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PART I

Contemporary Technological Developments

1

Non-fungible Tokens in Commercial Transactions

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**Abstract** The auction of Bored Ape #8817 for \$3.4 million in October 2021 marked a watershed moment in the escalating trend of non-fungible tokens (NFTs). This chapter ventures into the core of the tokenization phenomenon, scrutinizing the legal implications of creating digital representations (tokens) of diverse assets. Amid the burgeoning NFT market, a pivotal question emerges: What precisely are the property rights conferred upon those acquiring these tokens? Beyond the staggering sales figures, the chapter dissects the tokenization process, emphasizing the NFT minting process and blockchain technology. It explores claims that NFTs herald the future of digital property, challenging traditional governmental powers. Anticipating legal challenges, the chapter navigates critical inquiries about token holders’ rights, the tethering (or not) of tokens to underlying assets, and the impact of the 2022 Uniform Commercial Code revisions. This chapter seeks to provide a nuanced perspective, unraveling legal realities from the fervor surrounding tokenization’s transformative potential in the digital era.

INTRODUCTION

In October 2021, the digital image of an ape with a wearied and uninterested expression – known as Bored Ape #8817 – sold for an astounding \$3.4 million in an online auction by Sotheby’s.<sup>1</sup> Actually, it was not really the digital ape that was sold. Rather, the auction was for a token representing the graphic. Although noteworthy for its price, this bored ape non-fungible token (NFT) was just the latest in the tokenization craze – the idea of creating a unique digital representation (a token)

\* This chapter is based, either in whole or in part, on Juliet M. Moringiello & Christopher K. Odinet, *The Property Law of Tokens*, 74 FLA. L. REV. 607 (2022).  
<sup>1</sup> Rajpalsinh, *BAYC #8817 Makes New Record with \$3.4M Sale on Sotheby’s Metaverse*, CRYPTO TIMES (Oct. 27, 2021, 3:58 PM), [www.cryptotimes.io/bayc-8817-makes-new-record-with-3-4m-sale-on-sothebys-metaverse/](https://www.cryptotimes.io/bayc-8817-makes-new-record-with-3-4m-sale-on-sothebys-metaverse/) [https://perma.cc/69LG-8TCJ].

of a particular asset, which proponents assert will upend government and property law as we know it.<sup>2</sup>

This chapter gets to the heart of the real question: What does it really mean to *tokenize* something under the law? In other words, what property rights does the owner of the bored ape token receive? Ownership? Some other kind of property entitlement? If the right is a property right, is it a property right in just a token, or is it some right in the Bored Ape image? Perhaps the owner receives a contract right. Maybe the owner receives only 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 has grown at an impressive rate.<sup>3</sup> Aside from Bored Ape #8817 and its multi-million-dollar bounty (and the many other NFTs in the bored apes series that have sold for millions of dollars<sup>4</sup>), 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> Indeed, these sales prices in the millions have continued into 2022.<sup>8</sup> So while the idea of NFTs has existed since

<sup>2</sup> See *Tokenize*, DECRYPTIONARY (Oct. 9, 2017), <https://decryptionary.com/glossary/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”); Carlos Alonso Torras, *The Untold Story of the NFT Boom*, FINTECH COLLECTIVE (May 14, 2021), <https://news.fintech.io/post/102gy40/the-untold-story-of-the-nft-boom> [<https://perma.cc/VDS5-YA7C>].

<sup>3</sup> See generally Jamie Redman, *30 Day NFT Sales Continue to Run Hot with Punks and Apes, Metaverse Trade Volume Skyrockets*, BITCOIN.COM (Dec. 24, 2021), <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).

<sup>4</sup> Renuka Tahelyani, *Top 11 Most Expensive Bored Ape Yacht Club NFTs*, CRYPTO TIMES (Mar. 30, 2022, 6:02 PM), [www.cryptotimes.io/most-expensive-bored-ape-yacht-club-nfts/](http://www.cryptotimes.io/most-expensive-bored-ape-yacht-club-nfts/) [<https://perma.cc/C2G2-RW7H>].

<sup>5</sup> Scott Reyburn, *JPG File Sells for \$69 Million, as ‘NFT Mania’ Gathers Pace*, N.Y. TIMES (Mar. 25, 2021), [www.nytimes.com/2021/03/11/arts/design/nft-auction-christies-beeple.html](http://www.nytimes.com/2021/03/11/arts/design/nft-auction-christies-beeple.html) [<https://perma.cc/DPB8-SYUK>].

<sup>6</sup> Elizabeth Howcroft, *Twitter Boss Jack Dorsey’s First Tweet Sold for \$2.9 Million as an NFT*, REUTERS (Mar. 22, 2021, 10:50 AM), [www.reuters.com/article/us-twitter-dorsey-nft/twitter-boss-jack-dorseys-first-tweet-sold-for-2-9-million-as-an-nft-idUSKBN2BE2KJ](http://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>].

<sup>7</sup> Clive Thompson, *The Untold Story of the NFT Boom*, N.Y. TIMES MAG. (May 12, 2021), [www.nytimes.com/2021/05/12/magazine/nft-art-crypto.html](http://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 (Mar. 24, 2021), [www.nytimes.com/2021/03/24/technology/nft-column-blockchain.html](http://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).

<sup>8</sup> Langston Thomas, *The 20 Most Expensive NFT Sales of All Time*, NFT NOW (Feb. 21, 2023), <https://nftnow.com/features/most-expensive-nft-sales/#assange-pak-clock> [<https://perma.cc/V38H-SCNH>].

the mid-2010s,<sup>9</sup> the market only caught fire in 2021 and has continued into the early part of 2022.<sup>10</sup>

There has also been 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>11</sup> There is even a move to tokenize real world assets.<sup>12</sup> Mainstream corporate giants such as BNY Mellon<sup>13</sup> and Deloitte<sup>14</sup> have concluded that tokenization has the potential to “disrupt” everything from securities trading<sup>15</sup> to real estate markets.<sup>16</sup> Sotheby’s, Vanguard, and Microsoft all have NFT projects

<sup>9</sup> Josie Thaddeus-Johns, *What Are NFTs, Anyway? One Just Sold for \$69 Million*, N.Y. TIMES (Mar. 11, 2021), [www.nytimes.com/2021/03/11/arts/design/what-is-an-nft.html](https://www.nytimes.com/2021/03/11/arts/design/what-is-an-nft.html) [https://perma.cc/C3NY-G2X5].

<sup>10</sup> *Id.*; Anthony Clarke, *What Remains in the NFT Market Now That the Dust Has Settled?*, COINTELEGRAPH (Oct. 3, 2022), <https://cointelegraph.com/news/what-remains-in-the-nft-market-now-that-the-dust-has-settled> [https://perma.cc/Z5EY-N256].

<sup>11</sup> Cathy Hackl, *Five Things Brands Need to Know about NFTs (Non-Fungible Tokens)*, FORBES (Mar. 4, 2021, 8:13 PM EST), [www.forbes.com/sites/cathyhackl/2021/03/04/four-things-brands-need-to-know-about-nfts-non-fungible-tokens/?sh=5f86139e222f](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].

<sup>12</sup> Bridget van Kralingen, Jesse Lund & Shanker Ramamurthy, *The Digitization of Real-World Assets into Tokens on Blockchain*, IBM INST. FOR BUS. VALUE (Apr. 30, 2018), [www.ibm.com/thought-leadership/institute-business-value/report/tokenassets](https://www.ibm.com/thought-leadership/institute-business-value/report/tokenassets) [https://perma.cc/UU8P-63JZ].

<sup>13</sup> Katy Burne, *Tokens of Appreciation? The Benefits of Digitizing Assets Using Blockchain*, BNY MELLON: AERIAL VIEW MAG. (Feb. 2020), [www.bnymellon.com/us/en/insights/aerial-view-magazine/tokens-of-appreciation.html](https://www.bnymellon.com/us/en/insights/aerial-view-magazine/tokens-of-appreciation.html) [https://perma.cc/6N7M-BXL7]; *Tokenization: Opening Illiquid Assets to Investors*, BNY MELLON INSIGHTS (June 2019), [www.bnymellon.com/emea/en/insights/all-insights/tokenization-opening-illiquid-assets-to-investors.html](https://www.bnymellon.com/emea/en/insights/all-insights/tokenization-opening-illiquid-assets-to-investors.html) [https://perma.cc/2H5M-EQEN].

<sup>14</sup> Patrick Laurent, Sébastien Genco & Allison Izard, *The Tokenization of Assets Is Disrupting the Financial Industry. Are You Ready?*, DELOITTE: INSIDE MAG., Oct. 2018, at 62, [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.”).

<sup>15</sup> Damaris Teacherprenuer, *Tokenizing the Future: How NFTs Could Revolutionize Stocks and Property Ownership*, MEDIUM (Apr. 19, 2023), <https://damarisentrepreneurayala.medium.com/tokenizing-the-future-how-nfts-could-revolutionize-stocks-and-property-ownership-6afc80b18f89> [https://perma.cc/ND7Q-R4YH].

<sup>16</sup> 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), [www.forbes.com/sites/nataliakarayaneva/2021/11/24/real-estate-nfts-how-it-began/?sh=2f3dec4c3b12](https://www.forbes.com/sites/nataliakarayaneva/2021/11/24/real-estate-nfts-how-it-began/?sh=2f3dec4c3b12) [https://perma.cc/XD26-EA65]. 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

in the works for industrial assets, real estate, and securities transactions.<sup>17</sup> The financial giant State Street announced in the summer of 2021 its plan to move “hundreds of its staff” members to a new unit specializing in, among other things, “support for ‘tokenized’ assets.”<sup>18</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) identifiable 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>19</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>20</sup> Typically, buyers pay using some form of cryptocurrency – Ethereum’s ether being particularly popular.<sup>21</sup> The purchaser of the token then ostensibly also owns the underlying asset, or at least that is the whole idea behind tokenization: that the owner of the token acquires authentic title to the reference asset.<sup>22</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>23</sup> That transactions involving tokens happen on the

appraisal of the 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.

<sup>17</sup> J. D. Alois, *Smartlands and Sotheby’s Partner on Tokenized Real Estate Offering in the UK*, CROWDFUND INSIDER (Dec. 20, 2019, 11:59 AM), [www.crowdfundinsider.com/2019/12/155457-smartlands-and-sothebys-partner-on-tokenized-real-estate-offering-in-the-uk/](http://www.crowdfundinsider.com/2019/12/155457-smartlands-and-sothebys-partner-on-tokenized-real-estate-offering-in-the-uk/) [<https://perma.cc/M2VB-T4TD>]; Paddy Baker, *Microsoft Partners with Waves Enterprise to Tokenize Industrial Assets*, COINDESK (Sept. 14, 2021, 2:31 AM PDT), [www.coindesk.com/microsoft-partners-waves-tokenize-industrial-assets/](http://www.coindesk.com/microsoft-partners-waves-tokenize-industrial-assets/) [<https://perma.cc/24X9-XFX8>]; Brian Croce, *Vanguard Concludes First Phase of Blockchain Pilot*, PENSIONS & INVS. (June 11, 2020, 1:44 PM), [www.pionline.com/money-management/vanguard-concludes-first-phase-blockchain-pilot](http://www.pionline.com/money-management/vanguard-concludes-first-phase-blockchain-pilot) [<https://perma.cc/AAJ8-RXM4>].

<sup>18</sup> Chris Anstey, *You Can Tokenize a Building’ in State Street’s New Digital Push*, BLOOMBERG (June 11, 2021, 11:42 AM), [www.bloomberg.com/news/articles/2021-06-11-you-can-tokenize-a-building-in-state-street-s-new-digital-push](http://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>]; Juliet M. Moringiello & Christopher K. Odinet, *Blockchain Real Estate and NFTs*, 64 WM. & MARY L. REV. 1131 (2023).

<sup>19</sup> See Roose, *supra* note 7 (describing his experience minting a token).

<sup>20</sup> E.g., Thompson, *supra* note 7.

<sup>21</sup> Ollie Leech, *How to Make, Buy and Sell NFTs*, COINDESK (Jan. 5, 2022), [www.coindesk.com/how-to-create-buy-sell-nfts](http://www.coindesk.com/how-to-create-buy-sell-nfts) [<https://perma.cc/3PSP-JVRT>].

<sup>22</sup> See Laurent et al., *supra* note 14, at 63; Burne, *supra* note 13 (“Here’s how tokenization works: the digital token references someone’s right to property or delivery of an asset.”); see also Lily Tijoe, *Credit Derivatives: Regulatory Challenges in an Exploding Industry*, 26 ANN. REV. BANKING L. 387, 389 (2007) (defining and giving examples of reference assets).

<sup>23</sup> Laurent et al., *supra* note 14, at 63; see also Burne, *supra* note 13 (“[T]he digital token references someone’s right to property or delivery of an asset.”); see also *Non-Fungible Tokens (NFT)*, ETHEREUM, <https://ethereum.org/en/nft/> (last updated July 25, 2022) [<https://perma.cc/QKQ2-U57Y>] (“NFTs are tokens that we can use to represent ownership of unique items. They let us tokenize things like art, collectibles, even real estate.”).

blockchain and through smart contracts,<sup>24</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>25</sup>

But what is most interesting for purposes of this chapter are the developments surrounding tokens and property rights. Crypto-enthusiasts proclaim that NFTs are the “future of digital property.”<sup>26</sup> Tokens herald a day when “government will lose its unique power to mint currency and protect property.”<sup>27</sup> Self-proclaimed experts on YouTube state that tokens convey ownership,<sup>28</sup> constitute “intellectual property,”<sup>29</sup> and contain “historical ownership data” related to an underlying thing.<sup>30</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 percent of Gen Z investors and 15 percent of Millennials sought financial and investment advice from personalities on the social media platform TikTok.<sup>31</sup> Even some lawyers claim that “nonfungible tokens can be used to represent ownership of all sorts of original digital items.”<sup>32</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>33</sup> In that vein, the promise includes the notion that because tokens are “highly divisible” and have a direct connection to ownership of a tethered thing, individuals can purchase fractional interests in an underlying asset,<sup>34</sup> the entirety of which they may not be able to afford.<sup>35</sup> In this way, tokenization is said to open up investment opportunities, democratizing finance.<sup>36</sup>

<sup>24</sup> Burne, *supra* note 13; Ephrat Livni, *For Rules in Technology, the Challenge Is to Balance Code and Law*, N.Y. TIMES (Nov. 23, 2021), [www.nytimes.com/2021/11/23/business/dealbook/cryptocurrency-code-law-technology.html](https://www.nytimes.com/2021/11/23/business/dealbook/cryptocurrency-code-law-technology.html) [<https://perma.cc/83WL-4FCG>].

<sup>25</sup> Laurent et al., *supra* note 14, at 63.

<sup>26</sup> Thompson, *supra* note 7.

<sup>27</sup> *Id.*

<sup>28</sup> See Johnny Harris, *NFTs, Explained*, YOUTUBE, at 0:55 (Apr. 27, 2021), [www.youtube.com/watch?v=Oz9zw7\\_vhM](https://www.youtube.com/watch?v=Oz9zw7_vhM) [<https://perma.cc/2NV4-PANZ>].

<sup>29</sup> Rhett/Mankind, *What Is an NFT? (Crypto Beginners)*, YOUTUBE, at 1:30 (Oct. 12, 2020), [www.youtube.com/watch?v=a8ww4aNIPOU](https://www.youtube.com/watch?v=a8ww4aNIPOU) [<https://perma.cc/738L-SNEF>].

<sup>30</sup> Marko – WhiteBoard Finance, *What Are NFTs and How Do They Work?*, YOUTUBE, at 2:53 (Mar. 6, 2021), [www.youtube.com/watch?v=LU5Mv4TQEE8](https://www.youtube.com/watch?v=LU5Mv4TQEE8) [<https://perma.cc/RU4L-LZVG>].

<sup>31</sup> 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 EST), [www.wsj.com/articles/tiktok-financial-advice-11619822409](https://www.wsj.com/articles/tiktok-financial-advice-11619822409) [<https://perma.cc/686L-H7BS>].

<sup>32</sup> 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, 25 (2021).

<sup>33</sup> Laurent et al., *supra* note 14, at 63.

<sup>34</sup> *Id.*; see also Aurore Geraud, *Tech vs. Tech: Real Estate NFTs vs. Real Estate Tokenisation*, L’ATELIER BNP PARIBAS (July 1, 2022), <https://atelier.net/insights/tech-real-estate-nfts-tokenisation> [<https://perma.cc/555J-WE8W>].

<sup>35</sup> Laurent et al., *supra* note 14, at 2.

<sup>36</sup> See Burne, *supra* note 13 (promising that tokenization makes the underlying asset “more liquid”).

Due to the tokenization craze,<sup>37</sup> the significant funds being deployed to support the NFT market,<sup>38</sup> and the many assertions (from a variety of directions) about what rights a token holder actually acquires in the underlying thing,<sup>39</sup> it is inevitable that issues about tokenization and property rights will end up before courts.<sup>40</sup> With this prospect, this chapter 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 connected (or, as we say, *tethered*) to the underlying asset, if at all? What does the law – not the hype – have to say about it? These are the issues this chapter explores. This chapter also discusses how the recent revisions to the Uniform Commercial Code, which the American Law Institute and Uniform Law Commission promulgated in 2022<sup>41</sup> to address emerged and emerging technologies, will impact NFT transactions.

### 1.1 TOKENIZATION IN THE LAW

Before one can understand what NFTs are – in other words, what these contemporary tokenizations are really doing – one must understand tokenization as a legal

<sup>37</sup> See David Rothman, *Cashing in on the NFT Craze*, CBS NEWS (July 11, 2021, 9:55 AM), [www.cbsnews.com/news/the-nft-craze-non-fungible-tokens/](https://www.cbsnews.com/news/the-nft-craze-non-fungible-tokens/) [https://perma.cc/J6EC-648E].

<sup>38</sup> Erin Griffith, *From Crypto Art to Trading Cards, Investment Manias Abound*, N.Y. TIMES (Mar. 13, 2021), [www.nytimes.com/2021/03/13/technology/crypto-art-NFTs-trading-cards-investment-manias.html](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.”).

<sup>39</sup> See, e.g., *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.”); see also *Frequently Asked Questions*, MAKERSPLACE <https://makersplace.com/faq/> [https://perma.cc/Y6ME-J4ET]; *NFTs Are Transforming the Digital Art World*, FOUND. (Oct. 13, 2020), <https://foundation.app/blog/nfts-are-transforming-the-digital-art-world> [https://perma.cc/27FP-TYZ7]; Zach of Mintable, *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*, MEDIUM (Apr. 15, 2019), <https://mintable.medium.com/mintable-is-live-7d022b1aaa28> [https://perma.cc/M64Y-EQDL].

<sup>40</sup> Association of American Law Schools, *Webinar Replay: The Art of NFTs*, YOUTUBE, at 9:30–10:32, 14:05–15:47 (June 28, 2021), [www.youtube.com/watch?v=lQMyS5HCvNM](https://www.youtube.com/watch?v=lQMyS5HCvNM) [https://perma.cc/HY6E-5FS6] (quoting crypto- and NFT-industry lawyers Emilio Cazares, Chief Legal Officer for the crypto company SuperRare, and Pamela M. Deese, a partner with the law firm of ArentFox Schiff); *The Art of NFTs*, ASS’N AM. L. SCHS. (June 25, 2021), [www.aals.org/sections/list/art-law/the-art-of-nfts/](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, 4:14 PM EST), <https://time.com/6120878/tarantino-nft-lawsuit/> [https://perma.cc/W23J-ND6Z].

<sup>41</sup> See AM. L. INST. & UNIF. L. COMM’N, A SUMMARY OF THE 2022 AMENDMENTS TO THE UNIFORM COMMERCIAL CODE 2 (2022), [www.ndlegis.gov/files/committees/67-2021/23\\_9335\\_01000appendixb.pdf](https://www.ndlegis.gov/files/committees/67-2021/23_9335_01000appendixb.pdf) [https://perma.cc/6EYY-KFSR] [hereinafter “SUMMARY OF AMENDMENTS”].



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.

There is already law around the idea of tokenization.<sup>42</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 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. 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.

### 1.1.1 *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>43</sup> confer different rights from those conferred by an ordinary contract written on paper. The paper not only evidences a debt owed, but also an easily transferrable and highly liquid debt.<sup>44</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>45</sup>

As 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 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>46</sup>

Negotiable bills of exchange, the precursors to today's checks, emerged in the fourteenth century.<sup>47</sup> The early bill of exchange was a letter addressed from one

<sup>42</sup> See *Token*, BLACK'S LAW DICTIONARY (11th ed. 2019) (A token is "tangible evidence of the existence of a fact.").

<sup>43</sup> See U.C.C. § 3-104 (AM. L. INST. & UNIF. L. COMM'N 2018) (providing form requirements).

<sup>44</sup> See FREDERICK H. MILLER & ALVIN C. HARRELL, *THE LAW OF MODERN PAYMENT SYSTEMS AND NOTES* ¶ 1.3[1][a] (West Academic 2d ed. 2017) (explaining that a holder of a negotiable instrument need only produce an instrument in order to be paid on it).

<sup>45</sup> U.C.C. § 3-301 (AM. L. INST. & UNIF. L. COMM'N 2018); 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").

<sup>46</sup> 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).

<sup>47</sup> W.S. Holdsworth, *Origins and Early History of Negotiable Instruments II*, 31 L.Q. REV. 173, 173 (1915).



party to another directing the addressee to pay a third person a sum of money.<sup>48</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>49</sup> The need 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>50</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 industrialization.<sup>51</sup> As a result, parties in commerce invented their own paper currency substitute based on the bill of exchange.<sup>52</sup> This money substitute came 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>53</sup> This paper, which could pass from hand to hand to pay such debts, supplemented the inadequate money supply.<sup>54</sup>

The large-scale problem that had to be solved to give instruments value as money substitutes was *assignability*.<sup>55</sup> Ancient systems of law did not allow one person to represent another before a tribunal, nor did they allow creditors to assign their rights against their debtor to another person.<sup>56</sup> Since these creditor rights (called *choses in action*<sup>57</sup>) were not assignable at common law, the primary goal of early English negotiable instruments law may have been to make debts assignable.<sup>58</sup> The law's development of a method of assignment, which ensured the right to payment to any person presenting the instrument for payment, supports this notion.<sup>59</sup>

<sup>48</sup> *Id.*

<sup>49</sup> See Read, *supra* note 46, at 447 (explaining legislation prohibiting exportation of “coin of the realm” enacted to thwart the use of counterfeit coin in trade).

<sup>50</sup> 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”).

<sup>51</sup> 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”).

<sup>52</sup> *Id.*

<sup>53</sup> *Id.*

<sup>54</sup> See MILLER & HARRELL, *supra* note 44, ¶ 2.1[1] (noting that paper was used to supplement the money supply).

<sup>55</sup> *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 Avery Webb ed., 6th ed. 1894)).

<sup>56</sup> Holdsworth, *supra* note 47, at 13.

<sup>57</sup> 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).

<sup>58</sup> Rogers, *supra* note 45, at 199.

<sup>59</sup> *Id.* at 199–200.

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>60</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 receive a sum ascertainable 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 acceptable as payment if its value was not easily ascertainable.<sup>61</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>62</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>63</sup>

After resolving the assignment problem, determining priority between obligees became important. Since 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>64</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>65</sup>

An important concept 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>66</sup> This status gives value to the token; a person can buy a payment right and know the value of that right by looking at the token instrument.

### 1.1.2 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

<sup>60</sup> Gilmore, *supra* note 51, at 448.

<sup>61</sup> 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.’”).

<sup>62</sup> See Rogers, *supra* note 45, at 200.

<sup>63</sup> U.C.C. § 3-104 (AM. L. INST. & UNIF. L. COMM’N 2018).

<sup>64</sup> 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 (Matthias Haentjens ed., Oxford University Press 2020); see also Rogers, *supra* note 45, at 222.

<sup>65</sup> *Id.* at 200.

<sup>66</sup> U.C.C. §§ 3-302, 3-305 (AM. L. INST. & UNIF. L. COMM’N 2018).