized in a written document.<sup>106</sup> A token was required.

Finally, in 1677, the English Parliament passed the famous statute of frauds.<sup>107</sup> It, like the statutes of frauds later passed in the various jurisdictions that now comprise the United States,<sup>108</sup> provided that the transfer of any interest in land required a written instrument.<sup>109</sup> The purpose of the law, as the name so aptly suggests, was to prevent “frauds and perjuries by requiring in many cases written evidence of a contract.”<sup>110</sup> The token (a deed) served that purpose.

To be sure, deeds are not tokens in the most absolute sense. In other words, it was and is possible to acquire title to real property without a deed. For example, one may become the owner of real property through intestate inheritance, the rights of a spouse, or adverse possession for the required period of time.<sup>111</sup> But deeds created an efficient way of establishing the relative rights of parties in voluntary transactions involving land. Aside from the exceptions, a deed was necessary to convey real property interests, and it did so efficiently through notice rules. The original common law rule simply provided that one who acquired real property through a deed had superior title to any subsequent party who also purported to acquire title to that same property via a deed.<sup>112</sup> Over time, this general rule was modified through the introduction of recording system statutes that incentivized grantees to make their deeds known, typically through recording them in a public registry of land transfers.<sup>113</sup> The token, the deed, showed that the transaction had actually occurred, and served as the foundation for a property recording system that could be inspected by the public—essentially, a public repository of land tokens. Today, the holder of the

105. *Id.* § 13, at 12.

106. *Id.* § 12, at 12. Additionally, at this time it was necessary to execute a writing in order to transfer an incorporeal right, since a livery of seisin ceremony was not possible when the thing was not land, but rather an intangible. See 1 ROBERT T. DEVLIN, *A TREATISE ON THE LAW OF DEEDS* 4 (1887).

107. Statute of Frauds 1677, 29 Car. 2 c. 3 (Eng.). American courts subsequently followed English courts when construing their own statute of frauds. See DEVLIN, *supra* note 106, at 5.

108. W.B. MARTINDALE, *A TREATISE ON THE LAW OF CONVEYANCING* 3, n.1 (2d ed. 1889) (listing statutes of limitations by U.S. state).

109. See DEVLIN, *supra* note 106, § 4, at 4.

110. MARTINDALE, *supra* note 108, § 2, at 2.

111. 1 LEWIS N. DEMBITZ, *A TREATISE ON LAND TITLES* § 28 (1895) (describing title acquired by descent); 2 *id.* § 104 (describing title acquired through marital rights); see *id.* § 175 (describing title acquired by prescription).

112. John H. Scheid, *Down Labyrinthine Ways*, 80 U. DET. MERCY L. REV. 91, 102–03 (2002).

113. See Christopher L. Peterson, *Two Faces: Demystifying the Mortgage Electronic Registration System’s Land Title Theory*, 53 WM. & MARY. L. REV. 111, 115 (2011).

token (deed) is the holder of the rights in the real property relative to others also claiming title through a deed. The token embodies rights in the land and, with notice rules, works to moderate land title disputes.

#### 4. Bills of Lading

Yet another example of tokens in the law is the bill of lading. This is a document that a carrier of goods issues upon receipt of goods to be shipped.<sup>114</sup> The document contains certain information about the goods and the parties, the destination of the goods, and any special terms about the delivery.<sup>115</sup> If the bill of lading indicates to whom the goods should be delivered when they reach their destination (called a *straight bill of lading* because it is nonnegotiable), then the carrier may only deliver the goods to that person.<sup>116</sup> If the bill of lading is negotiable instead, then the carrier must deliver the goods to whomever possesses the document and is indicated on its face.<sup>117</sup>

In this way, the bill of lading controls who gets possession of the goods. Specifically, a bill of lading is a type of document of title.<sup>118</sup> This means that it controls ownership of the goods while they are in transit.<sup>119</sup> The bill of lading is a token for the goods. The law gives legal recognition to the bill of lading's role through Article 7 of the UCC and under the Federal Bill of Lading Act.<sup>120</sup>

Like with the other examples of legal tokenization, the bill of lading was created to solve a very specific problem. The issue comes down to the relationship between distant parties in a commercial sales transaction.<sup>121</sup> The buyer of goods desires to purchase them from a commercial seller, but the two parties are unfamiliar with each other.<sup>122</sup> The seller is uncertain of the buyer's ability to pay for the goods, which the buyer will not pay for until they actually arrive and can be inspected.<sup>123</sup> The seller, of course, is hesitant to ship goods without

114. FRED H. MILLER, SALES AND LEASES OF GOODS 127 (4th ed. 2003); U.C.C. § 1-201(b)(6) (AM. L. INST. & UNIF. L. COMM'N 1977).

115. See MILLER, *supra* note 114, at 127–28.

116. *Id.* at 130.

117. *Id.* at 129–30 (discussing the differences between negotiable and non-negotiable bills of lading).

118. *Document of Title*, BLACK'S LAW DICTIONARY (11th ed. 2019); U.C.C. § 1-201(b)(6) (AM. L. INST. & UNIF. L. COMM'N 1977).

119. See RALPH H. FOLSOM ET AL., PRINCIPLES OF INTERNATIONAL BUSINESS TRANSACTIONS 201–03 (4th ed. 2017).

120. See U.C.C. § 7-309(a) (AM. L. INST. & UNIF. L. COMM'N 1977); Ch. 415, 39 Stat. 538 (1916) (codified as amended at 49 U.S.C. §§ 80101–80116).

121. See MILLER, *supra* note 114, at 130–31.

122. *Id.*

123. *Id.*

receiving some form of payment.<sup>124</sup> So, to solve this issue, the seller ships the goods to the buyer through a commercial carrier.<sup>125</sup> A bill of lading is issued by the carrier at the time of shipment, and it can be made out, for example, to the seller or its agent.<sup>126</sup> The goods are shipped and, at the same time, the seller sends the bill of lading ahead to the seller's agent who is located at the shipment destination.<sup>127</sup> The goods arrive and are delivered to the seller's agent, who then meets with the buyer to negotiate over the bill of lading in exchange for payment.<sup>128</sup> In this way, the seller maintains legal control of the goods until payment can be made.<sup>129</sup> With the bill of lading now in hand, the buyer is able to direct the carrier to deliver the goods.<sup>130</sup>

In essence, the chief function of the bill of lading to serve as “a legal embodiment of the rights to the goods described therein.”<sup>131</sup> It is a true token—it embodies the legal rights in the goods being shipped.<sup>132</sup> The carrier will only deliver the goods to the person designated in the document.<sup>133</sup> The bill of lading is the token and the holder of it has the exclusive rights in the goods.

## 5. Miscellaneous Other Tokens

This Section has provided elaboration on the tokenization examples above so that one can see the role played by the law in giving the tokens legal effect and to show how, in each case, tokenization was aimed at solving an economic problem. There are, however, other examples of tokenization, the details of which this Section does not elaborate on but that bear mentioning. For example, the certificate of title statutes for automobiles and, to some degree, the various kinds of bailment receipts also perform token functions. Sometimes they provide absolute rights against the world, and sometimes they provide only relative rights, superior against designated others. But, in each case, tokenization made what was otherwise a cumbersome or costly transaction easier and more efficient.

Like other legal tokens, the automobile certificate of title developed in response to a specific problem. Every state in the United States issues certificates of title for automobiles, and many states designate other types

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124. *Id.*

125. FOLSOM ET AL., *supra* note 119, at 7, 9.

126. MILLER, *supra* note 114, at 130–31.

127. *Id.*

128. *Id.*; FOLSOM ET AL., *supra* note 119, at 7–8.

129. *See* MILLER, *supra* note 114, at 130–31; FOLSOM ET AL., *supra* note 119, at 7.

130. MILLER, *supra* note 114, at 130–31.

131. FOLSOM ET AL., *supra* note 119, at 203.

132. *Id.*

133. *Id.*

of chattels that require such certificates,<sup>134</sup> such as boats, snowmobiles, and all-terrain vehicles.<sup>135</sup> The thread tying these types of assets together is mobility; they are easily moved among jurisdictions.<sup>136</sup> This ease of movement, coupled with a lack of coordination among states with respect to giving notice of automobile liens, made early automobile lenders susceptible to fraud.<sup>137</sup> Finance companies made early automobile loans under chattel mortgage statutes, which required liens to be recorded in the county of the debtor's residence.<sup>138</sup> Because of the mobility of automobiles, it was fairly easy to lie about an automobile's provenance and thus to mislead a buyer or lender about prior liens on the car.

In the 1930s, twenty-nine of the forty-eight existing states issued certificates of title for automobiles.<sup>139</sup> At that time, as is the case today, a lender taking a security interest in an automobile was required to file a notice of its lien in some public record, either at the county or state level. Early certificate of title statutes varied in the effect that they gave to the title document. Some states had no requirement that such a lien be noted on the certificate of title as well; others did so provide but did not treat such a notation as constructive notice of liens on the car.<sup>140</sup>

Despite the differences among certificate of title statutes, certificates of title developed to perform several distinct functions: providing an easy means to determine the owner of a vehicle; compelling the payment of sales taxes by the vehicle's owner; preventing fraud and theft of motor vehicles; preventing trafficking in stolen automobiles; and lending stability to the business of selling and financing automobiles.<sup>141</sup>

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134. Cf. Larry T. Bates, *Certificates of Title in Texas Under Revised Article 9*, 53 BAYLOR L. REV. 735, 736 (2001) (explaining that certificate-of-title laws were intended to prevent the theft of personal property).

135. *Id.* at 735.

136. *Id.* at 736.

137. See Fairfax Leary, Jr., *Horse and Buggy Lien Law and Migratory Automobiles*, 96 U. PA. L. REV. 455, 455–56 (1948) (explaining how dishonest second-hand car dealers in the 1940s attempted to defraud automobile finance companies).

138. See Peter James McGrath, Jr., Note, *The Application of the North Carolina Motor Vehicle Act and the Uniform Commercial Code to the Sale of Motor Vehicles by Consignment: American Clipper Corp. v. Howerton*, 63 N.C. L. REV. 1105, 1111 (1985) (describing the pre-1961 North Carolina lien recordation statute, which was in effect before North Carolina enacted the UCC); Leary, Jr., *supra* note 137, at 455–56.

139. Clark M. Byse, *Automobiles—Recording of Encumbrances—Certificate of Title*, 12 WIS. L. REV. 92, 92 (1936); see Leary, Jr., *supra* note 137, at 455–56.

140. See Byse, *supra* note 139, at 92–94 (describing states that required the “legal owner” to hold physical possession of the certificate of title until the lien on the automobile was satisfied but still required the lienholder to record its lien with the relevant register of deeds).

141. See *In re Littlejohn*, 519 F.2d 356, 358 (10th Cir. 1975), *overruled by In re Kerr*, 598 F.2d 1206 (10th Cir. 1979); Ellen Beverley, Note, *Buyer-Secured Party Conflicts and Automobiles: A New Facet to an Old Problem*, 10 LOY. U. CHI. L.J. 76, 78–79 (1978) (describing the development of certificate-of-title laws).

The certificate of title is not as “strong” a token as some of the other tokens this section has discussed. If a lender wants to foreclose its interest in a titled automobile, that lender must seize the car, not the certificate of title.<sup>142</sup> Yet state laws provide a clear link between the certificate of title and the underlying asset by recognizing that a certificate of title is prima facie evidence of the facts stated on the certificate, such as the name of the owner and the existence and holders of liens on the vehicle.<sup>143</sup>

Another token-like piece of paper is the bailment ticket. There are many types of bailments, and the items subject to bailment contracts range from low-value property such as clothing at a dry cleaner, to mid-range items such as cars in a parking lot, to large quantities of goods covered by bills of lading and warehouse receipts. When a bailee delivers a claim check to the bailor for goods, the claim check serves to direct the bailee to deliver the goods to the person holding the claim check.<sup>144</sup> The tokenization that takes place in the bailment context does not always give the bailor rights in the bailed goods, but rather protects the bailee against liability for misdelivery of the goods by protecting a bailee who delivers the goods to the person who presents the bailment ticket.<sup>145</sup>

\* \* \*

All of the above tokenization examples illustrate a link between the token and an underlying asset. In some cases, such as negotiable instruments, securities, and bills of lading, transfer of the token constitutes transfer of the underlying asset. In the others, the token provides proof of ownership of the asset. The next Section looks at the process of minting an NFT, and then examines the contracts governing NFTs to determine whether NFTs function as tokens in the ways described above.

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142. See, e.g., NATL. CONF. OF COMM’RS ON UNIF. STATE L., UNIFORM CERTIFICATE OF TITLE ACT § 12 (2006), <https://www.uniformlaws.org/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=51c4ff28-24c4-be00-741ec757fb530d97&forceDialog=0> [https://perma.cc/34SE-PBEE].

143. See, e.g., 75 PA. CONS. STAT. § 1106(c) (2021).

144. See, e.g., *Fisher v. Pickwick Hotel, Inc.*, 108 P.2d 1001, 1002 (Cal. Ct. App. 1940) (per curiam) (explaining that the bailment contract between a parking garage and a car owner stated that the garage would deliver the car only upon presentation of the claim check).

145. Cf. R.H. Helmholtz, *Bailment Theories and the Liability of Bailees: The Elusive Uniform Standard of Reasonable Care*, 41 U. KAN. L. REV. 97, 124–25 (1992) (explaining that bailees are held liable for misdelivery when they are deceived about the identity of the true owner of the bailed goods); *Cent. Meat Mkt. v. Longwell’s Transfer, Inc.*, 62 S.W.2d 87, 89 (Tex. Ct. App. 1933) (explaining that a misdelivery of property by a bailee to someone unauthorized by the true owner constitutes conversion of the bailed goods).

## B. *In the Market*

Having explained the evolution of legal tokenization and furnished examples of it, this Section now turns to the contemporary tokenization craze. To explore this phenomenon more fully, the authors of this Article first conducted a token-minting exercise, the mechanics of which are fairly typical of the tokenization process across the platforms. Second, the authors compiled a dataset of terms of service from a variety of token-mining platforms. In doing so, this section surveys what creators and holders of these tokens actually agree to, compared to what they may believe from reading popular press and trade publications on the promise and future of tokens in the real economy. This Section uses this discussion as a foundation for how the NFT promise departs from what the law actually provides.

### 1. A Prototypical NFT Transaction

In conducting the NFT exercise, we had to first decide on a reference/underlying asset to tokenize.<sup>146</sup> Since digital art has been a popular reference asset of late, a digital rendering of a physical oil painting of a Charolais cow titled “The Clearest Light is the Most Blinding” by the artist Dub Lee was chosen.<sup>147</sup> Mintable was then selected as the token platform company.<sup>148</sup> Mintable is a widely used minting platform that allows an individual to create a free account and mint a token in connection with digital art, also for free.<sup>149</sup> The authors created an account and clicked “Start Minting Now” and then “Create a New Item.” Before going any further, the authors were required to link a digital wallet with the Mintable account. The authors created a digital wallet account through the wallet and exchange platform company,

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146. The term *token* also has a specific meaning within distributed-ledger technology circles. Specifically, tokens are units (which in the case of NFT tokens, as we describe elsewhere, are meant to signify rights in something else) that are built on top of existing distributed-ledger networks. These existing networks typically issue their own native digital asset (for example, the native digital asset for Ethereum’s distributed ledger network is ether). Any other digital asset created on the network is a token, with the network having specific standards for creating tokens on that particular network. See *Digital Assets: Cryptocurrencies vs. Tokens*, CRYPTOPEDIA (May 17, 2021), <https://www.gemini.com/cryptopedia/cryptocurrencies-vs-tokens-difference> [<https://perma.cc/EX6M-6G4S>].

147. Dub Lee, *The Clearest Light Is the Most Blinding* (illustration, in *On the Ranch*), DUB LEE PAINTINGS, <https://www.dubleepaintings.com/on-the-ranch?pgid=k5y7suy1-60653017-49c3-4c3f-bc3a-aa189af64c48> [<https://perma.cc/N5MA-4DSE>]. This exercise was conducted with the permission of the artist.

148. See MINTABLE, <https://mintable.app> [<https://perma.cc/246U-Z8XU>].

149. See Taylor Locke, *The CEO of Mark Cuban-Backed Mintable on the Bull-Case for NFTs, Founding the Business and How the Market Could Evolve*, CNBC (Mar. 19, 2021, 1:30 PM), <https://www.cnbc.com/2021/03/19/mintables-zach-burks-on-investment-from-cuban-bull-case-for-nfts.html> [<https://perma.cc/QM79-NTYZ>].

Coinbase.<sup>150</sup> The reason for needing to connect a wallet is because payment for a Mintable NFT, if purchased, is made using the Ethereum’s cryptocurrency ether. Coinbase allows for trading in ether, thus the authors selected it as the home platform for the wallet account.

Having then connected the Coinbase wallet account to the Mintable account (through the use of so-called seed phrases—a type of long password used by crypto wallet companies), the digital painting, its name, and a brief description were uploaded. The authors also checked a box that said, “Transfer Copyright when purchased?” The graphic next to this option explained the effect of this box by saying, “When a buyer purchases this item, they have the rights to use the file commercially.” Finally, the authors were asked to select whether to set a fixed price, to allow an auction, or to allow an auction with a “Buy Now” opportunity. The authors selected *auction*, set the minimum bid at \$400, and clicked submit.<sup>151</sup>

The result was the creation of an NFT that appeared from the face of the website to be connected to the digital painting, as evidenced by a listing page on Mintable’s publicly searchable site of NFTs for sale. The listing page showed the digital painting with the name and description and provided a variety of item metadata, which is reproduced in Table 1 below.

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150. COINBASE, <https://www.coinbase.com> [<https://perma.cc/2VE5-M4JH>].

151. Although we set the minimum bid at \$400, Mintable sets the minimum bid at \$441.61 to include the platform fee for facilitating the transaction.



Table 1  
NFT Metadata

Item Metadata	
Contract Address	Token Metadata
0x8c5aCF6dBD24c66e6FD44d4A4C3d7a2D955AA ad2	{ "symbol": "Mintable Gasless store", "image": "https://d1iczm3wxxz9zd.cloudfront.net/613b908d
Token ID	0000000000/8619324028261876385436750160835360531676033165
86193240282618763854367501 608353605316760331651808345700 084608326762837402898	"animation_url": "", "royalty_amount": 500, "copyright_transfer": true, "address": "0x8c5aCF6dBD24c66e6FD44d4A4C3d7a2D955AAad2", "tokenId": "86193240282618763854367501608353605316760331
Token Name	"resellable": true, "original_creator": "0xBe8Fa52a0A28AFE9507186A817813eDC1 "edition_number": 1, "description": "<p>A beautiful bovine in the summer sun "auctionLength": 43200, "title": "The Clearest Light is the Most Blinding", "url": "https://metadata.mintable.app/mintable_gasless/86193240
The Clearest Light is the Most Blinding	"file_key": "", "apiURL": "mintable_gasless/", "subtitle": "bovine from South Texas", "name": "The Clearest Light is the Most Blinding", "auctionType": "Auction", "category": "Art", "edition_total": 1, "gasless": true }
Original Image	
https://d1iczm3wxxz9zd.cloudfront.net/613b908d-19ad-41b1-8bfa0e016820739c/0000000000000000/86193240282618763854367501608353605316760331651808345700084608326762837402898/ITEM_PREVIEW1.png	
Original Creator	
0xBe8Fa52a0A28AFE9507186A817813eDC14 54E004	

Before analyzing the contents of Mintable’s Terms of Use, it is important to note what the Mintable user appears to be expecting from NFT transactions. These expectations are based on observable factors, both as part of the minting process and as indicated by searching through Mintable’s website. The most prominent information appearing next to the “Start Minting Now” button on the platform’s website is a statement indicating that one can “turn any creation into an item on the blockchain”<sup>152</sup> or “trade digital items on Mintable to easily earn crypto.”<sup>153</sup> This seems to suggest that through Mintable’s platform one can turn any kind of creation (for example, a digital painting) into an item (an NFT) that will purportedly go on the blockchain. Relatedly, one can then exchange the NFT item for cryptocurrency (which can then be

152. Peter C. Beller, *This Cryptocurrency Enthusiast Wants to Help You Create NFTs*, MASTERCARD NEWSROOM (Nov. 19, 2021), <https://www.mastercard.com/news/perspectives/2021/mintable-nft-cryptocurrency-enthusiast-wants-to-help-you-create-nfts/> [https://perma.cc/FJ4Q-VAR9].

153. *NFT Marketplaces*, CARICOIN, <https://www.carico.in.com/nft/marketplaces/> [https://perma.cc/MB77-CXS8].

exchanged elsewhere for fiat money). Also, when creating the NFT, a user is first asked to indicate “[w]hat kind of item [they] are . . . making[.]”<sup>154</sup> The choices are art, music, videos, collectibles, sports, and utility.<sup>155</sup> There is no way to add another category. It is not clear whether users are being told that they are making the actual reference asset or that they are creating the NFT, although the categories suggest the former. Overall, the user is never directly told what this transaction will accomplish. Thus, to the extent users are searching for a direct explanation on the platform site during the minting process to provide more elaboration than what they discover from social media influencers and in online news stories, they will not find it.

The authors did discover, however, a blog post on Mintable’s site titled “A Guide to Selling NFTs (ERC-721s) Using Mintable.”<sup>156</sup> A portion of this post had the header: “So How Can You Use These Tokens In The Real World?” The most noteworthy assertions for purposes of this Article are that a Mintable token can be used for the following:

- Establishing ownership of an item external to the token
- Establishing who is allowed access to content or locations
- Linking the token owner to a web URL, a photo, video or other web based asset
- Establishing ownership of something in the [token’s] Metadata
- . . . .
- Tokenizing content
- Tokenizing anything that could have value<sup>157</sup>

Note that each of these assertions suggest the conveyance of property rights. The most explicit instance of this is the first assertion, which purports to give the holder of the token actual ownership rights in an underlying thing (and perhaps it even means specifically in an external/tangible sense). The second assertion mentions linking the NFT to another thing, which could also be understood as creating a rights-based connection between the token and some other digital asset. The third assertion again mentions ownership, although this time in a meta component of the token itself. The fourth and fifth assertions each gesture at creating a thing that represents rights in something else (content or “anything that can have value”<sup>158</sup>).

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154. *Create a Store*, MINTABLE.APP, <https://mintable.app/createstore> [<https://perma.cc/JP9T-EHJQ>] (click “Sign Up” and create an account and then click “Create a store”).

155. *Id.*

156. Zach of Mintable.app, *supra* note 37.

157. *Id.*

158. *Id.*

In sum, all of this information would ostensibly inform the user of the nature of the transaction and the rights being created or acquired. It suggests that the token will convey property rights (and in some cases, ownership explicitly) in something, that something often being another asset altogether. The next Section turns to the fine print—the terms of service used by Mintable and an array of similar token-minting platforms.

## 2. Exploring a Terms of Service Dataset

The creation and transfer of NFTs are governed by terms of service proffered by the various entities that enable such creation and transfer. The authors of this Article reviewed eight terms of service documents to which creators of NFTs must agree to create and transfer their NFTs.<sup>159</sup> Seven of the platforms offering the terms of service that were reviewed appear on various “Top NFT platform” lists.<sup>160</sup> The eighth platform, SuperWorld, was chosen to compare tokenized virtual land with the virtual land marketed by Second Life almost twenty years ago. In reviewing these terms, the authors sought to ascertain the property rights created in the token and the relationship between ownership, possession, or control of the token and the underlying asset. The authors also explored these terms to compare them with what platform companies claim on their websites and in related marketing materials. The vast majority of the public does not read terms of service contracts (or any fine print in contracts of adhesion, for that matter), but they can often inform how courts adjudicate related contract claims.<sup>161</sup>

The websites make broad statements about what these minting platform companies do. For example, Foundation claims to bring “digital creators, crypto natives, and collectors together to move culture forward.”<sup>162</sup> The MakersPlace website offers artists the opportunity to “protect . . . their unique digital creations” and “[e]stablish a permanent proof of ownership” for their digital creations.<sup>163</sup> SuperRare also focuses

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159. These platform companies are Foundation, KnownOrigin, Makersplace, Mintable, OpenSea, Rarible, SuperRare, and SuperWorld.

160. See, e.g., *Compare the Top NFT Platforms of 2021*, SOURCEFORGE, <https://sourceforge.net/software/nft/> [<https://perma.cc/MM8C-VCJM>]; Werner Geyser, *Top NFT Marketplaces for Creators to Sell Non-Fungible Tokens*, INFLUENCER MKTG. HUB (July 13, 2021), <https://influencermarketinghub.com/nft-marketplaces/> [<https://perma.cc/WLB3-H57Z>]; Anatol Antonovici, *NFT Marketplaces: A Beginner's Guide*, COINDESK (July 12, 2021), <https://www.coindesk.com/nft-marketplaces-a-beginners-guide> [<https://perma.cc/8ECB-V8J5>].

161. Yannis Bakos et al., *Does Anyone Read the Fine Print? Consumer Attention to Standard-Form Contracts*, 43 J. LEGAL STUD. 1, 2 (2014); Jonathan A. Obar & Anne Oeldorf-Hirsch, *The Biggest Lie on the Internet: Ignoring the Privacy Policies and Terms of Service Policies of Social Networking Services*, INFO. COMMUN. & SOC'Y 128, 129 (2018); Colin P. Marks, *Online and “As Is,”* 45 PEPP. L. REV. 1, 3, 6–7 (2018).

162. FOUNDATION, <https://v1.foundation.app/> [<https://perma.cc/9QHL-SYB8>].

163. MAKERSPLACE, <https://makersplace.com/creators/> [<https://perma.cc/2B5Y-2DFJ>].

on uniqueness, touting its site as “a marketplace to collect and trade unique, single-edition digital artworks.”<sup>164</sup> Mintable advertises on its website that its users can “[t]urn any creation into a blockchain item.”<sup>165</sup>

Lastly, it is important to note that the study of the terms of service in this Part is a snapshot in time. The discussion below represents the terms of service as they existed at the time we studied them, which was between May and August 2021. Some of these firms change their terms of service periodically, and often they do so without giving formal notice to the holders of the NFTs. Indeed, the terms of service for these various platforms explicitly state that changes are permissible without any kind of affirmative notice or with minimal notice.<sup>166</sup>

### a. Who Controls the Token?

The various sites describe themselves as platforms that enable the creation and trade of tokens using smart contracts on the Ethereum blockchain.<sup>167</sup> Foundation’s terms make clear that while Foundation provides a transactional platform for trade in NFTs, it is solely a “non-custodial service provider.”<sup>168</sup> Defining itself as a platform, OpenSea claims that it is “not party to any agreement between any users.”<sup>169</sup> Like the other services, SuperRare is a platform and does not take “custody, possession or control” of any SuperRare item.<sup>170</sup>

All of the sites that were studied disclaim control over the assets whose creation they enable, although the sites can, in fact, deny an owner access to those assets. If a platform truly lacked control, it would have no ability to affect the user’s access to the NFT after it is created. This is not the case for two reasons.

The first reason is explained in the blog on the OpenSea website. OpenSea bills itself as “the world’s first and largest NFT marketplace.”<sup>171</sup> The OpenSea Blog contains a long post called *The Non-Fungible Token*

164. SUPERRARE, <https://medium.com/superrare> [<https://perma.cc/UC4L-MVH2>].

165. MINTABLE, <https://zilliqa.mintable.app/> [<https://perma.cc/TGU6-P5LG>].

166. See, e.g., *Terms of Service*, FOUNDATION § 2 (May 18, 2022), <https://foundation.app/terms> [<https://perma.cc/XT4W-ZPUS>]; *Terms of Service*, OPENSEA § 1 (Dec. 31, 2021), <https://opensea.io/tos> [<https://perma.cc/FB46-M3XQ>].

167. See *Terms of Service*, FOUNDATION, *supra* note 166, § 1 (stating that although Foundation provides the transactional platform, all of the tokens are on the Ethereum blockchain and therefore out of the control of Foundation); *Terms of Service*, KNOWN ORIGIN § 3 (Apr. 23, 2021), <https://medium.com/known-origin/terms-of-service-3efae6d0c20f> [<https://perma.cc/49F2-9WLF>] (describing its service as a platform that allows users to create and trade NFTs using smart contracts on the Ethereum network).

168. *Terms of Service*, FOUNDATION, *supra* note 167, § 1(b).

169. *Terms of Service*, OPENSEA, *supra* note 166, § 1.

170. *SuperRare Terms of Service*, SUPERRARE (Mar. 8, 2022), <https://www.notion.so/Super-Rare-Terms-of-Service-075a82773af34aab99dde323f5aa044e> [<https://perma.cc/T4H7-XK9T>] (explaining that “SuperRare Labs is a Non-Custodial Service Provider”).

171. OPENSEA, <https://opensea.io> [<https://perma.cc/38SP-RXRR>].

*Bible: Everything You Need to Know About NFTs.*<sup>172</sup> In it, the author also debunks an important and widely held belief about NFTs—that NFTs are permanent because they are attached to smart contracts.<sup>173</sup> They are not. Individuals must use web or mobile app portals to access their NFTs. If those sites or apps disappear, so does much of the NFT’s value.<sup>174</sup> Moreover, if those platforms are hacked, then the NFTs are also lost. For instance, in December 2021, New York art dealer Todd Kramer lost \$2.2 million worth of NFTs when his wallet account was hacked.<sup>175</sup>

The second reason that the sites have control is that while their terms of use disclaim control over the NFT assets, they reserve the right to remove all access to the NFTs from those sites. For example, although Mintable describes itself as only a “passive conduit for your online distribution and publication of your User Content,” it also reserves the right to remove any content that violates the law or the terms of use.<sup>176</sup> OpenSea warns its users that if they violate the OpenSea Terms of Service, OpenSea may remove the users’ assets from its site.<sup>177</sup> Actions that violate the terms of service include listing content that violates intellectual property laws and listing abusive content.<sup>178</sup>

#### b. What is the Property Link Between the Token and the Underlying Asset?

The most important and most confusing aspects of the various terms of service relate to the property rights that NFT ownership conveys in the underlying creative work. Some sites make grand statements about the similarities between owning NFTs and owning “real world” art. KnownOrigin says that “[o]wning a Token is just like owning a physical

172. Finzer, *supra* note 37.

173. *See id.*; *see also* Ryan Browne, *Crypto Collectibles Are Selling for Thousands—And Celebrities Like Mark Cuban Are Cashing In*, CNBC (Feb. 26, 2021, 3:02 AM), <https://www.cnbc.com/2021/02/25/nfts-why-digital-art-and-sports-collectibles-are-suddenly-so-popular.html> [<https://perma.cc/TRL6-7EZK>] (“What NFTs offer are a formalization of digital ownership, and a way for that ownership to be permanent beyond the life of any one company, game or platform.” (quoting Matt Hall, co-founder of Larva Labs)); Rishi Iyengar & Jon Sarlin, *NFTs Are Suddenly Everywhere, But They Have Some Big Problems*, CNN (Mar. 30, 2021, 6:09 PM), <https://www.cnn.com/2021/03/30/tech/nft-hacking-theft-environment-concerns/index.html> [<https://perma.cc/PEY6-Y6VQ>] (“Because of the immutable nature of the blockchain ledger and the lack of a centralized authority managing it, every transaction is effectively permanent . . .”).

174. *See* Finzer, *supra* note 37.

175. Eileen Kinsella, ‘All My Apes Gone’: An Art Dealer’s Despondent Tweet About the Theft of His NFTs Went Viral . . . and Has Now Become an NFT, ARTNET NEWS (Jan. 5, 2022), <https://news.artnet.com/market/kramer-nft-theft-turned-nft-2056489> [<https://perma.cc/6UDV-7TC2>].

176. *Terms of Use*, MINTABLE 3 (Apr. 15, 2019), [https://d3luz8cn6n4wh0.cloudfront.net/terms\\_of\\_use\\_04\\_15\\_2019.pdf](https://d3luz8cn6n4wh0.cloudfront.net/terms_of_use_04_15_2019.pdf) [<https://perma.cc/YG58-742W>].

177. *Terms of Service*, OPENSEA, *supra* note 166, § 6.

178. *Id.* (prohibiting listings and assets that incite hate or violence against others).

artwork.”<sup>179</sup> The SuperRare Terms of Service make the same claim, describing ownership of a SuperRare Item (SuperRare’s term for an NFT) as “similar to owning a piece of physical art.”<sup>180</sup>

Sites use terms such as “represent” to describe the relationship between the NFT and the digital art underlying the token.<sup>181</sup> Some say that the token represents title to the underlying work. For example, under the KnownOrigin Terms of Service, users can create “limited-edition digital items” that include original artwork.<sup>182</sup> The terms define the creative work as “Content” and the linked NFT as the “Token.”<sup>183</sup> The terms say that the Token represents the title of “that item,” although it is not clear what the item is.<sup>184</sup> Other sites focus on provenance, stating that the NFT provides a chain of ownership to the underlying artwork.<sup>185</sup> SuperRare’s terms say that NFTs “are forever tracked and stored on the Ethereum blockchain, providing the Collector of a SuperRare Item with a permanent record of authenticity and ownership.”<sup>186</sup> Mintable says that its token can be used for “[e]stablishing ownership” of external items.<sup>187</sup>

In contrast to these promises, none of the terms of service that were reviewed directly provide any link between ownership of a token and rights in the underlying creative work. In fact, they all deny that the owner of an NFT has any rights in the underlying asset. The SuperRare Terms of Service contain a simple statement of the relationship between ownership of a token and rights in the underlying work, stating that a buyer obtains ownership of “a cryptographic token representing the artist’s creative Work as a piece of property, but” obtains no ownership of the “creative Work itself.”<sup>188</sup>

The Foundation Terms of Service are typical in their statement of property rights. The rights granted to the Creator (the person creating the NFT) are not surprising in that the Terms of Service acknowledge that

179. *Terms of Service*, KNOWNORIGIN, *supra* note 167, § 8.

180. *Terms of Service*, SUPERRARE, *supra* note 170.

181. *See, e.g., Terms of Service*, FOUNDATION, *supra* note 167, § 1 (promoting Foundation as “a platform for Users, including artists (‘Creators’) and collectors (‘Collectors’), to sell, purchase, list for auction, make offers on, and bid on (each a ‘Transaction’) Digital Artwork,” meaning “non-fungible Ethereum-based token[s] that use[] smart contracts on the Ethereum blockchain”); *Rarible Terms and Conditions*, RARIBLE § 1.1(a) (Oct. 10, 2020), <https://static.rarible.com/terms.pdf> [<https://perma.cc/YB7Q-CUDW>] (explaining that “NFTs are intended to be ‘non-fungible’ tokens representing a unique Collectible”).

182. KNOWNORIGIN, *supra* note 167, § 6.

183. *Id.*

184. *Id.*

185. *See* Finzer, *supra* note 37.

186. SUPERRARE, *supra* note 170 (defining and explaining the importance of “SuperRare Items”).

187. Zach of Mintable.app, *supra* note 37.

188. SUPERRARE, *supra* note 170.

the creator retains all copyright in the tokenized artwork.<sup>189</sup> The buyer of the NFT who becomes its new holder appears to receive no rights at all in the artwork under the Foundation Terms of Service. The only right granted to the NFT holder is the right to display the artwork.<sup>190</sup> As would be the case if the NFT holder had bought a physical painting instead of an NFT representing a painting, the terms provide that the NFT owner has no copyright or other intellectual property rights in the artwork.<sup>191</sup> Beyond that, the Foundation Terms of Service sets forth the NFT owner's property rights in a confusing manner. First, at the time of the study, the terms conflated the underlying artwork and the NFT by defining the entire package as the "Digital Artwork."<sup>192</sup> Later, the document states that Collectors receive a "cryptographic token representing the Creator's Digital Artwork as a piece of property, but do[] not own the Digital Artwork itself."<sup>193</sup> In the next paragraph, the terms give the collector "a limited, worldwide, non-assignable and non-transferable . . . [,] non-sublicensable, royalty-free license to display the Digital Artwork *legally owned* and properly obtained by the Collector."<sup>194</sup> Collectors have the right to sell their Digital Artwork, but they may not make commercial use of it.<sup>195</sup> The terms continue by imposing a number of restrictions on the use of the Digital Artwork, prohibiting the use of the artwork in advertising, movies and video games and prohibiting any attempt to tokenize the same digital artwork.<sup>196</sup>

As is the case with all other NFTs (and all physical art), owning an NFT grants no intellectual property rights in the underlying creative work under the KnownOrigin Terms of Service.<sup>197</sup> The terms clearly give the buyer of the Token ownership of the Token but give all property rights in the Content (defined to include "original visual artwork, animations, audio and photographs") to the creator.<sup>198</sup> In its "Intellectual Property" section, the KnownOrigin Terms elaborate on this point, stating that a buyer of a Token gets title to that Token, that the buyer has the right to display the Token and resell it to another person, that the buyer cannot prevent the creator from using the Content for future commercial work, and that the buyer cannot use the Content for commercial purposes.<sup>199</sup> It

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189. FOUNDATION, *supra* note 167, § 4(a).

190. *Id.*

191. *Id.* § 4(c).

192. *Id.*

193. *Id.*

194. *Id.* (emphasis added).

195. *Id.*

196. *Id.*

197. KNOWNORIGIN, *supra* note 167, § 8.

198. *See id.* § 6 ("[T]he Content which forms part of the Token is owned solely by the Artist.").

199. *Id.* § 10.

appears that there is a mistake in that section: the right to display the Token should go without saying because the buyer owns the Token, but what does it mean to *display a token*? Surely the drafter meant to grant the buyer of the Token the right to display the *Content*.

Property rights under the MakersPlace Terms of Service are also confusing and are not always divided among the possible users of MakersPlace. For example, the “Ownership” paragraph of the MakersPlace Terms of Service begins with this:

Unless otherwise indicated in writing by us, content and other materials contained therein, including . . . all designs, text, graphics, pictures, information, data, software, sound files, other files and the selection and arrangement thereof (collectively, “Content”), the Site, and any Crypto Assets are the proprietary property of MakersPlace or our affiliates, licensors or users, as applicable.<sup>200</sup>

Several property concepts in the MakersPlace Terms of Service are clear. One is that MakersPlace claims no property rights in any user’s Crypto Assets.<sup>201</sup> Another is that buyers of Crypto Assets do not obtain any copyright in the Crypto Asset and are prohibited from using it for any commercial purpose.<sup>202</sup>

Mintable allows users to create NFTs using the Ethereum blockchain and engage in sales of those NFTs.<sup>203</sup> The terms define the NFTs as “User Content.”<sup>204</sup> The Mintable Terms of Use do not say much about property rights other than that a user of the site retains all ownership rights in her User Content, acknowledging rights in the token but not in the underlying asset.<sup>205</sup> One of the more perplexing property rights statements in the Mintable Terms of Use requires an owner of User Content to grant to each user of the site a “worldwide, non-exclusive, royalty-free license to access [the] User Content” through Mintable and grant each user the right to “use, reproduce, distribute, prepare derivative works of, display and perform” such User Content.<sup>206</sup>

Like the other sites, Rarible also allows users to create and trade in NFTs. Rarible’s goal is to become a fully decentralized autonomous organization, and to do so it distributes native tokens called RARI to

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200. *Terms of Service*, MAKERSPLACE ¶ 4 (May 12, 2022), <https://makersplace.com/terms/> [<https://perma.cc/ME52-MMQX>].

201. *Id.*

202. *Id.* ¶ 5. d.

203. MINTABLE, *supra* note 176, at 1.

204. *Id.* at 2.

205. *See id.* at 3.

206. *Id.* at 2.



active users.<sup>207</sup> Rarible’s Terms and Conditions thus cover both the creation and the trade of NFTs and the distribution of RARI tokens.<sup>208</sup> Rarible has the most confusing description of the rights conferred by the NFT of any of the terms we reviewed. Rarible’s terms define “Collectible” as the “association on Ethereum of an NFT with a Uniform Resource Identifier (‘URI’) identifying an appropriately configured JSON file” and then explains the standards that an appropriately configured file must satisfy.<sup>209</sup> The terms then define “Collectible ID” as the JSON file.<sup>210</sup> A Collectible ID describes the Collectible, including the URI identifying the image file and any other metadata associated with the Collectible.<sup>211</sup>

Although the NFT description in the Rarible Terms and Conditions is confusing to the average person, the description of the relationship between ownership of the NFT and ownership of the underlying art or other item is not. Absent an agreement between the creator of a Collectible and the purchaser of the Collectible, the purchaser obtains no license to, ownership of, or any right or entitlement to the Collectible Metadata or intellectual property associated with the Collectible. The only ownership rights granted to the buyer are ownership rights to the NFT.<sup>212</sup>

As is the case under all of the other terms of service, SuperRare’s terms recognize that the NFT owner does not have any intellectual property rights in the underlying Artwork.<sup>213</sup> A Collector may display the Artwork but may not use it for any commercial purpose.<sup>214</sup>

The fact that none of the terms of service grant intellectual property rights in the underlying asset to the holder of the NFT is neither novel nor surprising. As explained in Section III.B. below, a purchaser of a tangible artwork receives no intellectual property rights in that work. That person’s ownership rights in the creative work are protected by chattel property law. If the great innovation of NFTs is that they somehow clarify rights in underlying intangible assets, the terms of service illustrate that this innovative goal has not been achieved. It is noteworthy, however, that despite the statements made to the general public about the connection between NFTs and underlying assets, the various terms of service either say nothing on the matter, directly disclaim any such

207. *FAQs*, RARIBLE, <https://www.notion.so/rarible-com-FAQ-a47b276aa1994f7c8e3bc96d700717c5> [<https://perma.cc/E8JC-B8P3>].

208. RARIBLE, *supra* note 181, § 1.1(a).

209. *Id.* § 1.1(b)(i).

210. *Id.*

211. *Id.* § 1.1(b)(i)–(ii).

212. *Id.* § 1.1(b)(iii).

213. SUPERRARE, *supra* note 170 (defining “Ownership of a SuperRare Item”).

214. *Id.* (explaining that “Collectors May Display the Artwork,” but “Collectors Shall Not Make Commercial Use of Artwork”).

connection, or at least confuse the reader as to whether a connection exists.

c. Tokenized Virtual Land: Does the Fancy New Bottle Add Anything to This Old Wine?

The last Terms of Service that were reviewed are from a different kind of site, SuperWorld. In SuperWorld, the NFTs are not attached to art created by outside artists; rather, they are attached to virtual land in the SuperWorld metaverse, which maps to the Earth so that participants can “buy” places that exist in the real world, such as the Eiffel Tower.<sup>215</sup> Participants in the metaverse are able to search for, share, and create persistent augmented reality content to place on their purchased properties.<sup>216</sup> Virtual real estate is not a new concept; the virtual world Second Life, which continues today, pioneered the idea in 2003.<sup>217</sup>

The authors of this Article looked for differences between virtual land enhanced by NFTs and Second Life’s “first generation” virtual land by comparing the terms of use for Second Life and for SuperWorld, and found few practical differences.

SuperWorld uses smart contracts on the Ethereum blockchain to develop its real estate tokens in its metaverse. The Terms of Use allow users to buy and sell the real estate tokens.<sup>218</sup> The tokens give their owner no rights, license or otherwise, in the “SuperWorld materials,” which include the copyrights in the art and drawings underlying the real estate token. Oddly, or perhaps tellingly, the Terms of Service put quotation marks around the word “purchase” when stating that the purchase of tokens conveys no rights in the underlying art.<sup>219</sup> Although the SuperWorld website promotes the opportunity to monetize metaverse property,<sup>220</sup> the Terms of Service prohibit token owners from commercializing the SuperWorld materials without prior written consent from SuperWorld.<sup>221</sup>

SuperWorld acknowledges that its virtual real estate, represented by tokens, is not permanent. It reserves the right to terminate access to its metaverse if the user breaches the Terms of Service or engages in

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215. *A Virtual Real Estate Market in the Metaverse*, SUPERWORLD, <https://www.superworldapp.com/virtual-real-estate> [<https://perma.cc/9HDJ-QFTM>].

216. SUPERWORLD, [www.superworldapp.com](http://www.superworldapp.com) [<https://perma.cc/4K8E-VEUL>].

217. See Chris Stokel-Walker, *Second Life’s Strange Second Life*, VERGE (Sept. 24, 2013, 12:09 PM), <https://www.theverge.com/2013/9/24/4698382/second-lifes-strange-second-life> [<https://perma.cc/A64V-6SRE>] (explaining the first ten years of Second Life).

218. *Terms of Service*, SUPERWORLD ¶ 1, <https://www.superworldapp.com/legal/terms-of-use/> [<https://perma.cc/79ZK-MA45>].

219. *Id.* ¶ 4(a).

220. SUPERWORLD, *supra* note 215.

221. SUPERWORLD, *supra* note 218, ¶ 4(a).

fraudulent, abusive, or illegal activity.<sup>222</sup> The terms also recognize that users may lose interest in the SuperWorld metaverse, thus diminishing the value of the SuperWorld Real Estate tokens.<sup>223</sup>

As noted above, Second Life has been offering its users the opportunity to purchase virtual land for almost 20 years. Linden Labs is the operator of Second Life; under its Terms and Conditions the user's right to Second Life Virtual Land is explicitly a license.<sup>224</sup> Although the rights are described as license rights, Linden Labs gives the person acquiring Second Life Virtual Land some of the same rights commonly associated with ownership. For example, the Virtual Land is transferable, and the licensee of the Virtual Land has the rights to both invite other users to access the land and exclude other users from access.<sup>225</sup> The Terms and Conditions thus explicitly make the Virtual Land rivalrous. Like SuperWorld, Linden Labs acknowledges that its "land" is not permanent, reserving the right to eliminate it at any time without any recourse on the part of the licensee.<sup>226</sup>

## II. NFTS AND TOKENIZATION'S MISMATCH

Each of the tokenization examples described in Part I arose from a commercial need. And this Article acknowledges that the use of the internet in commercial transactions has created a need for digital uniqueness because copyright-protected works can be copied perfectly online.<sup>227</sup> Although digital uniqueness is a noble goal, this Part will show that NFTs, at least as currently structured, do not provide that uniqueness for the underlying asset. The key to a true token is that the transfer system for the token provides a method of transferring the intangible rights embodied in the token.<sup>228</sup> This Part also explains that current law does not give NFTs *tethering* effects—specifically, that the current system of property and commercial law does not provide the legal tethering of the NFT to another asset. Of course, just because current law does not provide tethering effects does not mean that it could not. Indeed, as noted in Part I, all of the current forms of legal tokens essentially stem from commercial practices that the law eventually recognized. For example, the trading of paper notes as a substitute for currency was a commercial activity that worked in practice among merchants, and so was eventually

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222. *Id.* ¶ 5.

223. *Id.* ¶ 8.

224. *Second Life Terms and Conditions*, SECOND LIFE § 3.4, <https://secondlife.com/app/tos/tos.php> [<https://perma.cc/TC39-LAC3>].

225. *Id.*

226. *Id.*

227. *See* Fairfield, *supra* note 40, at 13–14.

228. *See* Rogers, *supra* note 44, at 200 (explaining that the method of transferring negotiable instruments would be of no interest if all that was being transferred was a piece of paper).

given legal effect by the courts.<sup>229</sup> But as currently constituted in the marketplace, the theoretical justifications for doing the same with NFTs are dim. Specifically, this Part concludes its critique by putting NFTs within the lens of property theory literature, showing the theoretical weaknesses of giving NFTs tethering qualities.<sup>230</sup>

### A. *NFTs are Not Tethering*

First, NFTs do not actually embody property rights in a reference asset. As this Article notes, promoters of these tokens say that they can be used to establish “an immutable record of ownership” and will allow for the purchase of fractional rights in an underlying asset.<sup>231</sup> In other words, ownership of the token conveys ownership of something else. But NFTs, as currently constituted, do no such thing. They are not *tethering*—they do not embody property rights in a reference thing.

This can be compared to the many kinds of legal tokens discussed in Part I which actually do serve a tethering function.<sup>232</sup> The deed actually has a legal connection to the land it describes.<sup>233</sup> It is the vehicle through which property rights in the land (the underlying/reference asset) can be conveyed.<sup>234</sup> And, when proper notice is given of such a conveyance, the deed actually creates superior property rights relative to certain other classes of persons claiming rights in the same land.<sup>235</sup> Negotiable instruments have a similar tethering function.<sup>236</sup> The party that enjoys the status of holder of the instrument (which includes having possession of it), acquires a particular set of rights in the underlying debt—specifically, the ability to enforce it against the debtor under the instrument and to avoid most defenses that the debtor can raise.<sup>237</sup>

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229. See Frederick K. Beutel, *The Development of Negotiable Instruments in Early English Law*, 51 HARV. L. REV. 813, 813 (1938) (stating that the law of negotiable instruments, now codified, is “merely declaratory of the common law which was worked out carefully case by case in the king’s courts in England practically with no outside aid or substantial legislative enactment”).

230. We note that several academics and industry experts assert that they are currently working on developing technologies that would improve upon the current mechanics of NFT operation. See, e.g., Diana Stern et al., *NFT Legal and Licensing Integration*, MIT COMPUTATIONAL L. REP. (July 30, 2021), <https://law.mit.edu/pub/ideaflow6/release/5?readingCollection=0cc42822> [<https://perma.cc/X4TA-P5MS>] (describing an approach aimed at integrating legal and technical licensing terms for intellectual property into an NFT’s metadata). The analysis in this Article, however, focuses on extant NFT systems, on the theory that any future technology that would address these critiques is too speculative at present.

231. Laurent et al., *supra* note 13, at 63; Burne, *supra* note 12.

232. See *supra* Part I.

233. See *supra* Section I.A.3.

234. See *supra* Section I.A.3.

235. See *supra* Section I.A.3.

236. See *supra* Section I.A.1.

237. See *supra* Section I.A.1.

But in the case of NFTs, there is no tethering. Creating an NFT of another thing—whether tangible or intangible—creates no legal link as is created with the examples in Part I. Going back to the digital image of an oil painting described in Section I.B, the creation of the NFT and its purchase by a third person, without more, conveys no actual rights in the digital painting.<sup>238</sup> Recall that Mintable purports that individuals can use the service to establish “ownership of an item external to the token” and to link “the token owner to a . . . photo, video or other web-based asset.”<sup>239</sup> Other platforms make similar promises.<sup>240</sup> At the same time, Mintable’s terms of service variously confuse the concept of the token and the concept of the underlying asset—making them seem as though they are one and the same. In one place, the terms state that Mintable allows one to both “create non-fungible tokens” and also to “upload user created content to [its] servers.”<sup>241</sup> Later, however, the terms reference the content as actually being the non-fungible token.<sup>242</sup> Other platform terms of service, such as those of Foundation, likewise conflate the token with the underlying thing.<sup>243</sup> Additionally, although the user “retain[s] all ownership rights in [the] User Content” the act of uploading the content to the Mintable site automatically grants to Mintable “a worldwide, non-exclusive, royalty free, transferable license” that allows the company “to use, reproduce, distribute, prepare derivative works of, display, and perform that Content in connection with the provision of the Service.”<sup>244</sup>

The terms of service themselves hardly make clear what the company otherwise promises the users is occurring. If it is true that the token establishes ownership of an external asset, then one can only reach this conclusion through a very creative reading of the contract text. Moreover—unlike the examples of tokenization in Part I—there is no actual, current law that would give an NFT such a tethering effect. In all of the examples of legal tokenization, there was an underlying law. With negotiable instruments, it is Article 3 of the UCC.<sup>245</sup> With securities, it is state corporate law and Article 8 of the UCC.<sup>246</sup> With deeds and bailments, it is the common law of property and subsequently specialized state statutes.<sup>247</sup> The tethering that occurs under bills of lading is also due

238. See *supra* Section I.B.1.

239. See *supra* note 157 and accompanying discussion.

240. See *supra* Section I.B.2.b; see, e.g., *Terms of Service*, KNOWNORIGIN, *supra* note 167, § 8; SUPERREARE, *supra* note 164 (defining “Ownership of a SuperRare Item”); FOUNDATION, *supra* note 167, § 4(c); RARIBLE, *supra* note 181, § 1.1(b)(ii).

241. MINTABLE, *supra* note 176, at 1.

242. *Id.* at 2.

243. See FOUNDATION, *supra* note 167.

244. MINTABLE, *supra* note 176, at 2.

245. See *supra* Section I.A.1.

246. See *supra* Section I.A.2.

247. See *supra* Section I.A.3.

to state and federal law.<sup>248</sup> A thing cannot be tethered merely because a contract says so—although it is again noted that while many of these platform websites say tethering occurs, the terms of service conflict or confuse the issue entirely.<sup>249</sup> In any event, legal recognition is needed and there is none when it comes to NFTs.

To that point, there is reason to be skeptical that legal recognition is forthcoming. Throughout history, legal rules developed when markets matured. New technologies give rise to individualism. The development of cyberspace in the late twentieth century is a memorable example of this; internet entrepreneurs often claimed that cyberspace meant the end of rules by national governments.<sup>250</sup> The same sentiment permeates the words of those who promote cryptocurrencies<sup>251</sup> and NFTs.<sup>252</sup> These entrepreneurs come back to governments for rules because governments can protect their property rights and “keep the pirates at bay.”<sup>253</sup> The problem with NFTs, however, is that the only property right to protect is in the token itself, not the underlying asset.<sup>254</sup> As explained below, there is no reason to give NFTs, at least as they are currently constituted, the legal status of a token.

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248. See *supra* Section I.A.4.

249. See Carol M. Rose, *What Government Can Do for Property (and Vice Versa)*, in 4 *THE FUNDAMENTAL INTERRELATIONSHIPS BETWEEN GOVERNMENT AND PROPERTY* 209, 213–15 (Nicholas Mercuro & Warren J. Samuels eds., 1999).

250. See, e.g., John Perry Barlow, *A Declaration of the Independence of Cyberspace* (Feb. 8, 1996), <https://www.eff.org/cyberspace-independence> [<https://perma.cc/4S4U-EKUQ>] (addressing his comments to “Governments of the Industrial World,” he declared that “[y]ou have no moral right to rule us nor do you possess any methods of enforcement we have true reason to fear”); DEBORAH L. SPAR, *RULING THE WAVES: CYCLES OF DISCOVERY, CHAOS, AND WEALTH FROM THE COMPASS TO THE INTERNET* 22 (2001) (describing a 1997 Harvard conference at which an internet entrepreneur pronounced that the growth of the internet would lead to the end of governments, which would no longer have any way to do things like track illegal activity and collect taxes).

251. Sydney Maki & Vildana Hajric, *Wall Street Asks if Bitcoin Can Even Replace Fiat Currencies*, BLOOMBERG (June 13, 2021, 9:00 AM), <https://www.bloomberg.com/news/articles/2021-06-13/wall-street-asks-if-bitcoin-can-ever-replace-fiat-currencies> [<https://perma.cc/9CVD-MEWA>] (“There’s been a lot of people who have sat in the crypto world who’ve said, ‘Oh, crypto is going to take over the world and traditional banks and central banks will go away . . . .’” (quoting Julian Sawyer, CEO of Bitstamp)).

252. Thompson, *supra* note 7 (explaining why “crypto natives” believe that NFTs illustrate a future of digital property, “when government will lose its unique power to mint currency and protect property”).

253. SPAR, *supra* note 250, at 20–21.

254. Note that it is not entirely clear whether one actually owns an NFT. This is particularly true since the various terms of service describe the user as receiving a highly transient license right. SECOND LIFE, *supra* note 224. Nevertheless, this Article does not opine on the property nature of the NFT itself.

B. *The Problem: Non-Rivalrousness. The Solution: Not an NFT*

Non-rivalrousness poses challenges to creators of artistic works. Unlike a tangible asset, such as a chair, and some intangible assets, such as internet domain names, creative works such as music can be enjoyed by many people at once. If one person listens to a song, another person can listen to it at the same time without diminishing the quality of the song.<sup>255</sup> If one person views digital art on their computer, another person can view the same piece on their computer. Because many people can enjoy and copy creative works, creators can be hindered from earning money from their work.<sup>256</sup> The non-rivalrousness of creative works is one justification for copyright protection, which gives creators control over the use of their creations.<sup>257</sup>

Pre-internet, a copy of a work was likely an imperfect copy. The internet exacerbated the need to protect copyrighted musical recordings. This presented great problems in the music community, which was faced with the reality of perfect copies being distributed without authorization from the copyright holder.<sup>258</sup>

Creators of visual works, however, never relied much on copyright to protect the value of their works. Broadly speaking, a painting is comprised of two sets of property elements: the *intellectual property rights* embodied in the work, which are protected by copyright, and *traditional property rights* represented by the physical manifestation of the piece. A purchaser of a painting obtains the latter rights, while the creator retains the former.<sup>259</sup> And indeed, some maintain that visual artists do not even need copyright to protect their works because the value in tangible visual art rests in their uniqueness or in limited editions.<sup>260</sup>

Enter the internet. As is the case with music, it is possible to make a perfect copy of a digital work of art. More importantly, there is no such thing as a unique copy of a digital file. Thus, because the visual art market thrives on scarcity, and there is no scarcity when the art is digital, there

255. See Brett M. Frischmann, *An Economic Theory of Infrastructure and Commons Management*, 89 MINN. L. REV. 917, 945–46 (2005) (explaining the difference between rivalrous and non-rivalrous assets).

256. See Christopher S. Yoo, *Copyright and Product Differentiation*, 79 N.Y.U. L. REV. 212, 214–15 (2004) (explaining the economic costs of producing non-rivalrous works).

257. *Id.* at 215.

258. See Harold R. Weinberg, *Introduction: From Sheet Music to MP3 Files—A Brief Perspective on Napster*, 89 KY. L.J. 781, 789 (2001) (explaining that “background noise is virtually eliminated from digitally-recorded music, which also has greater fidelity to the recorded performance”).

259. See Guy A. Rub, *Owning Nothingness: Between the Legal and the Social Norms of the Art World*, 2019 B.Y.U. L. REV. 1147, 1164–65 (explaining the different types of property rights embodied in tangible visual artworks).

260. See Amy Adler, *Why Art Does Not Need Copyright*, 86 GEO. WASH. L. REV. 313, 330 (2018).

is a concern that visual artists who work only in a digital format will have difficulty monetizing their works.<sup>261</sup> This concern presents the problem that NFTs purportedly solve, raising the question of whether they in fact solve the problem.

Digital visual art lacks rivalrousness, as it can be viewed on many computers at once. One way that digital artists can monetize their work is by presenting the work in a way that ensures rivalrousness. One such method is by embedding that work in a unique physical manifestation. The hip-hop group Wu-Tang Clan did exactly that in 2015, producing one copy of its album “Once Upon a Time in Shaolin,” which was sold in an ornate hand-carved box which contained the album and a leather-bound book of the lyrics and history of each of the album’s 31 songs.<sup>262</sup>

The art world has solved rivalrousness problems before without resorting to new technologies. Conceptual art is an art form that consists of the creator’s idea combined with instructions about how to present the work.<sup>263</sup> Museums and collectors have bought conceptual art for millions of dollars.<sup>264</sup> The fact that anyone would pay that much for an idea that can be executed by almost anyone seems absurd, but the art market has found a way to make such works of art effectively rivalrous. Participants in the art market do so by agreements under which only one person or entity can display the work at a time.<sup>265</sup> Because everyone in the art market respects these agreements, the presentation of a conceptual artwork is rivalrous, and collectors will pay large amounts of money to have the right to present.<sup>266</sup>

If the scarcity provided by rivalrousness is the goal, NFTs do not achieve it. Here, it is useful to talk about protecting the rights of both the creator of the digital artwork and the purchaser of the artwork. The former’s rights are intellectual property rights including the right to control reproduction of the work and its distribution. The latter’s rights are economic and are traditionally tied to the ability to claim ownership of a unique work.

NFTs do nothing to address the artist’s intellectual property rights. As discussed earlier in this Article, most contracts governing NFTs leave the creator’s intellectual property rights intact. The creator retains the right

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261. See Brian L. Frye, *NFTs & the Death of Art 4* (Apr. 19, 2021) (unpublished manuscript), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3829399](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3829399) [<https://perma.cc/S5FW-TH95>].

262. See Devin Leonard & Annmarie Hordern, *Who Bought the Most Expensive Album Ever Made?*, BLOOMBERG BUSINESSWEEK (Dec. 9, 2015), <https://www.bloomberg.com/features/2015-martin-shkreli-wu-tang-clan-album/> [<https://perma.cc/9CRJ-FYU2>] (explaining the development and auction of the album).

263. Rub, *supra* note 259, at 1161.

264. *Id.* at 1162 (discussing the market for the works of conceptual artist Felix Gonzales-Torres).

265. *Id.* at 1182.

266. *Id.* at 1162.



to control copying and distribution of the creative work, just as the creator could before minting the NFT. Blockchain may have a role in protecting creators' intellectual property rights, and some commentators posit that a blockchain-based copyright registry would more reliably provide information about the ownership of copyrights than the existing system maintained by the United States Copyright Office.<sup>267</sup>

An owner's rights in a physical artwork are protected by ordinary property concepts. Scarcity gives value. But NFTs do not mimic these property concepts and, as a result, do not provide the real or artificial scarcity on which the art market thrives. The contracts to which NFT creators and buyers agree do not give the holder of the NFT any right to control the underlying asset.<sup>268</sup> At best, and only when digital assets are endogenous to the NFT, the use of computer code can show some degree of provenance.<sup>269</sup> "Endogenous to the NFT" means, in this case, those instances (such as with our digital painting) where the underlying digital asset and the NFT are integrated on the ledger such that the association between a given person (through their cryptographic key) and the digital asset is embedded in the metadata. Therefore, even if someone else made a perfect digital replica of the painting, the code of that image file would not have the chain of title imprint embedded within.<sup>270</sup>

But, more broadly, many of the works that have been transformed into NFTs are freely available for download by anyone with a computer—including the authors' own digital image of the bovine oil painting referenced above. For example, a *New York Times* technology columnist turned a column about creating an NFT into an NFT.<sup>271</sup> NFTs created a

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267. See Sebastian Pech, *Copyright Unchained: How Blockchain Technology Can Change the Administration and Distribution of Copyright Protected Works*, 14 NW. J. TECH. & INTELL. PROP. 1, 11–12 (2020) (describing the attributes of a blockchain-based copyright registry).

268. See *supra* Section I.B.2.a.

269. The definition of "provenance" is "the history of ownership of a valued object or work of art or literature." *Provenance*, MERRIAM-WEBSTER'S DICTIONARY, <https://www.merriam-webster.com/dictionary/provenance> [<https://perma.cc/WT5E-F78G>].

270. For another potential use of NFTs to show a record of title, but for external items, see Matthew Beedham, *Nike Now Holds Patent for Blockchain-Based Sneakers Called 'CryptoKicks'*, TNW NEWS (Nov. 10, 2019), <https://thenextweb.com/news/nike-blockchain-sneakers-cryptokick-patent> [<https://perma.cc/X8WB-JF35>]. Yet, here again, this would be entirely enforced by the market, not by law, since the market would have to ascribe to the notion that there is inherent value in owning not only the physical Nike shoe but also the NFT that is associated with that shoe. See Tim Fries, *CryptoKicks: Nike to Tokenize Shoe Ownership on Ethereum*, TOKENIST (May 25, 2021), <https://tokenist.com/cryptokicks-nike-to-tokenize-shoe-ownership-on-ethereum/> [<https://perma.cc/9568-JXGM>].

271. Roose, *supra* note 7. A buyer bought the column NFT at auction for \$560,000 in ether, which the author donated to charity. Kevin Roose, *Why Did Someone Pay \$560,000 for a Picture of My Words?*, N.Y. TIMES (Aug. 12, 2021), <https://www.nytimes.com/2021/03/26/technology/nft-sale.html> [<https://perma.cc/Y5YB-3DXL>].

market for internet memes, items which are, by definition, spread widely online.<sup>272</sup>

Tokens evolved to solve practical problems related to the transfer and ownership of assets. Although NFTs emerged in the digital art world, they do not solve any of the most decried problems related to digital art. If the problem for digital artists is an inability to profit from their works because of a lack of scarcity, tokenization is not the answer. The NFT craze has enabled artists to profit from their works, but there is reason to be skeptical that this will last when participants in the NFT market realize that their NFTs give them no rights in the underlying creative works.

### C. NFTs and Property Theory Weaknesses

This Section concludes its critique of the NFT phenomenon by putting these transactions in the context of the property theory literature. It is likely that courts will be faced with legal disputes involving NFTs. Indeed, lawyers at the vanguard of these transactions and the platform companies that facilitate them admit as much.<sup>273</sup> In fact, as of this writing, issues related to property rights and intellectual property rights in NFTs have already arisen in a context to suggest that litigation was imminent. In the spring of 2021, the company Daystrom listed an NFT of a physical drawing by the now-deceased artist Jean-Michel Basquiat through the OpenSea platform.<sup>274</sup> Daystrom said that it represented the legal owner of the physical drawing, and, when questioned, asserted that “[t]here is absolutely zero doubt about authenticity and ownership of the work.”<sup>275</sup> The NFT’s auction page stated that purchase of the token would “memorialise ownership” and convey “reproduction and IP rights.”<sup>276</sup> And, perhaps surprisingly, the auction page also promised that the NFT purchaser would have the ability to destroy the actual physical work of art.<sup>277</sup> Shortly after the offering went public, the estate of the artist intervened and stated that no kind of copyright license or related rights in Basquiat’s drawing would be given to the buyer of the NFT, as such rights

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272. The definition of “meme” is “an amusing or interesting picture, video, etc., that is spread widely through the Internet.” *Meme*, MERRIAM-WEBSTER’S DICTIONARY, <https://www.merriam-webster.com/dictionary/meme> [<https://perma.cc/P5L9-RGVN>].

273. See *supra* note 38 and accompanying text.

274. Anny Shaw, *Basquiat NFT Withdrawn from Auction After Artist’s Estate Intervenes*, ART NEWSPAPER (Apr. 28, 2021), <https://www.theartnewspaper.com/2021/04/28/basquiat-nft-withdrawn-from-auction-after-artists-estate-intervenes> [<https://perma.cc/3QQG-4AVN>].

275. *Id.*

276. *Id.*

277. *Id.*

were currently held by the estate.<sup>278</sup> The NFT was then quickly removed from sale.<sup>279</sup>

Courts faced with novel questions of property rights often resort to interrogating property theory in order to arrive at a resolution.<sup>280</sup> For this reason, the following Section shows the theoretical weakness in according NFTs (as they are currently constituted) property law-related characteristics under the common law.

To be sure, there are several strands of property theory,<sup>281</sup> but here the focus is on the most prominent schools of thought in the modern literature—the progressive property theory and the exclusionary rights theory. As explained below, NFTs find little if any support under either theory. More explicitly: if a court were to consider whether the common law of property should give tethering effects to NFTs in their current mode, the theoretical justifications that underpin property broadly would counsel against such a move.

### 1. Under Exclusionary Rights Theory

The first school of thought is populated by the exclusionary rights or information cost theorists.<sup>282</sup> The core premise of this school of thought is that the right holder's ability to exclude others is the most important concept in property law.<sup>283</sup> To quote a modern leader of this movement, Professor Thomas Merrill, “the right to exclude others is more than just ‘one of the most essential’ constituents of property—it is the sine qua non.”<sup>284</sup> So their argument goes: without it, no regime of private property

278. *Id.*

279. *Id.* When questioned about the mishap, a Daystrom representative proclaimed that “the regulation and laws governing NFTs are rapidly evolving in terms of conveyance, secured interests, intellectual property and copyright” and that “[w]hile blockchain transactions are widely considered a trusted source of authentication and provenance,” the fact of the matter was that “best copyright practices have yet to evolve for the digital economy.” *Id.*

280. *See, e.g.,* *Kaiser Aetna v. United States*, 444 U.S. 164, 179 (1979); *see also* *State v. Shack*, 277 A.2d 369, 372 (N.J. 1971) (using property theory to determine whether an attorney who entered private property to aid migrant farmworkers was guilty of trespass).

281. For a discussion of the strands of property theory, see John A. Lovett, *Progressive Property in Action: The Land Reform (Scotland) Act 2003*, 89 NEB. L. REV. 739, 750–53 (2011); *see also* GREGORY S. ALEXANDER & EDUARDO M. PEÑALVER, AN INTRODUCTION TO PROPERTY THEORY 7 (2012) (introducing the “theories of property that have had the most influence on discussions of American property law”).

282. Lovett, *supra* note 281, at 750.

283. Thomas W. Merrill, *Property and the Right to Exclude*, 77 NEB. L. REV. 730, 730–31 (1998).

284. *Id.* at 730 (quoting *Kaiser Aetna*, 444 U.S. at 176); *see also* Henry E. Smith, *The Thing About Exclusion* 22 (Harv. Pub. L., Working Paper, No. 14-26, 2014), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2449321](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2449321) [<https://perma.cc/7CRE-ZDXL>] (agreeing with the centrality of exclusion but adding additional legal texturing).

rights can exist.<sup>285</sup>

The exclusionist rights group centers itself on a person's relationship to a thing.<sup>286</sup> Professor Merrill focuses on the role of exclusion in helping society identify when something is and is not property.<sup>287</sup> Without the right to exclude others, property would lack "institutional coherence and social value."<sup>288</sup> Layering onto Professor Merrill's work, Professor Henry E. Smith adds that exclusion performs an informational task.<sup>289</sup> Because property transactions are between relatively anonymous parties, the law has to make the transaction cost of property business low.<sup>290</sup> This means that property rights cannot be dense and complicated, or else economic activity would become more difficult and would, in the long run, decline.<sup>291</sup> Professors Smith and Merrill explain that the way this aim of simplicity is accomplished is through what is now widely known as the *numerus clausus* principle.<sup>292</sup> This stands for the notion that there is only a limited number of forms of property—in other words, there is a strictly limited set of property ownership modules and similarly limited number of ways to transact in property.<sup>293</sup> They explain that "property is required to come in standardized packages that the layperson can understand at low cost."<sup>294</sup> This very notion, in their telling, is "that [property rights come] in a fixed, mandatory menu of forms, in contrast to contracts that are far more customizable."<sup>295</sup> And, unsurprisingly, the right to exclude is at the heart of this essential property feature—with trespass and nuisance being particularly salient examples of how this right gets operationalized.<sup>296</sup> By making property forms limited—in other words, by limiting the number of property packages one can create and expect to

285. Merrill, *supra* note 283, at 731.

286. Thomas W. Merrill & Henry E. Smith, *The Morality of Property*, 48 WM. & MARY L. REV. 1849, 1850 (2007) ("[T]he differentiating feature of a system of property—the right of the owner to act as the exclusive gatekeeper of the owned thing—must be regarded as a moral right . . .").

287. Merrill, *supra* note 283, at 730.

288. Lovett, *supra* note 281, at 747.

289. Thomas W. Merrill & Henry E. Smith, Essay, *What Happened to Property in Law and Economics?*, 111 YALE L.J. 357, 359 (2001).

290. Merrill & Smith, *supra* note 286, at 1852–53; Henry E. Smith, Response, *Mind the Gap: The Indirect Relation Between Ends and Means in American Property Law*, 94 CORNELL L. REV. 959, 971 (2009) ("[P]roperty requires coordination between large numbers of anonymous and far-flung people . . .").

291. See Smith, *supra* note 290, at 971.

292. Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The Numerus Clausus Principle*, 110 YALE L.J. 1, 9 (2000).

293. *Id.*

294. Merrill & Smith, *supra* note 289, at 359.

295. *Id.*

296. Thomas Merrill, *Trespass, Nuisance, and the Costs of Determining Property Rights*, 14 J. LEGAL STUD. 13, 16–19 (1985).

transact in—property as a thing becomes easier to transfer, encumber, and otherwise deal with in a world where parties generally know little about one another.<sup>297</sup> As such, parties are not free to create new forms of property—this is the *numerus clausus* principle at work—because doing so creates complexity and confusion, which in turn undermines economic activity and societal growth.<sup>298</sup> Property rights are of a closed set.

The current NFT transaction is in clear tension with the concepts advanced by the exclusionary rights theorists. Rather than making transactions more efficient, they actually introduce a tremendous amount of complexity. First, as noted above in the discussion of Mintable and the NFT exercise, it is not even clear if the agreement envisions the content (the “uploaded user created content”) as being distinct from the NFT, or if the content and the NFT are one and the same—a confusion found in other terms of service as well.<sup>299</sup> At the most basic level of simplicity, one should at least be clear about what is being sold.

Second, the terms of service states that the user retains “ownership rights in [the] User Content” (which, again, may mean either the underlying asset or the NFT and underlying asset bundled together), but also that Mintable “reserves the right to remove any User Content from the Service at its sole discretion.”<sup>300</sup> Moreover, the company retains the right to terminate the user’s account, which would cut the individual off from being able to access or otherwise deal with the NFT. Not only does the user lack any kind of meaningful right to exclude others, but, in fact, it is Mintable that appears to have the right to exclude. This makes the promise of the user’s retention of ownership rights rather hollow in the eyes of the exclusionary right theorists. Exclusion is only illusory here.

And lastly, in the face of these contradictory terms, NFTs do not serve Professor Smith’s information cost purpose for property rules. The complexity of NFT transactions, as evidenced by the terms of service,<sup>301</sup> makes the ability of strangers to actually understand what they’re getting in an NFT purchase nearly impossible. And lest one think that not all NFT transactions suffer from the defects identified herein, the Mintable terms of service are hardly unique. As discussed in Section I.B.2, all of the terms of service in the dataset exhibit equally contradictory promises as to the nature of the rights in the NFT, the nature of the rights in the underlying thing, and the role played by the minting platform itself. Is the

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297. Merrill & Smith, *supra* note 292, at 9; Merrill & Smith, *supra* note 289, at 359; Merrill & Smith, *supra* note 286, at 1850.

298. Merrill & Smith, *supra* note 289, at 359.

299. *Terms of Service*, MINTABLE, *supra* note 176; *see also* FOUNDATION, *supra* note 167, § 1(a) (providing that all Digital Artwork on Foundation is outside the control of any one party and is subject to many risks and uncertainties).

300. MINTABLE, *supra* note 176.

301. *See supra* Section I.B.2.

right conveyed a license? Is it a property right in a tethered thing? Is it merely a *sui generis* contract right for services between the user and the platform? Are there any limiting principals with respect to the authority held by the platform vis-à-vis the so-called owner of the NFT? What about contradictions between what the platform represents on one part of its website and what it represents in the terms of service? And what about conflicting terms of service between platforms? Since most NFTs are traded on the Ethereum blockchain (and comply with token standard ERC-721<sup>302</sup>), NFT holders can transact in the same token through different platforms. But this means that someone can buy an NFT on one platform that uses one set of terms of service and then sell it on a different platform that uses a different set of terms of service. What happens when those terms conflict?

The unanswered, perhaps unanswerable, nature of these numerous questions increases the transaction costs of doing business with NFTs. And since lowering transaction costs is at the heart of the exclusionary cost theory, the current NFT market fails quite significantly.

Tying all this together, an NFT transaction is simply a case of attempting to create novel and overly complex property rights by contract—and not even consistently. This is exactly what the *numerus clausus* principle is meant to prevent. Law often does give later legal effect to preceding commercial practices. But, guided by theory, courts have never given parties *carte blanche* to conjure property rights into being at will. And, to apply this concept here: parties are not free to say that something embodies rights in something else merely through the stroke of a pen. The law requires justification for such recognition. To proceed otherwise, as Professors Smith and Merrill would note, would cause too many variations, too much confusion—chaos and the breakdown of property markets. For all the reasons described in this Article, the prevailing NFT model fails to fulfill the property rights vision of the exclusionary theorists. This theory fails to provide support for NFTs as currently offered.

## 2. Under Progressive Property Theory

The progressive property theorists, subscribers of the other main modern school of thought, argue that property law embraces norms of social obligation and responsibility that are aimed at promoting human flourishing.<sup>303</sup> The crux of this argument, as articulated by the school's

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302. See generally @Minimalism, *ERC-721 Non-Fungible Token Standard*, ETHEREUM (Dec. 2, 2021), <https://ethereum.org/en/developers/docs/standards/tokens/erc-721/> [<https://perma.cc/5K8G-WUF2>] (explaining this particular NFT standard).

303. See Christopher K. Odinet, *Of Progressive Property and Public Debt*, 51 WAKE FOREST L. REV. 1101, 1148 (2016) (discussing the progressive property theory in constitutional law and

chief founders—Professors Gregory Alexander, Eric Freyfogle, Eduardo Peñalver, Jedediah Purdy, Joseph Singer, and Laura S. Underkuffler—is that property law rests on relationships, rather than on the connection between a person and a thing.<sup>304</sup> This includes those between neighbors, landlords and their tenants, private persons and public actors, future and present interest holders, and even those who own property and those who do not.<sup>305</sup> As Professor John Lovett has explained, these social obligation theorists center property law on the “human community.”<sup>306</sup> More concretely, the progressive property theory is about the balancing and recalibration of authority between the property concepts of autonomy and control and those of the “plural and incommensurable values”<sup>307</sup> of “human freedom”<sup>308</sup> and “a free and democratic society in which human beings are treated with equal dignity and respect.”<sup>309</sup>

The underpinnings of NFTs, set against this backdrop, are inconsistent with progressive property theory. The most prominent reason pertains to the mechanism by which NFTs are created and transacted—specifically, the blockchain. As noted in Section I.B, NFTs exist on decentralized ledgers.<sup>310</sup> Much like Bitcoin, individuals with high-powered computers voluntarily participate in the maintenance of the Ethereum blockchain

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bankruptcy). *See generally* Joseph William Singer, *Democratic Estates: Property Law in a Free and Democratic Society*, 94 CORNELL L. REV. 1009 (2009) (explaining that property is a social and political institution and not merely an individual entitlement); Eduardo M. Peñalver, *Land Virtues*, 94 CORNELL L. REV. 821 (2009) (providing that our moral institutions strongly affirm the notion that increasing aggregate wealth or welfare is a goal worth pursuing); Gregory S. Alexander, *The Social-Obligation Norm in American Property Law*, 94 CORNELL L. REV. 745 (2009) (arguing that the social-obligation norm in American property law is superior because it promotes human flourishing by enabling individuals to live lives worthy of human dignity); ERIC T. FREYFOGLE, ON PRIVATE PROPERTY: FINDING COMMON GROUND ON THE OWNERSHIP OF LAND (2007) (arguing that property is unique in that it is not an individual right—like the rights to free speech, religion, and trial by jury—but instead a tool that society uses to promote overall social good); Laura S. Underkuffler, *The Politics of Property and Need*, 20 CORNELL J.L. & PUB. POL’Y 363 (2010) (stating that the rights, privileges, and obligations of property ownership should be the same for all owners and all challengers, regardless of wealth, social status, political influence, or other factors); LAURA S. UNDERKUFFLER, THE IDEA OF PROPERTY: ITS MEANING AND POWER (2003) (explaining the operative conception of property, in which property represents individual interests, fluid in time, established and re-established as circumstances warrant).

304. Gregory S. Alexander et al., *A Statement of Progressive Property*, 94 CORNELL L. REV. 743, 743–44 (2009); *see also* Jedediah Purdy, *A Freedom-Promoting Approach to Property: A Renewed Tradition for New Debates*, 72 U. CHI. L. REV. 1237, 1243 (2005) (“Property rights thus deeply and necessarily structure interpersonal relations.”).

305. Alexander et al., *supra* note 304, at 743–44; Lovett, *supra* note 281, at 744.

306. Lovett, *supra* note 281, at 744.

307. Alexander et al., *supra* note 304, at 743.

308. Lovett, *supra* note 281, at 746 (first citing Jedediah Purdy, *People as Resources: Recruitment and Reciprocity in the Freedom-Promoting Approach to Property*, 56 DUKE L.J. 1047, 1110–14 (2007); and then citing Purdy, *supra* note 304, at 1242–44).

309. *Id.* (citing Singer, *supra* note 303).

310. *See supra* Section I.B.

ledger, which is a public, semi-anonymous record that maintains all transactions made through the Ethereum system.<sup>311</sup> This includes transactions involving NFTs that are minted through the Ethereum platform,<sup>312</sup> such as are the NFTs minted by Mintable.<sup>313</sup> In exchange for participating in (and thereby operating) the Ethereum blockchain, these supercomputer users have a chance to be compensated with ether (Ethereum's cryptocurrency).<sup>314</sup> But the problem here is the energy consumed by these high-powered computers in service of the Ethereum blockchain.<sup>315</sup> According to the Ethereum Energy Consumption Index, as of July 2021, "the entire Ethereum network consumes more electricity than a number of countries."<sup>316</sup> Although much less than Bitcoin's blockchain, a single Ethereum transaction still consumes roughly the same amount of electricity that an American household uses in a typical workweek.<sup>317</sup> In the span of a mere three days in January 2018, the average cost to complete an Ethereum blockchain transaction (to sell/transfer an NFT) increased by 187% as a result of increased traffic on the network.<sup>318</sup>

And herein lies the problem. To even have NFTs and a network within which transactions occur, one must expend tremendous amounts of energy—amounts that are, in the aggregate, harmful to the

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311. David Rodeck & Benjamin Curry, *What Is Ethereum and How Does It Work?*, FORBES (Mar. 26, 2021, 3:04 PM), <https://www.forbes.com/advisor/investing/what-is-ethereum-ether/> [<https://perma.cc/94ZL-2BXL>].

312. *Id.* ("The Ethereum network can also be used to store data and run decentralized applications.").

313. See *supra* Section I.B.1 and accompanying discussion.

314. Rodeck & Curry, *supra* note 311.

315. See generally Alex de Vries, *Bitcoin's Energy Consumption Is Underestimated: A Market Dynamics Approach*, 70 ENERGY RSCH. & SOC. SCI., Dec. 2020, at 1 (estimating the Bitcoin network's energy consumption by considering the dynamic market circumstances that affect the choices of those mining bitcoin); Alex de Vries et al., *The True Costs of Digital Currencies: Exploring Impact Beyond Energy Use*, 4 ONE EARTH 786 (2021) (discussing the environmental, social, and governance issues related to digital currencies); Alex de Vries, *Bitcoin Boom: What Rising Prices Mean for the Network's Energy Consumption*, 5 JOULE 509 (2021) (finding a direct relationship between the price of Bitcoin and the environmental impacts of Bitcoin mining).

316. See *Ethereum Energy Consumption Index*, DIGICONOMIST, <https://digiconomist.net/ethereum-energy-consumption/> [<https://perma.cc/S4B4-QH3Y>]. The energy consumed by Bitcoin's blockchain is magnitudes worse. *Id.*

317. Adam Bluestein, *Ethereum Risks It All on Going Green*, FORTUNE (July 29, 2021, 4:24 AM), <https://fortune.com/2021/07/29/ethereum-going-green-ether-crypto-carbon-footprint/> [<https://perma.cc/LPQ9-3ZDA>].

318. *A Guide to Gas*, CONSENSYS (May 23, 2018), <https://media.consensys.net/a-guide-to-gas-12b40d03605d> [<https://perma.cc/3RRP-6FDX>].



environment<sup>319</sup>—even to the degree that it creates a nuisance.<sup>320</sup> The bigger a blockchain network gets, the more harmful to the environment it becomes.<sup>321</sup> Consider the case of Bitcoin’s blockchain network. Bitcoin miners alone are estimated to consume about .6% of all global electricity consumption—about 130 Terawatt-hours of power.<sup>322</sup> One study found that Bitcoin’s carbon emissions alone equal those produced by certain small countries like Sri Lanka and Jordan.<sup>323</sup> In essence, one of the very things that NFT and other crypto proponents laud about the system (specifically, the decentralized and public nature of the ledger of transactions) is precisely the worst thing about it. None of these environmental concerns are consistent with the notions of human flourishing that lie at the heart of the progressive property theory. Good stewardship of the environment and responsible use of resources are what animate this school of thought when it comes to shaping property rules.<sup>324</sup> The operational underpinnings of NFTs that firms like Mintable and others advocate cut directly against these precepts. Indeed, to promote the widespread use of these crypto tokens would run crossways with, as Professor Freyfogle writes, the goal of ecological sustainability for which private property rules play an important role.<sup>325</sup> It runs counter to the proper role of property law in the environment under the progressive

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319. Justine Calma, *The Climate Controversy Swirling Around NFTs*, VERGE (Mar. 15, 2021, 9:51 AM), <https://www.theverge.com/2021/3/15/22328203/nft-cryptoart-ethereum-blockchain-climate-change> [<https://perma.cc/BS9M-TEE9>].

320. Vipal Monga, *Bitcoin Mining Noise Drives Neighbors Nuts—a Giant Dentist Drill That Won’t Stop*, WALL ST. J. (Nov. 12, 2021, 10:30 AM), <https://www.wsj.com/articles/bitcoin-mining-noise-drives-neighbors-nuts-giant-dentist-drill-that-wont-stop-11636730904> [<https://perma.cc/Y2UW-96NF>].

321. *Blockchain and the Environment*, EUR. ENV’T AGENCY (Mar. 25, 2021), <https://www.eea.europa.eu/publications/blockchain-and-the-environment> [<https://perma.cc/F4R2-MVUF>].

322. Leigh Cuen, *The Debate About Cryptocurrency and Energy Consumption*, TECHCRUNCH (Mar. 21, 2021, 11:30 AM), <https://techcrunch.com/2021/03/21/the-debate-about-cryptocurrency-and-energy-consumption/> [<https://perma.cc/KDS9-VZCY>]; see also Memo Akten, *The Unreasonable Ecological Cost of #CryptoArt (Part 1)*, MEMO AKTEN (Dec. 14, 2020), <https://memoakten.medium.com/the-unreasonable-ecological-cost-of-cryptoart-2221d3eb2053> [<https://perma.cc/B6GW-QFFP>] (discussing research methodology and energy consumption in the proof of work system).

323. Anna Irrera & Tom Wilson, *Elon Musk Wants Clean Power. But Tesla’s Carrying Bitcoin’s Dirty Baggage*, REUTERS (Feb. 10, 2021, 6:07 AM), <https://www.reuters.com/article/us-crypto-currency-tesla-climate-insight/elon-musk-wants-clean-power-but-teslas-carrying-bitcoins-dirty-baggage-idUSKBN2AA193> [<https://perma.cc/7YP7-K7QV>] (citing a study in the scientific journal JOULE).

324. See Laura Spitz & Eduardo M. Peñalver, *Nature’s Personhood and Property’s Virtues*, 45 HARV. ENV’T L. REV. 67, 70 (2021); Jill M. Fraley, *Climate Change, Sustainability, and the Failure of Modern Property Theory*, 104 MARQ. L. REV. 93, 139 (2020).

325. Eric T. Freyfogle, *Private Ownership and Human Flourishing: An Exploratory Overview*, 24 STELLENBOSCH L. REV. 430, 438 (2013).

theory framework—namely, to encourage “behavior that flows from stable dispositions to use land in ways that characteristically promote human flourishing.”<sup>326</sup> Instead, NFTs create the kind of “[i]ntensive activities” that can “degrade the land itself in ecological terms . . . in ways that affect future users and other life forms.”<sup>327</sup>

A problem with recognizing the current NFT system by the progressive property school of thought has to do with its exclusive in-group nature. NFTs and cryptocurrencies more broadly are heralded as a way to democratize finance and make markets more accessible and equitable.<sup>328</sup> But once one truly interrogates NFTs, one quickly sees that these digital assets are really for a very select group of people and likely will continue to be. According to a 2021 survey conducted by the Pew Research Center, although 86% of those surveyed said they had heard of cryptocurrencies, only 16% reported ever having invested in them.<sup>329</sup>

326. Eduardo M. Peñalver, *Land Virtues*, 94 CORNELL L. REV. 821, 876 (2009).

327. Freyfogle, *supra* note 325, at 438. One might then wonder if the progressive theory might be useful if the NFT process could be less energy consumptive: if someone were to make a cleaner, greener NFT. Yet still, the progressive property tenets would not be advanced. Rather than encouraging human flourishing through the democratization of property markets and opening access to those without resources, NFTs and Crypto Assets only reify economic and social barriers. First, it is expensive to engage in the NFT/crypto game all the way through. See Allen Gannett, *How I Became a Professional NFT Artist (Well, Sort of)*, ONEZERO (Mar. 8, 2021), <https://onezero.medium.com/how-i-became-a-professional-nft-artist-well-sort-of-d1597d2b3ddb> [<https://perma.cc/P4N6-WTQ3>]. Allen Gannett walked readers through how he paid \$1,300 to make four NFTs featuring an image of famous paintings that he had downloaded for free from the Metropolitan Museum of Art. *Id.* Gannett put the works up on Rarible and received a \$76 bid for one of them—a long way from a profit, and he still had to pay another \$88 fee to accept it. *Id.* The other three don’t appear to have sold, meaning Gannett lost over \$1,000. *Id.* As Eric Vazquez has argued in the case of the efforts by the government of El Salvador to democratize finance by making Bitcoin an accepted currency, 60% of the cryptocurrency’s wealth is concentrated in 2% of Bitcoin users. See Eric Vázquez, *Bitcoin: Salvadorans Face Deepening Inequality*, ALAINET (July 9, 2021), <https://www.alainet.org/en/articulo/213011> [<https://perma.cc/8LHY-GFSE>]. The entire enterprise is an exercise in “[s]elling the masses on a hallow promise.” See *id.*

328. See Sean S. Smith, *Blockchain Promised Democratization of Finance—Collaborating with Microfinance Can Make This a Reality*, FORBES (Oct. 7, 2020, 7:32 AM), <https://www.forbes.com/sites/seansteinsmith/2020/10/07/blockchain-promised-democratization-of-finance--collaborating-with-microfinance-can-make-this-a-reality/?sh=23e97830602b> [<https://perma.cc/4QBA-3STF>]; Stephen Stonberg, *Cryptocurrencies Are Democratizing the Financial World. Here’s How*, WORLD ECON. F. (Jan. 22, 2021), <https://www.weforum.org/agenda/2021/01/cryptocurrencies-are-democratising-the-financial-world-heres-how/> [<https://perma.cc/3T89-X8FC>]. See generally ESWAR S. PRASAD, *THE FUTURE OF MONEY: HOW THE DIGITAL REVOLUTION IS TRANSFORMING CURRENCIES AND FINANCE* (2021) (describing ways that financial innovation is promoting financial inclusion).

329. Andrew Perrin, *16% of Americans Say They Have Ever Invested in, Traded or Used Cryptocurrency*, PEW RSCH. CTR. (Nov. 11, 2021), <https://www.pewresearch.org/fact-tank/2021/11/11/16-of-americans-say-they-have-ever-invested-in-traded-or-used-cryptocurrency/> [<https://perma.cc/5UYK-JGL9>]. Those surveyed consisted of 10,371 U.S. adults and took place

Men ages 18 through 29 are particularly likely to fall into the crypto active investor group.<sup>330</sup>

Consider one aspect of the NFT process that is particularly salient for illustrating this point: to purchase an NFT, cryptocurrency is required.<sup>331</sup> It is not generally possible to directly purchase an NFT with government-backed money from your bank account.<sup>332</sup> As noted above, ether is the most prevalent cryptocurrency in the NFT market.<sup>333</sup> But to purchase ether on a crypto exchange, the buyer must pay an exchange fee to the platform.<sup>334</sup> These platforms structure their fees so as to encourage (by making it cheaper) large transactions.<sup>335</sup> In other words: to encourage buyers to purchase large amounts of a cryptocurrency at a given time, the platform will scale down its fee. Take Coinbase, for example—one of the largest and most popular exchange platforms at the time of this writing.<sup>336</sup> Depending on the size of the transaction, Coinbase can collect between \$20 and \$100 (or more) per ether transaction.<sup>337</sup> And as noted above, the transaction fees spike during high transaction-load periods.<sup>338</sup> Also, platforms typically set minimums for single crypto transactions—meaning that one must often purchase more of a given cryptocurrency than intended at a given time to make a purchase at all.<sup>339</sup> Against the backdrop of the many millions of Americans who are unbanked or

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between September 13 through 19, 2021. *Id.* “The survey [was] weighted to be representative of the U.S. adult population by gender, race, ethnicity, partisan affiliation, education and other categories.” *Id.*

330. *Id.*

331. *How Do You Buy an NFT Online?*, COINBASE, <https://www.coinbase.com/learn/crypto-basics/how-to-buy-nft> [<https://perma.cc/VR76-XYDH>].

332. *Id.*

333. Leech, *supra* note 19.

334. Nathan Reiff, *How Much Are Cryptocurrency Exchange Fees?*, INVESTOPEDIA (Dec. 31, 2021), <https://www.investopedia.com/tech/how-much-does-it-cost-buy-cryptocurrency-exchanges/> [<https://perma.cc/E7S9-EGDL>].

335. *Id.*

336. Lauren Aratani, *Coinbase, US's Largest Cryptocurrency Exchange, Makes Nasdaq Debut*, GUARDIAN (Apr. 14, 2021, 1:04 PM), <https://www.theguardian.com/technology/2021/apr/14/coinbase-nasdaq-value-cryptocurrency> [<https://perma.cc/95VL-E8FM>].

337. Kenneth Rapoza, *Cryptocurrency Exchange Fees Are a Mess. Will They Ever Improve?*, FORBES (Oct. 17, 2021, 5:00 PM), <https://www.forbes.com/sites/kenrapoza/2021/10/17/cryptocurrency-exchange-fees-are-a-mess-when-will-they-ever-improve/?sh=d77db302f4c2> [<https://perma.cc/P3V2-7ZN9>].

338. *See Ethereum Average Transaction Fee*, YCHARTS (Jan. 20, 2022), [https://ycharts.com/indicators/ethereum\\_average\\_transaction\\_fee](https://ycharts.com/indicators/ethereum_average_transaction_fee) [<https://perma.cc/QZ8M-NAED>].

339. For data on minimum withdrawal amounts and withdrawal fees across thirty-seven crypto exchange platforms that transact in ether, see *Withdrawal Fees on Cryptocurrency Exchanges*, WITHDRAWAL FEES, <https://withdrawalfees.com/coins/ethereum> [<https://perma.cc/MVG8-9JJC>].

underbanked, this system hardly seems like an improvement.<sup>340</sup> Small-denomination cryptocurrency purchases are expensive, leaving room for only those who can make larger purchases. If a core component of the progressive property theory is that property rights, including new forms of them, are in service of human flourishing, giving property-like recognition to these relatively exclusive transactions would be at odds with that goal.

In searching for a property theory to justify giving NFTs the property-related characteristics promised by their proponents,<sup>341</sup> a court would find no support among the progressive property theorists.

### III. NFT TRANSACTIONS AND POLICY IMPLICATIONS

The goal of this Article is not only to provide a normative critique of NFTs. This Article also endeavors, as noted in the Introduction, to assist courts and private parties as they deal with transactions involving NFTs in the marketplace. This Part offers a broader policy suggestion about how NFT promotion, and the activities it generates, should be better policed by consumer protection regulators.

#### A. *NFT Markets and Legal Effects*

This Section sets forth two example transactions involving NFTs that parties have and are predicted to enter (and which courts will have to deal with). In doing so, this Section shows how the law should treat these deals and what the outcomes would be. Recall that, as described in Part I, legal tokens entail that the holder has rights in some kind of underlying thing. The transfer of a negotiable instrument gets the new holder the right to enforce the instrument against the obligee.<sup>342</sup> The transfer of a security gets the new holder the economic and governance rights in the corporate entity to which the security relates.<sup>343</sup> The transfer of a bill of lading gets the transferee the right to possess the goods—essentially, ownership of them.<sup>344</sup> The list goes on<sup>345</sup>—the transferee of a true, legal token gets something. However, the transferee of an NFT gets nothing in terms of a tethered asset. And indeed, sometimes it is not certain that the transferee even gets the NFT.

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340. See *2017 FDIC National Survey of Unbanked and Underbanked Households*, FDIC, at 1 (Oct. 2018), <https://www.fdic.gov/analysis/household-survey/2017/2017execsumm.pdf> [<https://perma.cc/4YYG-TQH7>].

341. See *supra* notes 156–58 and accompanying text.

342. See *supra* Section I.A.1.

343. See *supra* Section I.A.2.

344. See *supra* Section I.A.4.

345. See *supra* Section I.A.5.

## 1. Sales and NFTs

The first example transaction is perhaps no surprise considering that this is the dominant type of NFT transaction in today's market—the sale. The auction process on NFT sites like Mintable, Foundation, and others is all about a buyer purchasing an NFT for a price to be paid in a cryptocurrency. The idea, as noted in Part I, is that the person who purchases the NFT acquires two things: (i) the NFT itself and (ii) the reference asset. This writing does not address the sale of only the NFT. In a recent article, Professor Joshua Fairfield addresses the issues around such sales—specifically whether the sale of an NFT should be treated as the transfer of contract rights<sup>346</sup> or the transfer of a right in personal property.<sup>347</sup> In contrast, this Section focuses on the arguably more lauded aspect of NFT transfers—the acquisition of rights in the reference thing by virtue of acquisition of the NFT.

Imagine that a seller owns a sculpture (a tangible asset). Seller then mints a digital token in connection with this sculpture, intending, as the minting platform provides,<sup>348</sup> for the digital token to embody ownership in the sculpture. The NFT's auction page includes a picture of the sculpture, and the item description gives the name and medium of the work. Seller then conveys the NFT to Buyer 1 through the platform's auction process. After the transaction is complete, but before Buyer 1 obtains delivery of the sculpture, Seller sells the sculpture to Buyer 2, who takes delivery of it at the time of sale. The question then becomes: between Buyer 1 and Buyer 2, who has superior rights in the sculpture? Is it Buyer 1 who purchased the NFT and did so first in time, or is it Buyer 2 who purchased the sculpture directly, although second in time?

The answer is clearly that Buyer 2 wins. The sale of the NFT did not transfer anything to Buyer 1 (except for the NFT itself). The reason for this is because there is nothing propertizing about the NFT that would create a legal connection between it and the sculpture. Merely uploading a picture of the sculpture alongside the NFT does not change this, despite what the minting platform may say. The law does not give legal effect to the NFT as a true token. Thus, a transfer of the token transfers nothing else.

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346. RESTATEMENT (SECOND) OF CONTRACTS §§ 317, 324 cmt. a (AM. L. INST. 1981); U.C.C. § 1-206 (AM. L. INST. & UNIF. L. COMM'N 1977); CAL. CIV. CODE § 1624.5 (West 2022); N.Y. U.C.C. Law § 1-207 (McKinney 2021).

347. Fairfield, *supra* note 40 (manuscript at 98). Fairfield argues that they should be treated as property and that the rules on the sale of goods should apply. *See id.*; *see also* U.C.C. § 2-105(1) (AM. L. INST. & UNIF. L. COMM'N 1977) (defining “goods” as all things movable, except the purchase money itself); U.C.C. § 9-109(a)(3) (AM. L. INST. & UNIF. L. COMM'N 1977) (providing the scope of Article 9, which includes “a sale of accounts, chattel paper, payment intangibles, or promissory notes”).

348. *See supra* note 37 and accompanying text.

Even when the facts are changed to be slightly more favorable to Buyer 1, the result is likely the same. As part of the marketing of the NFT, Seller actually represents in the item description that whomever wins the auction for the NFT will become the owner of the sculpture. Here, the promise related to the sale of the sculpture is express, rather than implied. Assume that when Buyer 1 wins the NFT, this (combined with Seller's representation) creates a separate contract of sale of the sculpture (a sale by e-contract<sup>349</sup> and not by virtue of merely acquiring the NFT). Yet again, if Buyer 2 takes possession of the sculpture before Buyer 1, Buyer 2 still wins.

This is because, absent true tokenization, the sale of tangible personal property (the sculpture) can only be completed by delivery.<sup>350</sup> Until such time, although the sale may be effective between the seller and the buyer, it will have no effect as to anyone else.<sup>351</sup> The issue can then arise that a seller conveys personal property to one person, who does not yet take delivery, and then conveys that same property to someone else, who does take possession. The rule, long articulated by U.S. courts, is that "[a]s between two bona fide purchasers of the same chattels," the one "who first obtains delivery and possession of them has the better title against the other."<sup>352</sup> This is true "notwithstanding the contract of sale of the [second buyer] with the vendor may have been prior in point of time to that of the [first buyer]."<sup>353</sup>

Applying this rule, Buyer 2 will typically win. All Buyer 2 must do is receive possession first and be a bona fide purchaser.<sup>354</sup> To be such a purchaser (often also called a good-faith purchaser), one must typically give value to the seller with the belief that the seller possesses the authority to convey the thing, as well as acquire the thing under facts and

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349. See WHITE & SUMMERS, *supra* note 95, at 7–8 (discussing internet sales and electronic contracting).

350. See *Lanfear v. Sumner*, 17 Mass. 110, 113 (1821) ("The general rule is perfectly well established, that the delivery of possession is necessary in a conveyance of personal chattels, as against every one but the vendor.").

351. This rule has a long history. See *id.* at 114; see also *Slaton v. Davis*, 246 P. 863, 864 (Okla. 1926) ("[D]elivery of possession is necessary in a conveyance of personal chattels, as against every one but the vendor. When the same goods are sold to two different persons, by conveyances equally valid, he who first lawfully acquires the possession will hold [it] against the other.").

352. *Brown v. Pierce*, 97 Mass. 46, 48 (1867); see also *Jewett v. Lincoln*, 14 Me. 116, 120 (1836) ("[W]here different persons claim the same goods by conveyances equally valid, he who first lawfully acquires the possession, has the better title.").

353. *Brown*, 97 Mass. at 48.

354. See *Cummings v. Gilman*, 38 Me. 538, 538–39 (1897) (discussing the law applied to bona fide purchasers).

circumstances that would not make the buyer inquire about the seller's title or right to sell.<sup>355</sup>

In typical arms-length transactions involving strangers, Buyer 2 will easily meet these requirements. Buyer 2 will reasonably assume that Seller owns the sculpture if Seller possesses it, and, absent clues to suggest otherwise, Buyer 2 is under no obligation to inquire about Seller's title.<sup>356</sup> Even the requirement of giving value is construed to be rather nominal.<sup>357</sup> Assuming that Buyer 2 does not know about the transaction with Buyer 1, then Buyer 2, who takes possession of the sculpture first, will prevail over Buyer 1. Now of course, this does not mean that Buyer 1 is without a remedy. Buyer 1 will have a breach-of-contract claim against Seller,<sup>358</sup> but Buyer 1 will not be able to receive the remedy they really want—ownership of the sculpture. And the primary reason for this is, once again, that the NFT is not a *true* token. Transfer of the token does not transfer rights to anything else.

## 2. Secured Credit and NFTs

The non-tethering nature of NFTs also poses a problem for secured creditors. A person with an NFT might want to borrow against it, and the transaction in which an NFT would serve as collateral for a loan would be governed by Article 9 of the UCC.<sup>359</sup> In 2019, the sponsoring entities of the UCC, the American Law Institute and the Uniform Law Commission, appointed a committee to draft amendments to the UCC to accommodate emerging and emerged technologies.<sup>360</sup> In 2022, the sponsoring entities approved amendments that will clarify the rules governing the creation and perfection of security interests in digital

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355. See *Lanfeur*, 17 Mass. at 114; see also JAMES J. WHITE ET AL., PRINCIPLES OF SALES LAW 211–13 (2d ed. 2017).

356. See, e.g., *In re Samuels & Co.*, 510 F.2d 139, 150 (5th Cir. 1975) (“The title to goods follows their possession.”), *rev'd en banc*, 526 F.2d 1238 (5th Cir. 1976); *In re Tom Woods Used Cars, Inc.*, 21 B.R. 560, 563–64 (E.D. Tenn. 1982) (“In Tennessee title to a car can be passed to a buyer without assignment of the certificate of title. Failure to demand assignment of the title certificates also does not show a lack of good faith.” (citation omitted)).

357. See *Werhan v. Pinellas Seafood Co.*, 404 So. 2d 570, 572 (Ala. 1981); *Lavonia Mfg. Co. v. Emery Corp.*, 52 B.R. 944, 946 (E.D. Pa. 1985).

358. See generally WHITE ET AL., *supra* note 355, at 301–92 (discussing a buyer's various remedies on account of a seller's breach under Article 2 of the UCC).

359. See U.C.C. § 9-109(a)(1) (AM. L. INST. & UNIF. L. COMM'N 1977) (“[T]his article applies to: a transaction, regardless of its form, that creates a security interest in personal property . . .”).

360. UNIF. L. COMM'N & EMERGING TECH. COMM., UNIF. L. COMM'N (2021), <https://www.uniformlaws.org/committees/community-home?CommunityKey=cb5f9e0b-7185-4a33-9e4c-1f79ba560c71> [<https://perma.cc/CPC2-2B4A>].

assets, including but not limited to crypto assets.<sup>361</sup> Until those amendments are enacted by states, the existing version of Article 9 will govern lending transactions involving NFTs.

Under the current version of Article 9, an NFT is a general intangible. “General intangible” is a catch-all term under the UCC; it encompasses all assets that do not fall into any other Article 9 definition.<sup>362</sup> Because an NFT is neither a good, a payment right, a security, or any other type of Article 9 collateral, it is a general intangible. As a result, a secured party can perfect its interest in the NFT only by filing a financing statement in the applicable government office in the state in which the NFT’s owner is located.<sup>363</sup>

Such a perfected security interest, however, would not likely be satisfactory to a secured creditor for two reasons. The first is that it would not convey any right in the reference asset. The second is that there is no easy way to enforce the security interest in the NFT.

Part I of this Article discussed other tokens. For each of these tokens, the transfer of the token granted the transferee rights in something else. Article 9 of the UCC respects the non-UCC classification of rights. This respect for general property principles is implicit in the UCC definitions and in the general requisites for creating a security interest. The UCC defines “[s]ecurity interest” as “an interest in personal property . . . [that] secures payment or performance of an obligation.”<sup>364</sup> Article 9 defines “[c]ollateral” as “the property subject to a security interest.”<sup>365</sup> One of the requirements for creation of a security interest is that the debtor have “rights in the collateral.”<sup>366</sup> Under all of those definitions, the collateral would be the token itself.

Article 9 also respects “linked” collateral. For example, if a promissory note is secured by a property interest in an asset, creation of a security interest in the note also creates a security interest in the lien.<sup>367</sup> This is a codification of the long-standing principle that the mortgage

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361. See Katie Robinson, *ULC Wraps Up 131st Annual Meeting: Five New Acts Approved*, UNIF. L. COMM’N (July 13, 2022), <https://www.uniformlaws.org/discussion/ulc-wraps#bm612b6597-280a-4d9e-aa31-5fbb67f8e5ba> [<https://perma.cc/Q7MH-AB5L>]. The amendments add a new Article 12 of the UCC that would govern “Controllable Electronic Records.” See UNIF. L. COMM’N, *UNIFORM COMMERCIAL CODE AND EMERGING TECHNOLOGIES AS APPROVED ACT (2022)*, <https://www.uniformlaws.org/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=67fe571b-e8ad-caf8-4530-d8b59bdca805&forceDialog=0> [<https://perma.cc/75FZ-Z77M>].

362. See U.C.C. § 9-102(a)(42) (AM. L. INST. & UNIF. L. COMM’N 1977).

363. *Id.* § 9-301(1); *id.* § 9-310(a).

364. *Id.* § 1-201(b)(35).

365. *Id.* § 9-102(a)(12).

366. *Id.* § 9-203(b)(2).

367. See *id.* § 9-203(g).



follows the note.<sup>368</sup> There is a practical reason that the property interests in the mortgage and note are inextricably linked: without the note that evidences the obligation to pay, the mortgage is ineffective, and without the mortgage that secures the note, the note is unsecured.<sup>369</sup> Because the creation of a security interest conveys the property rights in collateral recognized by other law, the UCC thus provides that a security interest in a mortgage is a security interest in the note secured by that mortgage. One right follows the other.

Another example of linked, or tokenized, collateral is when goods are in the possession of a bailee that has issued a document of title covering those goods. Part I discussed bills of lading as tokens.<sup>370</sup> As discussed in that Part, a person to whom a document of title, such as a bill of lading, is negotiated obtains title to both the document and the goods covered by the document.<sup>371</sup> Because title to the goods is embodied in the document, the UCC provides that the perfection of a security interest in a negotiable document of title perfects the creditor's security interest in the covered goods.<sup>372</sup>

As illustrated throughout this Article, there is no property link between an NFT and its reference asset. All an NFT does is refer to the underlying asset; it gives no rights, including priority rights, in that asset. As a result, a security interest in an NFT will give the lender a lien only on the token itself, not on any related asset (and, in most cases, it is the related asset that has the real value that the lender really wants).

Assuming that a secured creditor will be satisfied with a lien on the token, that creditor will face hurdles in enforcing that lien. A secured party can take possession of collateral upon the debtor's default<sup>373</sup> but NFTs, as intangible assets, are not the type of collateral that can be possessed.<sup>374</sup> Another UCC Article 9 enforcement section allows a secured party to notify "an account debtor or other person obligated on collateral" to pay or otherwise perform for the creditor upon default.<sup>375</sup>

368. See RESTATEMENT (THIRD) OF PROP.: MORTGS. § 5.4(a) (AM. L. INST. 1997) ("A transfer of an obligation secured by a mortgage also transfers the mortgage unless the parties to the transfer agree otherwise.").

369. See *id.* § 5.4 cmt. a.

370. See *supra* Section I.A.4.

371. U.C.C. § 7-502(a)(1)–(2) (AM. L. INST. & UNIF. L. COMM'N 1977).

372. *Id.* § 9-312(c)(1).

373. *Id.* § 9-609(a)(1).

374. See Juliet M. Moringiello, *False Categories in Commercial Law: The (Ir)Relevance of (In)Tangibility*, 35 FLA. ST. U. L. REV. 119, 127–28 (2007) (explaining that the UCC does not provide a foreclosure remedy to a creditor with a security interest in a general intangible that is not a payment right); Christopher K. Odinet, *BitProperty and Commercial Credit*, 94 WASH. U. L. REV. 649, 693–98 (2017) (critiquing the UCC's enforcement provisions as applied to collateral consisting of general intangibles).

375. U.C.C. § 9-607(a)(1) (AM. L. INST. & UNIF. L. COMM'N 1977).

While this provision could arguably apply to NFT collateral because the definition of account debtor includes a person obligated on a general intangible,<sup>376</sup> there are several stumbling blocks. The first is that the collection remedy has no teeth when the collateral is a general intangible. Article 9 permits an account debtor to continue to pay the debtor until it receives notification from the secured party that the secured party should receive payment instead.<sup>377</sup> If the account debtor pays the debtor after that notification, its obligation to pay will not be discharged.<sup>378</sup> The term “pay” is used deliberately; the remedy given to a secured party with a security interest in intangibles only has teeth when the collateral is a payment right.<sup>379</sup>

Even assuming that the existing enforcement provision could be effective, there is an additional hurdle. As explained in the description of the terms of service governing NFTs, it is not clear who the account debtor is.<sup>380</sup> The NFT minting platforms all deny that they have any control over the NFTs, although they reserve the right to deny the NFT owner access to the token for various breaches of the terms of service.<sup>381</sup> Even if the platforms can deny access to the token owner, it is unlikely that they can transfer the tokens, which exist on the Ethereum blockchain. This raises a further question: who would be notified of the default, and how would that entity turn the token over to the secured party?

### B. Policy Implications

Having now firmly established that the NFTs of today are not really tokens in the legal sense—despite what is otherwise proclaimed<sup>382</sup>—the obvious next question is what should be done about this market craze. One idea, of course, would be to do nothing. However, this Article does not advocate this position for the simple reason of consumer protection. Many individuals are expending meaningful amounts of money in NFT transactions.<sup>383</sup> Sales of NFTs surged ahead in the second quarter of 2021, up to \$2.5 billion from a mere \$13.7 million in the first part of 2020.<sup>384</sup>

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376. *Id.* § 9-102(a)(3).

377. *Id.* § 9-406(a).

378. *Id.*

379. *See id.* (providing discharge rules when the collateral is an account, chattel paper, or a payment intangible).

380. *See supra* Section I.B.2.a.

381. *See supra* Section I.B.2.a.

382. *See supra* Part II.

383. Bobby Allyn, *What’s an NFT? And Why Are People Paying Millions to Buy Them?*, NPR (Mar. 5, 2021, 7:00 PM), <https://www.npr.org/2021/03/05/974089381/whats-an-nft-and-why-are-people-paying-millions-to-buy-them> [https://perma.cc/2GJV-6V45].

384. Elizabeth Howcroft, *NFT Sales Volume Surges to \$2.5 Bln in 2021 First Half*, REUTERS (July 6, 2021, 2:00 AM), <https://www.reuters.com/technology/nft-sales-volume-surges-25-bln-2021-first-half-2021-07-05/> [https://perma.cc/CNC7-2HD3].

Between March and July of 2021, there were roughly ten to twenty thousand transactions per week.<sup>385</sup> And while markets for other types of goods are certainly much larger,<sup>386</sup> NFTs are still drawing a large enough number of participants to merit some market disciplining.<sup>387</sup> Moreover, even as the market for the digital-art-related NFTs begins to cool,<sup>388</sup> major corporate and financial firms are making big plans for NFTs in their own lines of business.<sup>389</sup>

The major consumer protection issue is one of *misrepresentation*. NFT platforms are either directly promoting NFTs as being legally capable of more than what the law will allow, or they are at least sending mixed messages about what is being offered and what the buyer (or seller, for that matter) can actually expect. As previously noted, Mintable promises that one can establish “ownership of an item external to the token.”<sup>390</sup> Also, Makersplace states that its “token is what provides proof of ownership and authenticity of your creation.”<sup>391</sup> It does this by providing “[p]roof of ownership and authenticity on the blockchain.”<sup>392</sup> SuperRare also promises that its tokens provide “a permanent record of authenticity and ownership.”<sup>393</sup> Foundation says that its tokens “keep track of provenance and ownership” when it comes to digital artwork.<sup>394</sup> When one buys a Foundation NFT, the company promises that one acquires “the unique token representing the digital artwork” and “[o]wnership [of the digital artwork] is then recorded in a tamper-proof way by the token.”<sup>395</sup> Similar promises about property rights and ownership abound among the other minting platforms as well.<sup>396</sup>

385. *See id.*

386. *See* 2022 Consumer Products Industry Outlook, DELOITTE (2022), <https://www2.deloitte.com/us/en/pages/consumer-business/articles/consumer-products-industry-outlook.html> [<https://perma.cc/67BU-J38F>].

387. *Id.*

388. *See* Ryan Browne, *NFT Sales Are Dropping But Believers Still See a Future for Digital Collectibles*, CNBC (June 15, 2021, 3:00 AM), <https://www.cnbc.com/2021/06/15/nft-price-crash-what-next-for-digital-collectibles.html> [<https://perma.cc/JSK6-MJ5T>].

389. *See supra* Introduction.

390. *See* Zach of Mintable.app, *supra* note 37.

391. *See Frequently Asked Questions*, *supra* note 37.

392. *See id.*

393. *SuperRare: Peer-to-Peer Marketplace for Non-Fungible Tokens*, READ.CASH (May 2021), <https://read.cash/@Heath/superrare-p2p-digital-art-marketplace-explained-09d6ac83> [<https://perma.cc/JFD5-YH7T>].

394. *See* FOUNDATION, *supra* note 37.

395. *See id.*

396. *See, e.g.*, KNOWNORIGIN, *supra* note 37 (stating that its tokens provide “an immutable, trustworthy and reliable source of ownership”); *see also* Finzer, *supra* note 37 (“Non-fungible tokens (NFTs) are unique, digital items with blockchain-managed ownership. Examples include collectibles, game items, digital art, event tickets, domain names, and even ownership records for physical assets.”).

Consumers and even supposedly sophisticated investors have been swept away by these false or at least misleading promises.<sup>397</sup> And, as the industry has predicted,<sup>398</sup> conflict between what was promised and what was actually delivered is inevitable. To diminish the volume of conflict going forward, certain public officials charged with protecting consumers must take action. Specifically, state attorneys general and the Federal Trade Commission (FTC) should issue enforcement and compliance bulletins warning minting platforms and related NFT transactional companies about the illegality of making false statements to the public about the nature of NFTs and what they provide their holders.

### 1. Deceptive Acts and Practices

Both state attorneys general and the FTC have enough legal authority to make enforcement threats in that way. Since 1994, the FTC has had the authority under Section 5 of the Federal Trade Commission Act (FTC Act)<sup>399</sup> to police unfair and deceptive acts and practices (UDAP).<sup>400</sup> For a practice to be deceptive, as interpreted by the FTC, it must involve a material “representation, omission or practice that is likely to mislead [a] consumer acting reasonably in the circumstances.”<sup>401</sup> An act or practice is “unfair” if it “causes or is likely to cause substantial injury to consumers which is not reasonably avoidable by consumers themselves and not outweighed by countervailing benefits to consumers or to competition.”<sup>402</sup>

The misleading statements by companies in their NFT operations are precisely the kinds of activities with which the deceptive provision of the statute was meant to deal. Indeed, commentators note that the original purpose of the provision was to address misleading marketing.<sup>403</sup> Under this provision, it is not the product that needs to be deceptive, but rather the statements made to promote it.<sup>404</sup> Moreover, the focus is on what the consumer thinks, rather than what the seller thinks.<sup>405</sup> In other words, the seller need not intend for the statements to be deceptive.<sup>406</sup> They just need

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397. See Allyn, *supra* note 383; see also Howcroft, *supra* note 384 (describing the fall of the average price of a National Basketball Association-related NFT).

398. See *supra* Introduction; see also, e.g., *supra* note 38 and accompanying text.

399. Pub. L. No. 103-313, 108 Stat. 1697 (1994) (codified as amended at 15 U.S.C. § 45).

400. 15 U.S.C. § 45(a).

401. *FTC Policy Statement on Deception*, FED. TRADE COMM’N 1–2 (Oct. 14, 1983), [https://www.ftc.gov/system/files/documents/public\\_statements/410531/831014deceptionstmt.pdf](https://www.ftc.gov/system/files/documents/public_statements/410531/831014deceptionstmt.pdf) [https://perma.cc/3QA3-FRHS].

402. 15 U.S.C. § 45(n).

403. ADAM J. LEVITIN, *CONSUMER FINANCE LAW: MARKETS AND REGULATION* 194 (2018).

404. *Id.*

405. *Id.*

406. *Id.*

to be materially misleading and the consumer must be reasonable in believing them.<sup>407</sup>

The NFT market described above easily meets these elements. The statements about NFTs conveying ownership are materially misleading. They assert that NFTs generate certain legal effects that they demonstrably do not.<sup>408</sup> Even though the terms of service sometimes disclaim this assertion, or at least obfuscate it, they are in tension with the more public-facing statements made by these companies, and empirical studies have long shown that consumers do not read the fine print. Additionally, consumers have no reason to know any better. The public is not generally educated on property law, much less the actual legal use of tokens such as the ones described in Part I. Additionally, the fact that so many people have bought into the NFT story and are spending considerable amounts of money in such transactions suggests these are not idiosyncratic buyers. Rather, they represent some portion of the general public which can hardly be said to be acting unreasonably. And while it may be true that some portion of the NFT-buying public is *in on the secret* and knows that what is being promised is indeed not what is being delivered<sup>409</sup> (in essence, one might say they are only interested in a certain expressive function in purchasing NFTs),<sup>410</sup> it is unclear how large this group of insider buyers really is. There may be many more individuals who take these claims at face value.<sup>411</sup>

407. *Id.*; see also H.R. REP. NO. 75-1613, at 4–5 (1937) (justifying a broad reach from a legislative intent perspective).

408. See *supra* Part II and accompanying discussion.

409. Jonathan Zittrain & Will Marks, *What Critics Don't Understand About NFTs*, ATLANTIC (April 7, 2021), <https://www.theatlantic.com/ideas/archive/2021/04/nfts-show-value-owning-unownable/618525/> [<https://perma.cc/UT4S-58QQ>] (arguing that “[t]he complexity and arbitrariness of non-fungible tokens are a big part of their appeal”).

410. For a discussion of legal and non-legal conceptions of intellectual property (both technical and cultural), see Rebecca Tushnet, *IP Without IP, Part One*, REBECCA TUSHNET’S 43(B)LOG (May 3, 2008, 12:53 PM), <https://tushnet.blogspot.com/2008/05/ip-without-ip-part-one.html> [<https://perma.cc/S2RT-3N4N>]; Rebecca Tushnet, *IP Without IP, Part Two*, REBECCA TUSHNET’S 43(B)LOG (May 3, 2008, 3:37 PM), <https://tushnet.blogspot.com/2008/05/ip-without-ip-part-two.html> [<https://perma.cc/RR3W-N36E>]; Rebecca Tushnet, *IP Without IP, Part 3*, REBECCA TUSHNET’S 43(B)LOG (May 4, 2008, 7:52 AM), <https://tushnet.blogspot.com/2008/05/ip-without-ip-part-3.html> [<https://perma.cc/4A4D-MPJA>]; Rebecca Tushnet, *IP Without IP, Part 4*, REBECCA TUSHNET’S 43(B)LOG (May 4, 2008, 7:54 AM), <https://tushnet.blogspot.com/2008/05/ip-without-ip-part-4.html> [<https://perma.cc/EEN7-4BH8>].

411. See Ben Popper & David Gibson, *Most Developers Believe Blockchain Technology Is a Game Changer*, OVERFLOW (June 7, 2021), <https://stackoverflow.blog/2021/06/07/most-developers-believe-blockchain-technology-is-a-game-changer-3/> [<https://perma.cc/PLN8-22RT>]; David Segal, *Going for Broke in Cryptoland*, N.Y. TIMES (Nov. 2, 2021), <https://www.nytimes.com/2021/08/05/business/hype-coins-cryptocurrency.html> [<https://perma.cc/5FYQ-UJ5Q>]; Erin Griffith, *We’re All Crypto People Now*, N.Y. TIMES (Oct. 29, 2021), <https://www.nytimes.com/2021/04/25/technology/cryptocurrency-mainstream.html> [<https://perma.cc/YT9L-XNNU>].

Likewise, state attorneys general should issue similar enforcement bulletins. State attorneys general serve, in essence, the same consumer-protection function at the state level that the FTC does at the federal level.<sup>412</sup> Accordingly, each state has its own UDAP statute<sup>413</sup> which allows state attorneys general to bring actions against private companies when they engage in unfair and deceptive acts and practices.<sup>414</sup> And while these statutes can vary from state to state, they generally allow for actions to be brought in connection with misleading advertising related to products offered to the general public.<sup>415</sup> While the FTC has a national view of markets, state attorneys general serve an important role in consumer protection by having an on-the-ground view of local markets. It is also often easier for aggrieved consumers to get the attention of state enforcement officials because of local considerations. Action by these two regulators could go a long way in policing this overly hyped market.

## 2. Access to Justice

Some may argue that it would be best to just leave matters up to private litigation and keep public enforcement officials out of the NFT market. Such a suggestion might have some merit were it not for two particular provisions commonly found in NFT terms of service—*mandatory arbitration* and *class action waiver* clauses. Nearly all of the known NFT minting platforms—and certainly all those surveyed in Section I.B.2—have such provisions in their terms of service.<sup>416</sup>

The significance of this is that aggrieved parties do not have access to the courts and cannot join together as a class to make their claims economically viable. Arbitration is typically heralded as a way to lower

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412. See Mark Totten, *Credit Reform and the States: The Vital Role of Attorneys General After Dodd-Frank*, 99 IOWA L. REV. 115, 120–21 (2013).

413. See, e.g., ME. STAT. tit. 5, §§ 205A–214 (2021); LA. STAT. ANN. §§ 51:1401–20 (2021); IOWA CODE § 714.16 (2022); CAL. BUS. & PROF. CODE §§ 17000–17101 (West 2021); CAL. CIV. CODE §§ 1750–1756, 1760–1761, 1770, 1780–1784 (West 2021); OKLA. STAT. tit. 15, §§ 751–763 (2021); N.Y. EXEC. LAW § 63(12) (McKinney 2021); N.Y. GEN. BUS. LAW §§ 349–350 (McKinney 2021).

414. LEVITIN, *supra* note 403, at 81–82.

415. See Neil Austin, *The Adver-series: State Attorneys General Play Increasing Role in Advertising Regulation*, STATE AG INSIGHTS (Mar. 13, 2018), <https://www.stateaginsights.com/2018/03/13/the-adver-series-state-attorneys-general-play-increasing-role-in-advertising-regulation/> [<https://perma.cc/3X46-DS48>].

416. See *Terms of Service*, MAKERSPLACE, *supra* note 200, § 15; *Terms of Service*, SUPERRARE, *supra* note 170; *Terms of Use*, ASYNCHRONOUS ART, INC. § 18(b) (Apr. 26, 2021), <https://async.art/zh/legal/terms-of-use> [<https://perma.cc/B2FF-BWQB>]; *Nifty Gateway Terms of Use*, NIFTY GATEWAY § 21 (Sept. 23, 2021), <https://niftygateway.com/termsfuse> [<https://perma.cc/HEQ3-2BNR>]; FOUNDATION, *supra* note 167, § 12; RARIBLE, *supra* note 181, §§ 10.3–.7; *Terms*, WAX (Sept. 15, 2020), <https://on.wax.io/tos/> [<https://perma.cc/K6JS-4P2Q>]; *Binance Terms of Use*, BINANCE § X (Jan. 24, 2022), <https://www.binance.com/en/terms> [<https://perma.cc/Q4AK-QMJS>].

the cost and increase the speed of dispute resolution by avoiding court litigation.<sup>417</sup> It is potentially a faster and cheaper way of resolving private disputes.<sup>418</sup> The reality, however, is that it is a procedural barrier to consumer litigation.<sup>419</sup> Much has been written about the shortcomings of consumer arbitration procedures,<sup>420</sup> but this Section highlights a few of the more salient points. First, there is an issue with repeat players because the same businesses appear before the same arbitrators, while the consumers are typically one and done.<sup>421</sup> Empirical work in the employment arbitration realm has revealed a clear repeat-player bias (in favor of employers and against employees, for example).<sup>422</sup> Second, there are serious questions about the quality of the decision-making and the effects on due process.<sup>423</sup> To quote from Professor Adam Levitin's critique: "Rules of procedure and evidence do not necessarily apply, third-party interventions and amicus briefs are not necessarily accepted, arbitrators are not bound by precedent" and, indeed, "arbitrations do not produce precedent (or even necessarily written opinions)."<sup>424</sup> And perhaps most significantly, arbitrations are not public—they happen in secret and are often subject to confidentiality provisions.<sup>425</sup>

Aside from the justice and process issues with arbitration, the coupling with class action waivers is what creates the real barrier. The cost of litigating a claim—particularly where the consumer must front the money—can be significant.<sup>426</sup> Sometimes a plaintiff can convince a lawyer to take the case on a contingency fee basis, but that only happens when the amount of the potential judgment is significant enough to be sufficiently profitable for the attorney.<sup>427</sup> A 2013 study by the National

417. LEVITIN, *supra* note 403, at 52–53.

418. *Id.*

419. *Id.* at 54–55.

420. See, e.g., *Mandatory Binding Arbitration Agreements: Are They Fair for Consumers?: Hearing Before the Subcomm. on Com. & Admin. L. of the H. Rep. on the Judiciary*, 110th Cong. 1 (2007), <https://www.govinfo.gov/content/pkg/CHRG-110hhrg36018/html/CHRG-110hhrg36018.htm> [<https://perma.cc/JV94-CYKP>]; Scott Medintz, *Forced Arbitration: A Clause for Concern*, CONSUMER REPS. (Jan. 30, 2020), <https://www.consumerreports.org/mandatory-binding-arbitration/forced-arbitration-clause-for-concern/> [<https://perma.cc/65WH-6N9K>]; David Horton & Andrea Cann Chandrasekher, *After the Revolution: An Empirical Study of Consumer Arbitration*, 104 GEO. L.J. 57, 76–77 (2015) (discussing studies of consumer arbitration records).

421. LEVITIN, *supra* note 403, at 54.

422. *Id.* (citing SEARLE CIV. JUST. INST., CONSUMER ARBITRATION: BEFORE THE AMERICAN ARBITRATION ASSOCIATION: PRELIMINARY REPORT 16 (2009), [https://www.adr.org/sites/default/files/document\\_repository/Searle%20Civil%20Justice%20Institute%20Report%20on%20Consumer%20Arbitration.pdf](https://www.adr.org/sites/default/files/document_repository/Searle%20Civil%20Justice%20Institute%20Report%20on%20Consumer%20Arbitration.pdf) [<https://perma.cc/GT6Z-FG4J>]).

423. *Id.* at 54–55.

424. *Id.* at 54.

425. *Id.*

426. *Id.* at 44–45.

427. *Id.*

Center for State Courts found that the breach-of-contract case (which is what an NFT dispute would entail) required about 370 hours of lawyer time in order to proceed through a trial.<sup>428</sup> If the hourly rate was \$250, that would generate a median cost of about \$91,000 per suit.<sup>429</sup>

How might this play out in an NFT dispute? Consider that as of April 2021, the average sale price of an NFT was \$5,800 through the platform SuperRare, \$2,400 through MakersPlace, and \$3,500 through Foundation.<sup>430</sup> A consumer is unlikely to front \$91,000 in order to litigate a claim worth so much less. Even with actual damages and the limited array of other potential damages—punitive damages, in particular, are rarely available<sup>431</sup>—it is unlikely the amount of the claim will rise to even a quarter of the amount spent bringing it. Such a small claim will certainly not generate the interest of an attorney willing to take cases on a contingency fee basis.<sup>432</sup> It would only be justified if multiple plaintiffs with related claims could bring them together as a class—in a class action.<sup>433</sup> This would generate a much larger overall judgment, which would, in turn, generate a larger fee for the attorney.

The combination of class action waivers and mandatory arbitration clauses prevent consumers from ever bringing these claims, particularly when they involve relatively small amounts.<sup>434</sup> The NFT platforms almost uniformly impose such provisions in their terms of service, thereby creating an access-to-justice barrier for aggrieved parties. This is why it is so important for public officials like the FTC and state attorneys general to take action. In reality, they are the only ones who can. Their very nature is to represent the public—they represent the class of all aggrieved persons by virtue of their mission. Moreover, they have access

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428. *Id.* at 44 (citing Paula Hannaford-Agor & Nicole L. Waters, *Estimating the Cost of Civil Litigation*, *Nat'l Center for State Courts*, 20 CASELOAD HIGHLIGHTS 1 (2013)).

429. *Id.*

430. See Eileen Kinsella, *Think Everyone Is Getting Rich off NFTs? Most Sales Are Actually \$200 or Less, According to One Report*, ARTNET NEWS (Apr. 29, 2021), <https://news.artnet.com/market/think-artists-are-getting-rich-off-nfts-think-again-1962752> [<https://perma.cc/W5BB-3MCJ>] (suggesting that the price might be much lower if some of the larger sales were taken out of the calculation).

431. See, e.g., *Cichocki v. Quesnel*, No. CV990590951, 2001 WL 1479129, at \*1 (Conn. Super. Ct. Nov. 9, 2001); *Zitiello v. LaRocca*, No. 52813, 1987 WL 18273, at \*4 (Ohio Ct. App. Oct. 8, 1987); *Saudi Basic Indus. Corp. v. Mobil Yanbu Petrochemical Co.*, No. 00C-07-161, 2003 WL 22016843, at \*2 (Del. Super. Ct. Aug. 26, 2003), *aff'd*, 866 A.2d 1 (Del. 2005).

432. See Eyal Zamir & Ilana Ritov, *Revisiting the Debate over Attorneys' Contingent Fees: A Behavioral Analysis*, 39 J. LEGAL STUD. 245, 246 (2010).

433. See generally Thomas J. Miceli & Kathleen Segerson, *Contingent Fees for Lawyers: The Impact on Litigation and Accident Prevention*, 20 J. LEGAL STUD. 381 (1991) (comparing the number of suits between contingency fees and hourly fees); Brian T. Fitzpatrick, *An Empirical Study of Class Action Settlements and Their Fee Awards*, 7 J. EMPIRICAL LEGAL STUD. 811 (2010) (explaining federal class actions at length, including a discussion on attorneys' fees).

434. LEVITIN, *supra* note 403, at 57.



to substantial resources, including public funding, that allow them to bring cases more easily than individual plaintiffs or even groups of plaintiffs. They can bring these claims based on principle and not on profit.

As the NFT markets continues to develop—involving different kinds of reference assets—public enforcement officials must take a precautionary approach. By signaling to the market now that false promises and misleading statements about the nature of NFTs constitute illegal acts, consumers—from collectors to retail investors and beyond—can better avoid future disputes.

### CONCLUSION

The NFT hype promises a new way of giving value to intangible assets. As legal tokens, however, NFTs fail. All legal tokens evolved to solve problems. Negotiable instruments and certificated securities developed to give certainty to the transfer of intangible rights. Deeds of real property developed to prove the transfer of land, an asset that cannot be physically transferred. Bills of lading developed to facilitate transfers of goods in transit. Other “token-like” items such as automobile certificates of title and bailment tickets provide evidence of ownership.

NFTs, however, are a solution in search of a problem. They do not provide any link to an underlying asset, and therefore do not facilitate the transfer of any asset. A blockchain, like a recording system, provides a record of ownership, but in the case of NFTs, all it provides is a record of who owns the NFT, not of who owns any reference asset. Representations to the contrary by crypto enthusiasts and financial engineers fail to recognize the role of private law—in this case, property law—in the tethering function. As Professor Danielle D’Onfro has observed in her work on bailments and cloud storage: “the law of technology without background principles of private law is the law of suckers.”<sup>435</sup>

As policymakers grapple with new assets (particularly digital assets), it is important for them to know what those new assets are, and what rights they embody. This Article has illustrated areas of uncertainty, such as the transfer and financing of NFTs, and the areas of potential harm, particularly in the consumer protection realm. The Uniform Law Commission and American Law Institute are currently working to provide some legal certainty to commercial transactions in digital assets and other entities will be faced with protecting consumers who trade in these assets. In fashioning the necessary rules, it is important to keep basic property concepts in mind, and this Article has shown that traditional property concepts do not support the idea that the NFTs currently offered to the public are, in fact, true tokens—and nor should they be.

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435. Danielle D’Onfro, *The New Bailments*, 97 WASH. L. REV. 153 (2022).