

Rights in NFTs and the flourishing of NFT marketplaces

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ABSTRACT

As non-fungible tokens (NFTs) become more commonly collected, questions arise as to the rights owned by purchasers of NFTs. Do NFTs fall under the following categories: real or personal properties; securities or commodities; or copyright works? Many scholars have gone into great detail in these respects, but not looked at the NFT marketplaces on which NFTs are purchased. They have argued that rights in NFTs are analogous to rights in property, securities and copyright's exclusive bundle of rights, among other things. In this article, I go further to examine selected marketplaces OpenSea and Rarible's user policies and interfaces, to garner insight on the rights NFT purchasers have. I also examine the latest developments, including cases decided on NFTs, as well as practical developments on the marketplaces, including the introduction of selected licences for NFT projects. Thereafter, I conclude on the rights NFT purchasers hold, the relevance of the copyright system and ultimately, what could support the flourishing of NFT marketplaces.

KEYWORDS: copyright law; property law; securities law; NFTs; non-fungible tokens; Opensea; Rarible; NFT marketplace.

INTRODUCTION

The popularity of nonfungible tokens (NFTs) has grown in recent years and the global market for NFTs has climbed to more than \$40 billion in value, based on the 2021 NFT Market Report issued by a blockchain data company.¹ The more renowned marketplaces for NFTs are platforms like OpenSea, Rarible, Crypto.com, Binance, NFT Launchpad, Nifty Gateway, Mintable, SuperRare, Magic Eden, and X2Y2, among many others.²

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¹ See, eg, David Rodeck, 'Top NFT Marketplaces of 2023' (*Forbes*, 3 January 2023) <www.forbes.com/advisor/investing/cryptocurrency/best-nft-marketplaces/> accessed 11 January 2024.

² See, eg, *ibid*; and Raynor de Best, 'Largest NFT marketplaces based on all-time sales volume in the previous 30 days as of November 29, 2022' (*Statista*, 29 November 2022) <www.statista.com/statistics/1274843/nft-marketplaces-with-highest-volume/> accessed 11 January 2024.

In general, NFTs are data units recorded on digital ledgers called blockchains, pointing to their ownership, of which transactions are executed through smart contracts and traded for with cryptocurrency—each NFT, as a nonfungible cryptographic token, is expected to provide the authentication of ownership to the underlying asset.³ The relevant asset can be anything from artworks, texts, photographs, music, video or audio clips, game avatars, tweets, or even title documents of real life products or real estate.⁴ NFTs have their special functions. For example, in relation to artworks, NFTs allow for: (1) an artist to claim value in his or her original artwork, when digitalized and permanently recorded on a blockchain (as collectibles); and (2) the recapturing of resale value everytime digital artworks are sold since the artists can track the trajectories of their works via blockchains. Without NFTs, digital copies of original artworks can be easily replicated online, therefore eroding the value of the original digital artwork.⁵ With NFTs then, the ‘authentic’ original digital artwork could potentially have a similar kind of financial value such as that assigned to original paintings. An example is of the ‘Nyan Cat’ NFT which sold for as much as US\$590,000 in an online auction.⁶ Other NFT digital artworks can go on to fetch record-breaking value – an instance is that of Beeple’s ‘Everydays: The First 5000 Days’ which sold at the major auction house Christie for around US\$69 million.⁷ It has been highlighted that NFTs were invented to help artists recapture value in the original digital copies of their artworks, through the use of smart contracts which represents a set of promises each, which can include the automatic resale right each time a NFT the artist mints is being resold.⁸

At this juncture, it is worthwhile enquiring what purchasers of NFTs actually own, particularly when many NFT projects have conflated owning NFTs with owning copyrights in them, or even more.⁹ The default rule is that an NFT includes limited rights relating to the underlying asset—if there is nothing else stated to the contrary, a purchaser of an NFT merely acquires a non-exclusive licence to display and use the related media in their token wallet for personal purposes (ie, mainly to sell to prospective buyers when needed).¹⁰ In this respect, it is generally seen that the ownership of NFTs is that of the tokens themselves—there is no ownership conferred of the underlying assets, nor is there any transfer of intellectual property rights associated with the underlying assets.¹¹ Any copyright transfers or licences have to be explicitly covered by contractual clauses.¹² As such, for example, purchasing an NFT does not grant the purchaser the right to print (ie, reproduce) or distribute the work, or any other further right, without the copyright holder’s express permission in specific documentation. Therefore, if the smart contract

³ See, eg, James E. Bedar, Patrick Gilman and David Rosenthal, ‘Tokenization: The Revolution is Now’ (2021) 27 *Westlaw J Derivat* 11, 11.

⁴ See, eg, John McLellan and Anthony Leung, ‘NFT Ownership and Intellectual Property: What Are Your Rights?’ (*Haldanes*, April 2022) <<https://www.haldanes.com/publications/nft-ownership-and-intellectual-property-what-are-your-rights/>> accessed 26 August 2024.

⁵ See, eg, Carol R. Goforth, ‘How Nifty! But are NFTs Securities, Commodities or Something Else?’ (2022) 90 *UMKC L Rev* 775, 779.

⁶ See, eg, Business Insider, *Would you pay US\$590,000 for a meme? Nyan Cat just sold for six figures worth of cryptocurrency, opening the door to even more expensive online NFT art sales* (South China Morning Post, 28 February 2021) <www.scmp.com/magazines/style/tech-design/article/3123302/would-you-pay-us590000-meme-nyan-cat-just-sold-six> accessed 11 January 2024; Diana Seave Greenwald, *Are NFTs Always Bad?* (Foreign Policy, 21 June 2021) <<https://foreignpolicy.com/2021/06/21/nfts-nonfungible-tokens-bad-art-world/>> accessed 11 January 2024.

⁷ Beeple’s opus, Christie’s <www.christies.com/features/Monumental-collage-by-Beeple-is-first-purely-digital-artwork-NFT-to-come-to-auction-11510-7.aspx> accessed 11 January 2024.

⁸ Chen June and Danny Friedman, ‘Jumping from Mother Monkey to Bored Ape: The Value of NFTs from an Artist’s and Intellectual Property Perspective’ (2023) 31 (1) *Asia Pacific Law Review* 100, 102.

⁹ See, eg, James Grimmelman, Yan Ji and Tyler Kell, ‘The tangled truth about NFTs and copyright’ (*The Verge*, 8 June 2022) <www.theverge.com/23139793/nft-crypto-copyright-ownership-primer-cornell-ic3> accessed 11 January 2024.

¹⁰ See, eg, Adarsh Vijayakumaran, ‘NFTs and copyright quandary’ (2021) 23 *JIPITEC* 402, 409.

¹¹ See generally Joao Marinotti, ‘Possessing Intangibles’ (2022) 116 *Nw U L Rev* 1227; Rebecca Carroll, ‘NFTs: The Latest Technology Challenging Copyright Law’s Relevance Within a Decentralized System’ (2022) 32(4) *Fordham Intellect Prop Media Entertainment Law J* 979, 1000 and Goforth (n 5) 779.

¹² Misa Bajcetic, ‘Copyright and non-fungible tokens’ (2022) SSRN <<https://papers.ssrn.com/abstract=4305712>> accessed 12 January 2024.

does not vest with the purchaser the ownership of the asset itself or the copyright ownership, what such purchaser is buying is just the NFT itself and nothing more.¹³ Purchasers of NFTs are said to gain mainly sole access to and control of the smart contracts (via private cryptographic keys) of the respective NFTs stored on blockchains which now record that the purchasers are the registered owners of the NFTs.¹⁴ Indeed, a survey conducted found that few NFT projects and their licences take the necessary steps to align the transfer of copyrights in NFTs with what is legally and commonly understood to pass.¹⁵

This article proceeds as follows. Part I gives an overview of the various characterisations provided by different scholars of the rights that are in NFTs. NFTs have been argued to be analogous to real and personal properties, securities, as well as copyright works by different scholars. In Part II of the article, I analyse the accuracy of these characterizations against what has been observed on leading NFT marketplaces such as OpenSea and Rarible,¹⁶ taking into account the user policies and interfaces of such marketplaces. Thereafter, in Part III, I discuss the latest developments in respect of NFTs, including the latest cases as well as the adoption of varied licences for NFT projects. In Part IV, I re-evaluate what rights purchasers have in NFTs in light of the earlier characterizations and recent developments. Thereafter, I conclude on the relevance of the copyright system and propose what could support the continued flourishing and sustenance of NFT marketplaces.

OVERVIEW OF HOW NFTS HAVE BEEN CHARACTERIZED

Property law perspective

What rights do owners of NFTs actually own? In this respect, the concept of possession in property law is currently understood to apply only to tangible assets, and hence inapplicable to intangible assets.¹⁷ Marinotti explores the possibility of understanding the rights owned in intangibles such as NFTs from a property law perspective.¹⁸ He has argued that intangibles such as NFTs can be governed by property law, through reference to the concepts such as ‘possession’ which is often related mainly to tangible property (i.e., things that are usually physical and that you can touch and identify, such as land and equipment, etc.).¹⁹ According to Marinotti, the true function of possession is communicative and its purpose is to convey the availability of an object discernible to an audience. He argued further that communities can also give this meaning through conduct and symbolic acts.²⁰ The narrower concept ‘thinghood’, on the other hand, is often subsumed within the discussion on possession. Thinghood is defined by whether there are discernible boundaries around one thing to distinguish it from another. Physical tangibility is said to be only one way in which thinghood delineates boundaries; social practices and norms can similarly indicate boundaries.²¹

Marinotti also suggested that property law doctrines like conversion and trespass can be extended to apply to digital assets.²² Even concepts such as the relativity of title (ie, wrongful

¹³ See, eg, Vijayakumaran (n 10) 409.

¹⁴ See, eg, Michael D. Murray, ‘NFT Ownership and Copyrights’ (2023) *Indiana Law Rev* 366.

¹⁵ Many popular NFT projects such as CryptoPunks have been released with no explicitly written copyright terms. See, eg, Grimmelman, Yan and Kell (n 9). An instance is that of the popular NFT project CryptoPunks which has been released with no explicitly written copyright terms.

¹⁶ These are leading NFT marketplaces. See, eg, Bitdeal, ‘Top 7 NFT Marketplaces to look in 2023 and beyond’ (BLOG, 2023) <www.bitdeal.net/top-7-nft-marketplaces-in-2023> accessed 13 January 2024.

¹⁷ See, eg, Marinotti (n 11).

¹⁸ *Ibid.*

¹⁹ *Ibid* 1277.

²⁰ *Ibid* 1236.

²¹ *Ibid.*

²² *Ibid* 1269.

possession can support an interest held by the wrongful possessor which is stronger than that of the world at large, save for the right owner) can arguably apply.²³ While protecting wrongful possession may seem unjust, this could help avoid the scenario of having no legal recourse to an endless series of unlawful conversions of ‘NFTs’ after one single wrongful possession.²⁴ To clarify, Marinotti’s reference to property law concepts drew from both real property and personal property laws, although this was not expressly stated.

Along the same vein, other scholars such as Trautman and Fairfield have also proposed that the legal system should treat NFTs as digital personal property because NFTs comprise strong property interests through enabling parties to buy, sell, or own digital assets similar to personal property.²⁵

On the other hand, some scholars do not agree that NFTs should be defined as properties. Lee, for example, has analogized NFTs with library catalog cards to illustrate that the value of NFTs is derived from their underlying properties (ie, books) and to highlight that people do not own these properties when they transact in NFTs.²⁶ Further, Moringiello and Odinet rejected the perception of any property rights in NFTs—through comparison of their characteristics with those of negotiable instruments, securities, deeds of real property, bills of lading and other legal tokens—reasoning that NFTs lack the tethering effect that other properties have and that it is meaningless to view them as such, thus NFT holders do not control anything substantive.²⁷

Securities or commodities?

There have been discussions around the need to regulate NFTs and whether NFTs could be classified as securities.²⁸ As of now, NFTs are not typically subject to financial regulation as an asset class. For instance, there is no express representation of a cryptoasset or NFT under the current securities legislation in the USA which includes definitions of what is included as securities.²⁹ In other jurisdictions such as in the European Union and in Singapore, in part due to the nonfungibility of most NFTs, NFTs cannot be regulated as a class of crypto assets, including as digital payment tokens.³⁰ Notwithstanding this challenge in classifying NFTs as securities, the question as to whether NFTs are regulated as investment contracts has been analyzed under the general framework in the US, in *Securities Exchange Commission (SEC) v W.J. Howey Co* (Howey).³¹ It was discussed in this case that an investment contract is a transaction or scheme where purchasers are led to invest money in a common enterprise with the expectation that they would earn a profit solely through the efforts of the promoter or someone other than themselves.³²

²³ Ibid 1239.

²⁴ Ibid 1240.

²⁵ See, eg, Joshua Fairfield, ‘Tokenized: The Law of Non-Fungible Tokens and Unique Digital Property’ 97 Ind. L. J. 1268, 1292; Lawrence J. Trautman, ‘Virtual Art and Non-Fungible Tokens’ (2022) 50 Hofstra L. Rev. 361, 412–18. See also Runhua Wang, Jyh-An Lee and Jingwen Liu, ‘Thriving NFTs in the Shadow of IP Law’ 61 (1) Am Busin Law J 31, 38.

²⁶ See Edward Lee, Episode 3 NFT Myth Busting Buying an NFT is NOT Buying the Art, YouTube (19 October 2021) <www.youtube.com> accessed 3 February 2024.

²⁷ Juliet M. Moringiello and Christopher K. Odinet, ‘The Property Law of Tokens’ (2022) 74 Fla L Rev 607, 641–43.

²⁸ See, eg, Ben Chester Cheong, ‘Application of Blockchain-enabled technology: Regulating NFTs in Singapore’ (January 2022) <<https://lawgazette.com.sg/feature/application-of-blockchain-enabled-technology-nfts/>> accessed 15 January 2024; Goforth (n 5).

²⁹ Securities Act of 1933, 15 U.S.C. § 77a and Securities Exchange Act of 1934, 15 U.S.C. § 78.

³⁰ NFTs are also not regulated as crypto assets under the European Union’s Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets and amending Directive (EU) 2019/1937 (MiCAR regulation). In the United Kingdom (UK), there are no specific regulations for NFTs as a category of crypto-asset, henceforth it remains unregulated, unlike e-money tokens or security tokens. In Singapore, NFTs are also not regulated as an asset class, including as digital payment tokens under Singapore’s Payment Services Act 2019. See, eg, Sunny J, Kumar and others, ‘The NFT Collection: A Brave NFT World – A Regulatory Review of NFTs (Part 2) (30 June 2022) <www.natlawreview.com/article/nft-collection-brave-nft-world-regulatory-review-nfts-part-2> accessed 17 January 2024. See also Cheong (n 28).

³¹ *SEC v. W.J. Howey Co.*, 328 U.S. 293 (1946) (*SEC v Howey*).

³² Ibid 298.

In the case of NFTs of which underlying assets are artworks or otherwise valuable collectibles, it has been argued that such NFTs are not securities—the reason provided is that these NFTs are finished products whose value is determined at a sale made to a buyer, and that there is no expectation or need for third parties to extend managerial efforts for the NFTs to maintain or appreciate in value.³³ Although a NFT can increase in value, it is not a security because its price appreciation resulting from external market forces such as general inflationary trends impacting the supply and demand for an underlying asset does not qualify as a ‘profit’ under the Howey investment contract test as mentioned above (ie, an interest in a NFT will be classified as an investment contract if it is seen as an investment of money or something of value in a common project, where the purchaser of such interest expects to receive profits through the entrepreneurial efforts of others).³⁴ The last limb of the Howey test under the Securities Act is therefore not satisfied, as any appreciation in price of a NFT is seen to result from general inflation and not through efforts of individuals.³⁵ Indeed, Goforth has noted that it is not likely that NFTs—particularly those which are accompanied by exclusive licences or transfers of intellectual property rights in the underlying digital assets (and where the purchase is for personal enjoyment)—will meet all four elements of the test.³⁶ On the other hand, where multiple purchasers acquire non-exclusive licences and limited rights in the underlying assets to the NFTs, and specifically where the promoter or creator works to increase the increase in and the value of the creator’s work, motivating purchasers with the hope that the NFTs linked to a creator’s works will increase in value, Goforth has argued that there will be room for the SEC to conclude that such NFTs are securities.³⁷

There are regulatory implications around classifying NFTs as securities under the financial laws of different jurisdictions. For example, every sale of a NFT token would need to be registered or exempt from registration under US securities laws; moreover, platforms dealing in the tokens would be required to register as a securities exchanges, alternative trading systems or broker-dealers.³⁸ That NFTs may be categorized as securities has been affirmed by the recent SEC finding that the NFTs offered and sold to investors by Impact Theory, LLC (Impact Theory) were investment contracts and therefore securities.³⁹ Thus, in this recent decision, the SEC issued an order fining Impact Theory US\$6.1 million for violating the federal securities laws by conducting an unregistered offering of crypto asset securities in the form of NFTs that was not otherwise exempt from registration.⁴⁰ Similarly, in the UK and other jurisdictions, if NFTs were securities, they would need to be regulated by the relevant authorities, such as the Financial Conduct Authority (FCA) in the UK.⁴¹

In recent times, more NFT projects are marketed as investments which can reward holders with appreciation, profit or dividends—notably, marketing NFTs in this manner is suggested to transform NFTs into securities.⁴² A parallel has been drawn to the *Gary Plastic Packaging v.*

³³ Stephen P. Wink, Miles P. Jennings, Shaun Musuka and Deric Behar, ‘Latham & Watkins Discusses Whether NFTs are Securities’ (*The CLD Blue Sky Blog*, 19 March 2021) <<https://clsbluesky.law.columbia.edu/2021/03/19/latham-watkins-discusses-whether-nfts-are-securities/>> accessed 11 January 2024.

³⁴ See, eg, *ibid*; Goforth (n 5) 783.

³⁵ *Ibid* 790.

³⁶ *Ibid*.

³⁷ *Ibid*.

³⁸ Wink and others (n 33).

³⁹ U.S. Securities and Exchange Commission, ‘SEC Charges LA-Based Media and Entertainment Co. Impact Theory for Unregistered Offering of NFTs’ (*Press Release*, 28 August 2023) <www.sec.gov/news/press-release/2023-163> accessed 15 January 2024; U.S. Securities and Exchange Commission, *In the Matter of Impact Theory, LLC* (File No. 3-21585, 28 August 2023) (*SEC v Impact Theory*).

⁴⁰ *Ibid*.

⁴¹ See, eg, Lauren Rapeport, ‘Non-fungible tokens: at the UK legal and tax frontier’ (*WithersWorldWide*, 31 March 2021) <www.withersworldwide.com/en-gb/insight/read/nfts-at-the-uk-legal-and-tax-frontier> accessed 17 January 2024.

⁴² Winks and others (n 33).

*Merrill Lynch, Pierce, Fenner & Smith, Inc.*⁴³ case where a secondary market for the instruments was promoted.⁴⁴ In view of this, to avoid having NFTs classified as securities, issuers have to avoid employing sponsors or third parties to drive the NFTs' appreciation through marketing efforts, or to give buyers of NFTs the expectation of capital appreciation of their NFTs as a result of the creator's or any third party's efforts.⁴⁵ As mentioned earlier, where the creators or promoters of NFTs work to enhance the value of the NFTs and purchasers are motivated by the potential for appreciation, NFTs can be seen as securities.⁴⁶ Henceforth, in these times, there may be more blurring of the lines between NFTs categorized as securities and as non-securities.⁴⁷

Moreover, it has been suggested that if there is fractionalization of NFTs and fractional parts of NFTs (or F-NFTs) are being issued, such NFTs are more likely to be nonunique and to have the quality of fungibility. With fractional ownership possible, there is additional liquidity which allows users to trade in shares of high value assets. In these cases, the offering of these F-NFTs may more likely be seen as securities subject to securities regulations in various jurisdictions.⁴⁸ In this respect, the US SEC Commissioner Hester Pierce has warned that the issuance of F-NFTs could qualify as investment contracts under US securities legislation.⁴⁹

On a separate note, Goforth has also considered whether NFTs can be seen as commodities since they have value, can be sold and converted into other currencies.⁵⁰ If this is seen to be the case, a regulatory body such as the Commodities Futures Trading Commission (CFTC) in the USA and its equivalent in other countries would have jurisdiction over fraud related to NFTs. Based on cases decided in this aspect, there is generally no need to prove that futures are traded in specific types of assets for them to be classified as commodities, so long as they are deemed lumped with assets seen to be commodities.⁵¹ At the moment, because NFTs and fungible cryptoassets are observed to work differently, it is not clear whether NFTs will be lumped with fungible crypto assets (ie, virtual currencies like Bitcoin and Ethereum) which are currently regulated as commodities or treated as distinct from them.⁵² If the latter, the CFTC would not have authority or jurisdiction over fraud related to NFTs.⁵³ In the UK, NFTs are not explicitly classified as commodities and thus are likely to fall outside regulation in this aspect. There are, however, anti-money laundering (AML) requirements related to crypto assets incorporated into national law which raises money-laundering compliance considerations⁵⁴ in respect of NFT sales.

Copyright perspective

Which rights within copyright's bundle of rights are acquired in NFTs when there are purchased? Is copyright protection conferred on the underlying asset, the digital copy or the NFT token? These questions are crucial and yet are often not expressly considered.

⁴³ *Gary Plastic Packaging v. Merrill Lynch, Pierce, Fenner & Smith Inc.*, 756 F.2d 230, 240-41 (2d Cir. 1985).

⁴⁴ Winks and others (n 33).

⁴⁵ Ibid.

⁴⁶ Ibid.

⁴⁷ For example, NFTs such as the Bored Ape Yacht Club (BAYC) and Mutant Ape Yacht Club (MAYC) NFTs may well satisfy all four limbs of the Howey investment contract test.

⁴⁸ This includes, among others, the securities legislation in the US (n 29) as mentioned earlier, the regulations enforced by the Financial Conduct Authority (FCA) in the UK under legislation including the National Security and Investment Act 2021 and the Financial Services and Markets Act 2000, as well as the regulations capital market products are subject to under the Securities and Futures Act (Cap 289, 2006 Rev Ed), s 2(1) in Singapore. On this note, the issuance of F-NFTs could qualify as investments contracts under US securities legislation. See, eg, Cheong (n 28).

⁴⁹ See, eg, Samuel Haig, 'SEC's 'Crypto Mom' warns selling fractionalized NFTs could break the law' (26 March 2021) <<https://cointelgraph.com/news/sec-s-crypto-mom-warns-selling-fractionalized-nfts-could-break-the-law>> accessed 15 January 2024.

⁵⁰ Goforth (n 5) 793.

⁵¹ See, eg, *United States v. Brooks*, 681 F. 3d 678 (5th Cir. 2012); *United States v. Futch*, 278F. App'x 378, 395 (5th Cir. 2008); and more recently, *CFTC v. My Big Coin Pay, Inc.*, 334 F. Supp. 3d 492 (D. Mass. 2018).

⁵² See, eg, Goforth (n 5) 794.

⁵³ Ibid.

⁵⁴ See, eg, Money Laundering and Terrorist Financing (Amendment) Regulations 2019 in the UK.

Earlier scholarship has considered copyright considerations in relation to NFTs.⁵⁵ A NFT per se is essentially data on a blockchain that does not fall under the existing criteria for copyright protection (ie, independent creation by the author and the exercise of creativity) since the data is randomly assigned.⁵⁶ Being merely a cryptographic token that represents proof of ownership of the token itself, the work, the copyright of the work or even a combination of these, an NFT on its own is not copyright protectable unless there a minimal amount of creativity within it is shown along with originality and fixation.⁵⁷ The digital copies and underlying assets can, however, be assessed for meeting the usual criteria for copyright protection including, among other things, originality, authorship, and fixation. For example, if they are art works, photographs, or music, etc., they are likely to be copyright protected. NFTs can, however, be of anything, even of assets that may not be copyright protected.

Therefore, purchasers of NFTs are not really owners or holders of copyrights in the conventional sense. Whether such purchasers receive exclusive copyrights or some extent of such rights within the bundle is subject to the respective licensing agreements under the relevant projects. Where the licensing agreements enforced via smart contracts do not explicitly address the transfer of rights, the respective creators of the relevant NFT tokens, the digital copies or the underlying assets (as the case may be) may retain important exclusive rights (such as the rights of reproduction and distribution), just as he or she had before the purchase of such NFT. In some cases, however, such as in the case of the Bored Ape Yacht Club (BAYC) NFT sold by Yuga Labs, the underlying copyright work is purchased together with the NFT token and the right to prepare a derivative work is explicitly included in the purchase.⁵⁸

That said, the first sale (or exhaustion) doctrine arguably does not apply to NFT tokens (or the relevant digital copies of underlying assets which are copyright protected) since the copyright holders can opt to control the subsequent resales of the NFTs through the incorporation of smart contracts in the NFTs.⁵⁹ Indeed, in recognition of the *droit de suite* right (or author's right) in civil law jurisdictions,⁶⁰ a percentage from secondary sales can still be paid to the relevant copyright holder (not NFT holder) as royalties every time there is a resale of a NFT on many NFT marketplaces such as OpenSea and Rarible.⁶¹ As marketplaces such as x2y2 are preferred by some in the NFT community given that royalties paid to creators are optional,⁶² OpenSea has considered operating its platform similarly—as of today, creators can specify their desired royalty percentage and can choose to set this percentage to be zero. Eliminating royalties paid to creators would be in greater alignment with the copyright tradition from common law jurisdictions that has principles based on utilitarianism and focused transactions, rather than that of civil law jurisdictions centred around the inalienable bond between the work and author.⁶³

Beyond the types of rights acquired in NFTs by purchasers, there are other concerns around copyright ownership, in particular, whether the minting of a copyright protected work or a transaction relating to a NFT constitutes copyright infringement.

⁵⁵ See, eg, Fairfield (n 25) 1261; Goforth (n 5); Marinotti (n 11); and Carroll (n 11).

⁵⁶ See, eg, Miles Jennings and Chris Dixon, 'The Can't Be Evil NFT Licences' (31 August 2022) <<https://a16zcrypto.com/posts/article/introducing-nft-licenses/>> accessed 17 January 2024.

⁵⁷ See, eg, Adarsh Vijayakumaran, 'NFTs and copyright quandary' (2021) 23 JIPITEC 402, 410.

⁵⁸ See, eg, Edward Lee, 'The Bored Ape Business Model: Decentralized Collaboration via Blockchain and NFTs' (November 15, 2021) <<https://ssrn.com/abstract=3963881>> accessed 8 January 2024.

⁵⁹ See, eg, *Capitol Records, LLC v. ReDigi Inc.*, 934 F. Supp. 2d 640 (S.D.N.Y. 2013); *Capitol Records, LLC v. ReDigi Inc.*, No. 16-2321 (2d Cir. 2018). See also Chen and Friedman (n 8) 126.

⁶⁰ As an implementation of Directive 2001/84/EC of the European Parliament and of the Council of 27 September 2001 on the resale right for the benefit of the author of an original work of art, OJ L 272, 13.10.2001, p. 32-36.

⁶¹ OpenSea, <opensea.io> and Rarible, <rarible.com> accessed 17 January 2024.

⁶² See, eg, X2Y2, 'Buy, sell, and lend your NFTs' <<https://x2y2.io/>> accessed 6 February 2024.

⁶³ See, eg, Chen and Friedman (n 8) 131.

Infringement as a result of unauthorized creation of NFT tokens

In line with the above analysis, the potential for copyright infringement does not exist in relation to the token itself, but instead to the digital copy or the underlying asset that the token represents.⁶⁴ NFTs that are created to represent assets typically contain hyperlinks so that interested parties can see what the underlying assets are.⁶⁵ Previous rulings of the European Court of Justice indicate that such hyperlinking to copyright protected material could constitute an act of communication to the public.⁶⁶ In the context of NFTs issued commercially then, there could be copyright infringement if the hyperlinks lead to copyright infringing material. Thus it has been suggested that issuers of commercially launched NFTs are obliged to verify whether their NFTs are hyperlinked to copyright infringing content.⁶⁷

For instance, in relation to the creation of NFTs, one issue is that people who are not the original copyright holders of the underlying digital copies or tangible assets can mint them into NFT tokens although they do not have the rights to do so. Copyright infringement is rampant, as there are opportunists who have taken to turning others' works into NFTs. As works can be arbitrarily tokenized without any basis, one might find NFTs of famous paintings like Da Vinci's 'Mona Lisa' being issued by individuals that have no connection to the Louvre museum.⁶⁸ It should be noted that before there were NFTs, few contractual agreements would anticipate addressing this, and this therefore depends on how the contractual clauses are interpreted. It has been suggested that when an artist or creator could not have anticipated upfront signing away the specific use to create NFTs from existing works at the time an agreement was entered into, the scope of the transfer should not include the right to mint works into NFTs.⁶⁹ A more pro-creator interpretation should arguably be taken.

Difficulty enforcing against infringement

In relation to enforcement against infringement, the use of pseudonyms and online addresses on NFT platforms makes it hard to identify parties and infringers. Even if you can bring a claim against the pseudonym, the person behind such pseudonym may not be readily identified. The notice and takedown mechanism under the US *Digital Millennium Copyright Act* (DMCA)⁷⁰ available on NFT marketplaces like OpenSea and Rarible could be insufficient, as the pseudonymity and anonymity for both purchasers and sellers of NFTs may render it daunting for the copyright holders of underlying copyright protected works (such as art works) the NFTs are linked to, to initiate viable claims against infringers. The details shown such as the contact addresses, token identities, etc., do not help identify the buyers and sellers more specifically.

Moreover, with multiple marketplaces for NFTs and the seller's ability to list the NFT tokens of the same underlying assets (for instance, art works) across many platforms, it is much more difficult for the original creator to discover all infringing uses. For example, in 2021, an infringer posing as Banksy sold NFT artworks close to a million—while he was blocked by the platform OpenSea, he managed to keep the profits made across other NFT platforms.⁷¹

⁶⁴ See, eg, Bajcetic (n 12).

⁶⁵ See, eg, *ibid.*

⁶⁶ See, eg, *Nils Svensson and Others v Retriever Sverige AB* (Case C-466/12, CLI:EU:C:2014:76), para 24, where an act of communication directed to a new public not taken into account by copyright holders constituted copyright infringement; and *GS Media BV v Sanoma Media Netherlands BV and Others* (Case C-160/15, ECLI:EU:C:2016:644), paras 49 and 51, where it was determined that it can be expected that an individual posting a link for profit should determine earlier whether the link leads to copyright infringing material.

⁶⁷ See, eg, Bagcetic (n 12).

⁶⁸ *Ibid.*

⁶⁹ See, eg, Carroll (n 11) 990.

⁷⁰ US *Digital Millennium Copyright Act* 17 U.S.C. § 512, *Pub. L. No. 105-304, 112 Stat. 2860 (1998)* (DMCA).

⁷¹ See, eg, Anny Shaw, 'Banksy-style NFTs have sold for \$900,000 – but are they the real deal and does it even matter?' (22 February 2021) <www.theartnewspaper.com/2021/02/22/banksy-style-nfts-have-sold-for-dollar900000but-are-they-the-real-deal-and-does-it-even-matter> accessed 7 February 2024.

MARKETPLACE USER POLICIES AND INTERFACES

In this section, I examine how selected NFT marketplaces such as OpenSea and Rarible have addressed or failed to address the rights creators and purchasers have in NFT tokens, under their user policies and interfaces that users interact with. I choose to discuss OpenSea—one of many peer to peer marketplaces that helps users discover NFTs available on public blockchains and to directly interact with each other in relation to transacting in NFTs—since it is currently the largest and most comprehensive NFT platform internationally. Further, as of January 2024, it has over 1 million users. I also selected Rarible as a second NFT platform to discuss as a point of comparison, given that it is also seen to be one of the main NFT marketplaces, alongside OpenSea.⁷²

User policies

Under Clause 1 of OpenSea’s terms of service (OpenSea TOS), OpenSea makes it clear that it is not a party to agreements between users, OpenSea is simply a marketplace.⁷³ What this means is that OpenSea does not have control over the NFTs or blockchains as it does not execute or effectuate purchases, transfers, or sales of NFTs. Thus, users bear the full responsibility for verifying the legitimacy and authenticity of NFTs that they purchase on OpenSea. Similarly, under Rarible’s terms of service (Rarible TOS), Rarible disclaims responsibility for NFTs and expressly states that it cannot guarantee the authenticity, originality, uniqueness, legality or value of NFTs.⁷⁴

In respect of ownership, under the OpenSea TOS, all other trademarks or product names contained in content linked to or associated with NFTs displayed are stated to be the property of their respective owners and may not be copied or used without the permission of the applicable intellectual property rights holders. It is further clarified that OpenSea does not have the ownership, custody or control of the NFTs, or even the smart contracts deployed, and further that the creators of these NFTs and smart contracts are fully responsible for their operation.⁷⁵ Under the Rarible TOS, Rarible expressly states that it makes no representations or warranties on the ownership of content found on Rarible and is henceforth not liable for losses from the purchase of content, misrepresentations and the like.⁷⁶ In this sense, both OpenSea and Rarible have attempted to absolve themselves under their user policies from the responsibility to verify the ownership of the NFT tokens, digital copies and the underlying assets.

Users of OpenSea and Rarible also grant to both marketplaces worldwide, nonexclusive, sub-licensable, royalty-free licence to use, copy, modify and display any content including any digital file, art, or material linked to any NFTs that they post for the purposes of the provision and promotion of their services.⁷⁷ Further, users have to represent and warrant that they have the rights, licences, consent, etc., to grant the rights for any content they create and display on both OpenSea and Rarible, and also that the content shared is not subject to copyright or other intellectual property rights, unless they have the necessary consent.⁷⁸ Through the DMCA notice and takedown mechanism, OpenSea and Rarible can remove content in response to notifications received of copyright infringement (or other intellectual property infringement claims) and can terminate access of users found to be repeat infringers.⁷⁹ On the other hand,

⁷² See, eg, Jason Wise, ‘OpenSea Statistics 2024: Users, Revenue & Market Size’ (8 April 2023) <<https://earthweb.com/opensea-statistics/>> accessed 20 January 2024; Rodeck (n 1).

⁷³ OpenSea, Terms of Service (4 April 2023) <<https://opensea.io/tos>> accessed 22 January 2024 (OpenSea TOS).

⁷⁴ Rarible, Terms of Service (5 December 2022) <<https://static.rarible.com/terms.pdf>> accessed 22 January 2024 (Rarible TOS), cl 13.

⁷⁵ OpenSea TOS (n 73) cl 3.

⁷⁶ Rarible TOS (n 74) cl 7.6.

⁷⁷ OpenSea TOS (n 73) cl 7; and Rarible TOS (n 74) cl 7.2.

⁷⁸ OpenSea TOS (n 73) cl 7; and Rarible TOS (n 74) cl 7.5.

⁷⁹ OpenSea TOS (n 73) cl 7; and Rarible TOS (n 74) cl 8.

when users access content as part of their use of OpenSea and Rarible, both marketplaces grant them the noncommercial, personal, nonsublicensable, nontransferable, and nonexclusive rights and licences to access and display the content provided as part of their services.⁸⁰ In addition, under the OpenSea TOS, it is expressly stated that a user's licence to content linked to any NFT is solely as set forth by the relevant creator or vendor of such NFT.⁸¹ As can be seen, copyright laws have limited relevance when purchasers buy NFTs, since it all comes down to the rights specified in the smart contracts set by the creators of the particular NFT projects in the first place.

Both marketplaces discuss the assumption of risk by users, as well as limit their liabilities under their user policies. OpenSea highlights the risks associated with purchasing NFTs through peer to peer transactions, including the risk of purchasing counterfeit items, items that become untransferable, and warns users that they need to do sufficient research before selling, buying, or otherwise interacting with NFTs.⁸² It also expressly reminds users that the regulatory regime governing blockchains, NFTs, and other crypto-based items is uncertain and that new policies can affect the development of its service and the utility of NFTs.⁸³ Further, OpenSea excludes its liability for losses incurred from the use of its service and limits its liability, where applicable at all, to the greater of \$100 or the amount received by OpenSea for its service.⁸⁴ Similarly, Rarible has clauses that address the assumption of risk by users and exclude its liability to users.⁸⁵

User interfaces

Here, I consider how marketplaces like OpenSea and Rarible are set up and in particular, the site interfaces users on these platforms interact with.

It is extremely accessible and easy for anyone to create NFTs, and this alone can be done for free on both OpenSea and Rarible. To do so, users simply need to have wallets which support the Ethereum or other recognised blockchains, such as a Metamask or Coinbase wallet. All users have to do is to connect their wallets to the respective marketplaces, upload the relevant NFTs, add further details such as the descriptions for the NFTs, and thereafter to click on the 'Create' button to mint such NFTs into their wallets. From then on, the NFTs can be listed on the marketplaces where important details such as the prices and expiration dates can be indicated.⁸⁶ 'Gas fees' will, however, be charged for listing or selling the NFTs, as there are costs around processing transactions on the various networks such as the Ethereum network.⁸⁷ These fees can be paid either when the NFTs are minted (by creators) and/or sold (by purchasers). As of now, both marketplaces charge 2.5% service fee for each sale of a NFT.⁸⁸

Since August 2023, OpenSea has made creator fees optional, and such royalty payments can go up to a maximum of 10% of the sale price of each NFT sold if specified.⁸⁹ The royalties are a commission earned by the original creator of a NFT on all secondary sales of his or her work,

⁸⁰ OpenSea TOS (n 73) cl 4; and Rarible TOS (n 74) cl 5.

⁸¹ OpenSea TOS (n 73) cl 4.

⁸² OpenSea TOS (n 73) cl 12.

⁸³ *Ibid.*

⁸⁴ *Ibid* cl 13.

⁸⁵ Rarible TOS (n 74) cls 7 and 13.

⁸⁶ See, eg, Ameer Rosic, 'How to create an NFT on OpenSea: Free step-by-step guide' (17 November 2023) <<https://blockgeeks.com/guides/how-to-create-an-nft-on-opensea-free-step-by-step-guide/>>; Rarible, 'Your ultimate guide to getting started with NFTs on Rarible' (22 June 2022) <<https://rarible.com/blog/ultimate-starting-guide/>>; and OpenSea, 'How do I create an NFT' <<https://support.opensea.io/hc/en-us/articles/360063498313-How-do-I-create-an-NFT>> all accessed 24 January 2024.

⁸⁷ *Ibid.*

⁸⁸ *Ibid.*

⁸⁹ See, eg, Devin Finzer, 'Changes to creator fees on OpenSea' (17 August 2023) <<https://opensea.io/blog/articles/creator-fees-update>>; and Andrey Sergeenkov, 'OpenSea vs. Rarible: Which is the better NFT marketplace?' (23 August 2022) <<https://www.coindesk.com/learn/opensea-vs-rarible-which-is-the-better-nft-marketplace/>> accessed 24 January 2024.

and are paid everytime a NFT moves from wallet to wallet. On Rarible, these royalty payments are compulsory and Rarible allows creators to set fees up to as high as 50% of the sale price.⁹⁰

On both the OpenSea and Rarible marketplaces, once a user's cryptocurrency wallet is connected to the relevant platform, it is easy to click on the 'Buy Now' button to purchase NFTs for sale.⁹¹ As such, the onus lies on NFT purchasers to visit the project websites to read more about the rights they are purchasing when they buy the NFTs, as what is licenced and permissible specifically vary per collection. The licences of the NFTs purchasers are buying are not readily available for review on the marketplaces. In this sense, NFT purchasers are arguably 'nudged', via site interfaces,⁹² to make quick decisions with their purchases, and the responsibility to do the due diligence rests on them. This position is consistent with the user policies discussed earlier, which state that purchasers bear responsibility for verifying the legitimacy, authenticity and legality of the NFTs purchased.⁹³

While many NFT marketplaces including OpenSea and Rarible now have some form of verification process that lets the minter identify him or herself before a work can be minted, the reliability of these procedures in place to ensure that sellers verify their identities prior to listing the NFTs for sale vary.⁹⁴ On OpenSea, a user intending to list NFTs for sale can apply for account verification provided he or she can demonstrate satisfaction of minimum activity levels and social presence. Upon verification, there will be a blue checkmark beside his or her profile and any collection listed. The blue mark indicates that the account has been verified by OpenSea or that the collection belongs to a verified account and has significant interest or sales, as the case may be.⁹⁵ On Rarible, the verification checkmark is yellow in colour but it is an indication of similar qualities as on OpenSea. Verified accounts get more visibility on the platform as they appear in the search results, explore feeds and leaderboards. For now, on Rarible, what is required is a brief profile linked to other social media profiles, ownership of several NFTS created by other users, some works in progress, a story about the poster and what is offered for sale.⁹⁶ These requirements appear easy to satisfy.

The ease of creating and selling NFTs, as well as buying them, on the examined platforms amplify the opportunities for copyright infringement. Notwithstanding that the NFT marketplaces discussed have expressly limited their liabilities under their user policies, there is room to impose greater responsibilities on these marketplaces which profit from their users' trades in NFTs. Arguably, conducting more thorough copyright checks can reduce the occurrence of infringement on such platforms, while mandating actual name registration and hence removing the pseudonymity of users on NFT marketplaces could help overcome challenges around enforcing against infringement. These practices and requirements could be adopted by marketplaces in their fulfillment of such responsibilities towards users of their platforms and the NFT ecosystem in general.

⁹⁰ Rarible, 'How to get the royalties you deserve on Rarible' (22 August 2023) <<https://rarible.com/blog/get-royalties/>> accessed 24 January 2024.

⁹¹ OpenSea, 'How do I buy NFTs with a credit or debit card?' <<https://support.opensea.io/hc/en-us/articles/4413380935187-How-do-I-buy-NFTs-with-a-credit-or-debit-card->>; and Rarible, 'How do I purchase an NFT?' <<https://help.rarible.com/hc/en-us/articles/10459890828429-How-do-I-purchase-an-NFT->> accessed 25 January 2024.

⁹² See generally, Corinne Tan, *Regulating Content on Social Media: Copyright, Terms of Service and Technological Services* (UCL Press, 2018), where Lessig's theory is adapted for the purpose of demonstrating that user behaviour on social media is influenced by social media's technological architecture and terms of service, alongside with laws and social norms; and Richard H. Thaler and Cass R. Sunstein, *Nudge: Improving Decisions about Health, Wealth and Happiness* (Penguin Books, 2008).

⁹³ OpenSea TOS (n 73) cl 5; and Rarible TOS (n 74) cl 13.1.

⁹⁴ See, eg, Bijan Stephen, 'NFT mania is here, and so are the scammers' (*The Verge*, 20 March 2021) <<https://www.theverge.com/2021/3/20/22334527/nft-scams-artists-opensea-rarible-marble-cards-fraud-art>> accessed 27 January 2024.

⁹⁵ OpenSea, Help Center: What is a verified account or badged collection? <<https://support.opensea.io/hc/en-us/articles/360063519133-What-is-a-verified-account-or-badged-collection>> accessed 8 February 2024.

⁹⁶ Rarible Blog, 'Verification on Rarible, Demystified' (11 April 2021) <<https://rarible.com/blog/verification-on-rarible--demystified/>> accessed 8 February 2024.

RECENT DEVELOPMENTS AND IMPLICATIONS

In this section, I consider the latest developments around NFTs, and juxtapose this in light of the rights scholars have analogized rights in NFTs to.

Property rights in NFTs

Translating Marinotti's concepts of possession and thinghood⁹⁷ to what I understand of NFTs on the platforms such as OpenSea and Rarible examined, the NFTs traded are discernible as distinct tokens for purchase. Furthermore, although NFTs are in the digital space and less physically tangible, if one considers the practices of the NFT community on marketplaces like OpenSea and Rarible and looks at the information that is publicly available to would-be buyers of NFTs, the concepts of possession and even thinghood can arguably be comfortably extended to cover NFTs, as they are currently presented on NFT marketplaces. Taking the examples of OpenSea and Rarible, one can observe possession in the sense that one knows the identity of the owner of a NFT, by way of the owner's representative unique blockchain address. Furthermore, through being the owner of an NFT, there is some control over NFT by way of a record on a blockchain. The owner of a specific NFT would generally intend to maintain control to the exclusion of others until the relevant NFT is sold. He or she can then transfer the NFT token to another wallet. If the ownership of NFTs is accepted as communicating possession of properties on NFT marketplaces such as OpenSea and Rarible, such marketplaces will arguably develop to become more stable and predictable, since rights and liabilities are imposed only as expected. The following recent decisions in UK and in Singapore affirm the recognition of property rights in NFTs.

In 2022, for the first time, the UK High Court ruled that NFTs are recognized as legal property in and of themselves (distinct from the underlying assets they represent) and granted an injunction in respect of misappropriated NFTs.⁹⁸ In this case, the plaintiff owner Lavinia Osbourne—whose two NFTs from the Boss Beauties collection have been stolen—successfully obtained injunctions to freeze the stolen NFTs and a disclosure compelling OpenSea to send information about the two account holders in possession of the stolen NFTs.⁹⁹ It was argued that the nature of NFTs meet the definition of property¹⁰⁰ in that they are: definable (with reference to the underlying smart contracts); identifiable on the blockchain; capable in their nature of assumption by third parties who acquire them and the associated underlying rights defined in the smart contracts; and have some degree of 'permanence', notwithstanding the decentralized technology that NFTs utilize. The decision removed uncertainty that NFT tokens (comprising code) can be seen as property in the UK and would allow victims whose NFTs have been stolen to obtain court injunctions against crypto wallets identified as carrying stolen NFTs, as well as the NFT platforms on which the NFTs are being sold.¹⁰¹

In Asia, the proprietary rights in NFTs appear to be similarly recognized by the recent Singapore High Court case *Janesh s/o Rajkumar v Unknown Person*¹⁰²—where the plaintiff owner of a BAYC NFT sued the defendant known under an online pseudonym for the tort of

⁹⁷ See generally Marinotti (n 11).

⁹⁸ *Osbourne v (1) Persons Unknown and (2) Ozone Networks Inc trading as OpenSea* [2022] EWHC 1021 (Comm) (*Osbourne v OpenSea*). See also Boodle Hatfield, 'NFTs recognised as legal property in landmark case' (*Lexology*, 4 May 2022) <<https://www.lexology.com/library/detail.aspx?g=a104ba83-01fe-4b16-b988-b1d1873c6aa3>> accessed 29 January 2024. Prior to this, only crypto assets (being fungible) in general are capable of being property, see *AA v Persons Unknown* [2019] EWCA 3556 (Comm).

⁹⁹ *Ibid.*

¹⁰⁰ As per Lord Wilberforce's definition of property in *National Provincial Bank v Ainsworth* [1965] 3 WLR 1 (*NAB v Ainsworth*).

¹⁰¹ *Osbourne v OpenSea* (n 98); Hatfield (n 98).

¹⁰² *Janesh s/o Rajkumar v Unknown Person ("ChefPierre")* [2022] SGHC 264 (*Janesh v ChefPierre*). See also Thomas Choo and Zhen Guang Lam, 'Singapore High Court recognises NFTs as a form of property' (Clyde & Co, 21 November 2022) <<https://www.clydeco.com/en/insights/2022/11/singapore-high-court-recognises-nfts-as-a-form-of->> accessed 29 January 2024.

conversion, among other things. In this case, the plaintiff used a BAYC NFT as collateral for an Ethereum based decentralized finance loan on a NFT community platform which allowed for NFTs to be used as collaterals to borrow cryptocurrency. Although the defendant initially agreed to an extension of time for loan repayment, he changed his mind and later exercised the ‘foreclose’ option, resulting in the BAYC NFT being subsequently transferred to his (ie, the defendant’s) cryptocurrency wallet. The plaintiff owner applied for a proprietary injunction prohibiting defendant from dealing with the NFT until after the trial, and was successful getting this proprietary injunction to prevent the defendant’s transfer of the NFT to third parties. As in the earlier case decided in the UK,¹⁰³ the definition of property was discussed and applied to determine if crypto assets such as NFTs could be property. The judge decided that the NFT was capable of being identified and isolated from other assets with its distinguishing metadata; the owner of the NFT has the exclusive power to use and benefit from the NFT with his or her private key; the nature of blockchain technology gave the owner the exclusive ability to transfer the NFT which underscored his or her right and that the NFT is a desirable asset which is the subject of active trading; and finally, the NFT has enough permanence or stability, in fact as much as money in bank accounts—thus the requirements for NFTs to be considered as property have been satisfied.¹⁰⁴ This is the first decision in Asia to protect an NFT. Another interesting point to note is that permission was given by the court to the plaintiff claimant to serve court papers through Twitter and other chat platforms such as Discord, as well as the messaging function of the latter’s cryptocurrency wallet.¹⁰⁵ This is a practical decision to make, given that the location of the defendant cannot always be ascertained and effecting service through social media or online otherwise would be the only solution.¹⁰⁶ Furthermore, this demonstrates that the identities of NFT holders and disputing parties in the form of online contact addresses and the pseudonymity that ensues does not prevent them from commencing or responding to legal actions.

Yet another point worth noting is that when platforms such as in the case above allow for NFTs to be used as collaterals, the status of NFTs is elevated to that of a recognized and valuable asset class. The language of ‘foreclosure’ was used in the loan agreements between the plaintiff owner (of the BAYC NFT) and the cryptocurrency lenders on the platform, rendering the rights held by a purchaser or owner of a valuable NFT akin to the rights of an owner of valuable personal property. In the same vein, if proprietary rights continue to be recognized in NFTs, NFTs can be held on trust, used as loan collateral or even insured.

The decisions, together with the other developments within the NFT community, demonstrate that NFT holders have property rights in their NFT tokens, further, the NFT tokens can be the subject of proprietary injunctions—this arguably provides greater assurance to owners of NFTs that they can enforce their rights.¹⁰⁷

NFTs as securities

As highlighted earlier, the US SEC levied a fine of \$6.1 million for Impact Theory’s sale of NFTs, such NFTs being seen as unregistered crypto asset securities.¹⁰⁸ This was the SEC’s first enforcement action against a company’s sale of NFTs.

In this respect, it has been suggested in previous literature that NFTs could be a way to commercialize intellectual property and is a trading card of sorts.¹⁰⁹ The current possibilities around

¹⁰³ *Osbourne v OpenSea* (n 98).

¹⁰⁴ *Osbourne v OpenSea* (n 98), referring to the definition of property in *NAB v Ainsworth* (n 100).

¹⁰⁵ *Janesh v ChefPierre* (n 102); and Choo and Lam (102).

¹⁰⁶ Choo and Lam (n 102).

¹⁰⁷ See, eg, *ibid.* The Hangzhou Internet Court has also ruled that non-fungible tokens are virtual properties protected by law, see, eg, Ningwei Qin, ‘NFTs ruled virtual property in China, its sales protected by law’ (5 December 2022) <<https://finance.yahoo.com/news/nfts-ruled-virtual-property-china-101638829.html>> accessed 31 January 2024.

¹⁰⁸ *SEC v Impact Theory* (n 39).

¹⁰⁹ See, eg, Goforth (n 5).

fractionalizing NFTs (i.e., splitting high value NFTs into uniform units to allow more purchasers to hold a stake in them) mentioned earlier support the argument that NFTs can be seen as securities or other forms of trading cards. An instance is of the current circulating supply of 250 million ‘Unicly CryptoPunks Collection’ (UPUNK) tokens fractionalized from a collection of 50 CryptoPunk NFTs.¹¹⁰ If high value NFTs are fractionalized into fungible tokens, more investment would be encouraged in NFTs. Arguably then, NFTs would become more analogous to securities, commodities or other forms of trading cards, particularly if fractionalized NFTs become more regularly traded on. This could then attract the regulatory implications mentioned earlier, including but not limited that the sale of NFTs have to be registered and further that NFT marketplaces like OpenSea and Rarible would be required to register as a securities exchange, alternative trading system or the like.

Copyright and licensing

In the USA, Yuga Labs, creators of the BAYC NFT collection won a case against two individual defendants Ryder Ripps and Jeremy Cahen who created and sold their own iterations of BAYC NFTs (closely mimicking the original collection) and were hence ordered to pay US\$8.9 million for copyright infringement and other related charges.¹¹¹ Their iterations were seen to be unauthorized versions of the BAYC NFTs.¹¹² Ripps and Cahen were ordered, among other things, to hand over the social media accounts associated with these NFTs, to destroy the NFTs or provide them to Yuga Labs to burn.¹¹³ This case underscores the seriousness with which copyright laws can be applied to NFTs.¹¹⁴

Additionally, the growing adoption of intellectual property licences in NFT marketplaces with which rights and interests are apportioned among various stakeholders is suggested to enforce community norms within the NFT community.¹¹⁵ In fact, it has been further argued that intellectual property rights are essential for NFT owners to maximize the value of NFTs.¹¹⁶ Where there are licences attached to the NFTs, such licences are said to be founded on the basis that there are (intellectual property) rights in the underlying assets to be allocated or transferred.

In particular, the licences that have been introduced in NFT projects on NFT marketplaces relate back to specific rights within copyright. While the following discussion is not intended to be exhaustive, I have selected and will discuss some licences of popular projects in order to understand better as to what is transferred to purchasers.

CC0 licence

The CC0 licence essentially means no copyright and has been referred to as the ‘no rights reserved’ option.¹¹⁷ This has been introduced to high profile projects such as Moonbird and Cryptoadz. Creators are seen to waive their copyright and related rights in their works, placing the NFTs (and their underlying assets) as completely as possible in the public domain.¹¹⁸ Third parties can freely build upon, enhance, reuse or remix the work for any purpose (including commercial purposes) without restriction or the need for attribution. This may explain why the NFT collection Moonbirds’ prices dropped once the new CC0 licence was introduced,

¹¹⁰ See, eg, Unic.ly, ‘The protocol to combine, fractionalize and trade NFTs’ <<https://www.unic.ly/>>; and Tim Copeland, ‘50 CryptoPunks NFTs Go Fractional in New Collection’, Decrypt, 21 April 2021 <<https://decrypt.co/68604/50-cryptopunks-nfts-go-fractional-in-new-collection>> accessed 31 January 2024.

¹¹¹ *Yuga Labs, Inc. v. Ripps*, 22-56199 (9th Cir. Oct. 20, 2023) (*Yuga Labs v Ripps*).

¹¹² *Ibid.*

¹¹³ *Ibid.*

¹¹⁴ See, eg, Kyle Baird, ‘Defendants must pay US\$9 million in Yuga Labs’ Bored Ape Copyright Infringement Case’ (5 February 2024) <<https://beincrypto.com/defendants-9m-yuga-labs-bored-ape-copyright-infringement/>> accessed 9 February 2024.

¹¹⁵ Wang, Lee and Liu (n 25) 45.

¹¹⁶ *Ibid* (n 25) 31.

¹¹⁷ See, eg, Creative Commons, ‘CC0’ <<https://creativecommons.org/public-domain/cc0>> accessed 1 February 2024.

¹¹⁸ *Ibid.*

notwithstanding the fact that the licence is perceived to be a valuable tool to foster creativity, collaboration and knowledge sharing.¹¹⁹

NFT Licence 2.0

On the other hand, there is the NFT Licence 2.0 by Dapper Labs, the original creator of the CryptoKitties NFT project—this is a public template for a NFT licence in artistic content which contains language useful for artists intending to sell the NFTs in future and which grants limited rights to a NFT purchaser.¹²⁰ This template, available for adoption by NFT projects, can give the NFT purchaser two main things: a personal licence permitting display or use of the underlying art for personal purposes *and* a limited commercial licence permitting use of the underlying art in merchandise created by the purchaser, so long as the gross revenue does not exceed US\$100,000 a year as a result of the commercialization. It is subject to change and other terms can also be introduced.¹²¹

A NFT purchaser of a NFT with such a licence has palpably more rights than in the real world. As Dapper Labs said, under the NFT Licence 2.0, a purchaser can take the artwork and design associated with such NFT and make a living by using that artwork in creative ways.¹²² This can include printing the artwork on a shirt, making a comic book featuring the artwork and/or putting the artwork on a deck of playing cards.¹²³ Under NFT Licence 2.0, it is also clear what cannot be done—this includes modifying the artwork and using the artwork to market or sell third party products.¹²⁴ This licence, however, allows for a middle ground to be reached between open-sourcing and sharing the artwork, vis-à-vis restricting the commercial use of the artwork beyond a limit specified.

Can't Be Evil licences

Given that some projects launch without licences, while some projects have custom licences that create more ambiguity, the free and public 'Can't Be Evil' set of licences has been introduced to help bridge the gap and provide a more certain set of rights for projects that adopt these specific licences which are published. These licences are designed to be comparable to the Creative Commons (CC) copyright framework, and regulate the relationship between the original creator of a NFT (i.e., person who created the original art a NFT is linked to) and the purchaser of the NFT.¹²⁵ The six types of broadly applicable NFT-specific licences available range from the most permissive to the least permissive, and outlines explicitly the purchasers' rights to the relevant artworks in the NFTs.¹²⁶ For example, while NFT purchasers can use NFTs for commercial purposes under the CBEN-Commercial licence, NFT creators retain all intellectual property rights, including the right to revoke licences granted under the CBEN-AllRightsReserved licence.¹²⁷

Among other things, the licences help NFT creators protect or release their intellectual property rights, through granting NFT purchasers or holders a baseline of rights that are irrevocable—such rights are embedded into smart contracts. As the licences cannot be changed, this minimizes the burden of theft on NFT holders by ensuring that the licensed rights do not pass

¹¹⁹ Ibid. See also Wikipedia, CC: CC0 <<https://wiki.creativecommons.org/wiki/CC0>> accessed 2 February 2024.

¹²⁰ See, eg, Dapper Labs, 'NFT Licence: Help define what ownership means in blockchain, Version 2.0' (5 November 2018) <www.nftlicense.org/> accessed 1 February 2024; and NFT License, 'NFT License' <www.nftlicense.org> accessed 1 February 2024.

¹²¹ Ibid.

¹²² Ibid.

¹²³ Ibid.

¹²⁴ Ibid.

¹²⁵ Miles Jennings and Chris Dixon, 'The Can't Be Evil NFT Licences' (31 August 2022) <<https://a16zcrypto.com/posts/article/introducing-nft-licenses/>> accessed 2 February 2024.

¹²⁶ Ibid.

¹²⁷ Ibid.

to people who illegally acquire the relevant NFTs. Further, the licences also help NFT creators and purchasers, as well as their communities, unleash the economic and creative potential of their projects with a clear understanding of the intellectual property framework within which they work.¹²⁸ All of these could arguably help to create some norms and standards for NFT creators to follow, particularly if the adoption of the Can't Be Evil licences take off.

Just as has been observed from the past with respect to software publishers using end-user licence agreements (EULAs) (including the General Public Licence) to right-size business relationships in the face of potentially weak copyright protection, regardless of the extent of proprietary rights, more NFT creators and NFT purchasers may turn to contracts to right-size the balance of rights.¹²⁹ The flexibility of adopting different licences, such as the CC0, the NFT 2.0, and Can't Be Evil licences, etc, for different NFT projects will arguably allow for more robustness and the flourishing of NFT marketplaces. The contractual regimes introduced by such licences, through explicit reference to the rights to attribution and to create derivative works, among other things, would give copyright relevance and certainty in the NFT ecosystem.¹³⁰

CONCLUSION

NFTs, more specifically *NFT tokens*, have been suggested to be like properties capable of possession—this view is supported in recent cases in the UK and in Singapore discussed earlier. It is likely that more jurisdictions would follow suit. Moreover, in certain circumstances, for example, where the definition of the Howey investment contract is satisfied,¹³¹ and specifically more so when one is concerned with fractional NFTs (or F-NFTs), *NFT tokens* could be deemed as securities, sale of which would require registration. Further, NFT platforms would have to be regulated as exchanges and the like. With reference then to the *digital copies* and the *underlying assets* linked to the NFT tokens, there could be copyright protection if the requirements for copyright to subsist are met; even if these requirements have not been expressly considered, one can look to the licences in smart contracts to consider what rights will be transferred to a potential purchaser of a NFT. In a sense, the licences that have been developed for NFT projects make reference to rights within copyright's exclusive bundle. The introduction and use of licences concretizes copyright's relevance to some extent, at the same time, this also introduces certainty to purchasers of NFTs as to the rights they are acquiring through their purchases. In fact, the smart contracts incorporating the licences arguably constitute the link between the digital copies and/or underlying assets *and* the NFT tokens specifically, without which it will not be clear what the tokens alone represent.¹³²

NFTs (ie, tokens) linked to copyright protected works have been suggested to foster creativity by advancing the interests of intellectual property holders in two ways: first, providing a new mechanism for governing fan activities without damaging the economic interests of intellectual property holders; and second, providing an effective technical architecture for creators to profit from the resale of their works.¹³³ That said, regardless of whether NFT creators are from civil (with a stronger *droit de suite*, or moral rights regime) or common law jurisdictions, they can opt—on many NFT marketplaces—to have their moral rights recognized through entitlement

¹²⁸ Ibid.

¹²⁹ Robert W. Gomulkiewicz, 'Contracts Mattered as Much as Copyrights' (Summer 2019) 66(3) J Copyright Soc USA 441, 472–473.

¹³⁰ See *ibid* 475.

¹³¹ *SEC v Howey* (n 31).

¹³² This separation between the NFT token and the digital copies and/or underlying assets is not too different from the traditional separation between the physical ownership of a copyright protected artwork and the ownership of the copyright in that artwork, as Yu has highlighted, see Peter K. Yu, 'Deploying Blockchain Technology in the Copyright Office' in Enrico Bonadio and Caterina Sganga (eds), *Non-Fungible Tokens and Copyright* (Routledge 2024).

¹³³ See Wang, Lee and Liu (n 25) 38.

to resale royalties as NFTs created through blockchain technologies ‘facilitate a new type of interactive ownership.’¹³⁴ As highlighted earlier, creators can specify the percentage of resale royalties they wish to be entitled to on NFT marketplaces like OpenSea and Rarible. This gives creators the incentives to create underlying art works, for example, and to mint them into NFTs.

Ultimately, the high valuation of some NFTs in the collectibles market appears to be fuelled and driven by the value assigned to it within the NFT community and as it follows, the prestige ownership of such NFTs bring. Many developers of the metaverse contemplating using NFTs as a calling card for entrance to gatherings, a ticket to events, and as artist expression to connect with the alternative reality experience, etc.¹³⁵ Indeed, NFTs have been perceived to be intangible luxury goods and to hold value insofar as the public regards them as valuable.¹³⁶ The widespread adoption of NFTs could depend on recognition of digital tokenization to afford a measure of legal certainty. This recognition has arguably been afforded by the recent cases in the USA, in the UK and in Singapore, by the recent SEC ruling in the USA, as well as through the introduction of the licences such as the CC0 licence, the NFT Licence 2.0 and the Can’t Be Evil licences incorporated via smart contracts. These recent developments give purchasers some certainty that they are purchasing something of value when they buy NFTs.

For the flourishing of NFT marketplaces and of the continued viable exchange and collection of NFTs, a balance must be struck between giving creators the incentives to create the underlying art works and to mint that into NFTs, as well as giving purchasers something of value when they buy NFTs. The latest developments on NFT marketplaces and in courts are in the right direction. There is room for marketplaces like OpenSea and Rarible to create similar conditions for flourishing by proposing market standards and norms for users to adhere to. While creators have the flexibility to choose their licensing terms on open marketplaces like OpenSea and Rarible, there are more curated marketplaces that have stricter quality control and processes, some of which require specific licences for listed NFTs, such as Known Origin.¹³⁷ The latter type of platforms could require that creators represent specifically that they have the requisite intellectual property rights (including copyrights) to assign with the licences attached to the NFT projects they have launched. At the same time, such platforms could adopt available technologies including artificial intelligence to verify and authenticate recently listed NFTs. Best practices, if implemented well and widely, would ensure that norms are commonly understood within the NFT community. This certainty would allow for the flourishing and viability of NFT marketplaces.

¹³⁴ Edward Lee, *Creators take control: How NFTs revolutionize art, business and entertainment* (New York: Harper Business, 2023). See also Yu (n 132).

¹³⁵ See, eg, Michael D. Murray, ‘NFT Ownership and Copyrights’ (2023) 56(2) *Indiana Law Review* 366.

¹³⁶ See, eg, Bajcetic (n 12) 17.

¹³⁷ See, eg, James Gatto and Molly Tomer, ‘NFT License Breakdown: Exploring Different Marketplaces and Associated License Issues’ (16 September 2021) <<https://www.lawoftheledger.com/2021/09/articles/nfts/nft-license-breakdown/>> accessed 10 February 2024. See also Known Origin, ‘Discover, Sell and Collect NFTs’ <<https://knownorigin.io/>> accessed 10 February 2024.