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Command and control: Rebalancing copyright in the age of AI and the metaverse

Sophie Haikings-Bland

University of Huddersfield, Queensgate, Huddersfield, HD1 3DH, UK

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ABSTRACT

The dominant critique of modern copyright law suggests that the increasing power and expanding scope of modern technological markets are driving users towards infringement. This is exacerbated by the duration of original copyright being so long, and copyrighted works – even under a closed list – continuing to expand, resulting in traditional theoretical justifications for copyright losing their relevance. This irrelevance occurs because the potency of copyright markets means that regulation exists predominantly to grant exclusivity to creators in ever new contexts of use. However, this is a position that fails to consider that innovation fuels creation and consumption. Therefore, this article demonstrates that the core issue is a legal lag – the structural inability of the law to keep pace with rapid technological innovation. This is exemplified by the metaverse and AI-generated works.

Comparative analysis of US and EU regulation identifies that copyright is not unjustified because they are individualistic, but rather they are overreaching because policy makers do not know how to effectively regulate innovations such as the metaverse and AI creations. Therefore, the justification theories arguing for a balance to be struck between dissemination of works and remuneration for authors have become redundant and only serve to prompt the consideration of potential law reform.

In response, the article proposes a reform model based on a proactive command economic approach, through Collective Management Organisations (CMOs). Properly modernised and adapted for use within immersive platforms and AI ecosystems, CMOs could facilitate the balance campaigned for by economic theorists (dissemination of works and remuneration for creative efforts). Furthermore, this approach would provide greater legal certainty because the law would not be in flux with every future technological development.

Introduction

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Economic and moral justification theories underpin the rationale for copyright protection. [1] Moral theories argue that authors should own the rights to their intellectual creations because that creation is a moral manifestation of the author's consciousness, reflecting the unique fabric of the author's mind. [2] Building on this idea, moral theorists believe that the creator should own the expression of an idea because the intellectual property is an extension of the author's effort and investment of time and skill.[3] In binary opposition with this are economic justifications, which demand that the remuneration of creative efforts take priority, even if necessarily balancing the need for public access to works. [4] However, justification theories are contravened by the principle critique that copyright unjustifiably dominates markets, resulting in increased infringements. Increasing infringements are exemplified by the economic impact of piracy on global media, costing the industry $75 billion per year, which is expected to rise to $125 billion by 2028.[5] The criticism that copyright facilitates infringements is reinforced by the expanding scope of protectable subject matter and the continual extension of the duration of protection. Expansion of copyright protection is evidenced in the Copyright, Designs and Patents Act 1988[6] and the Duration Directive 93/98.[7] It has been highlighted that this legislation supports the argument that copyright is unjustified because they grant market dominance to creators, allowing them to profit for as long as possible.[8] Current legislation further provides disproportionate power to AI companies themselves, which not only restricts access but exploits user-generated content and creative efforts to maximise profits. This dominance is argued to be the main driver of infringements because it increases the cost of creative works, and, in turn, markets respond by avoiding being regulated.[9]

However, this is not the universal truth. The simplistic view that the regulation of copyright creates unjustifiable market dominance, which is the main driver of increasing piracy rates, fails to account for the impact that rapid developments in technology have on copyright regulation. It must be noted that Digital Rights Management (DRM) technologies, to a certain extent, have ameliorated piracy. DRM utilises encryption to prevent unauthorised access to, and copying of, copyrighted works. [10] Circumvention of DRM systems is also restricted under the CDPA under sections 296 – 296ZE, [11] legally protecting these technological measures. However, despite the statutory entrenchment of circumvention of DRMs, piracy rates continue to increase, which can be attributed to developments in technology, which, it is argued, undermine both DRMs and copyright. [12] This article argues that a better balance must be struck between the need for protection and the dissemination of works. The reason for copyright

[1] Justin Koo, 'A justificatory pluralist toolbox: constructing a modern approach to justifying copyright law' *42*(8) (2020) EIPR 469.

[2] Georg Wilhelm Freidrich Hegel, *Elements of the Philosophy of Right* (Allen W Wood ed, H B Nisbet trans, Cambridge University Press, 1991).

[3] John Locke, *Two Treatises of Government and a Letter Concerning Toleration* (Ian Shapiro ed, Yale University Press, 2003).

[4] William M. Landes and Richard A. Posner, *The Economic Structure of Intellectual Property Law* (1st edn, Harvard University Press 2003).

[5] Joseph D'Souza, 'Piracy Statistics, Trends And Facts' (*Electro IQ*, 2025) <https://electroiq.com/stats/piracy-statistics/> accessed 27 October 2025.

[6] Copyright Designs and Patents Act 1988, S1(1)(a).

[7] Council Directive 93/98/EEC of 29 October 1993 harmonising the term of protection and certain related rights [1993] OJ L 290 pp. 9-13.

[8] Tom W. Bell. 'Escape from Copyright: Market Success Vs. Statutory Failure in the Protection of Expressive Works' (2001) 69 U Cin L Rev 741, 766.

[9] Ibid, 759.

[10] Anthony Chinn, 'How has technology affected the copyright framework? A focus on digital rights management and peer-to-peer technology. 22 (2016) C.T.L.R 44.

[11] Copyright Designs and Patents Act 1988, S296 (1)(a) & (b)(i) & (ii).

[12] D'Souza (n 5); Chinn (n 10).

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protection should not preference the desire to maximise profits, as this renders copyright unjustified. Instead, regulation needs to preference allowing for the dissemination of creative works, which is significant in enabling society to become culturally enriched from sharing works and critiquing the ideas that they embed.[13]

The argument for an urgent shift in the focus of copyright regulation is prompted by rapid technological advancements, which current legal structures are not equipped to deal with. Rigid legal structures have already created a legal lag, which regulators scramble to address, in the meantime making infringements easier in digital contexts such as music and video sharing, memes and other works disseminated as social media content. [14] Taking account of the existing flaws in legal landscapes, which have led to the potency of copyright growing in strength, the issues in the face of the latest technological wave – such as Generative-AI, the metaverse, and NFTs (non-fungible tokens) – copyright risks becoming completely ineffective.

They may be considered unjustified due to inadequate regulation of emerging technological ecosystems, resulting from the law's inability to keep pace with technological development – referred to as the legal lag.

To understand this contention, it is first necessary to define the key challenges that emerging technologies pose to copyright enforcement. AI-generated works are created entirely by a computer system, thereby raising complex questions surrounding originality.[15] NFTs, on the other hand, are blockchain-based tokens which serve as proof of digital ownership, common in virtual environments.[16] NFTs can represent artistic works such as digitalised clothing and artwork; however, since the designs are not tangible, they raise issues as to whether the blockchain is capable of copyright protection. [17] Virtual environments may exist within the metaverse, which are characterised by an interoperable network of three-dimensional virtual realities. Within these virtual realities exist financial systems allowing players to hold property and create digital assets.[18]

The analysis begins by briefly considering philosophical justifications being replaced by economic justifications as the driver of legal practice, and thus becoming the basis for necessitating law reform. The identification of problems raised by the application of existing law, in the context of both Generative-AI and the metaverse, reveals the flaws in utilising economic justifications to underpin copyright regulation and the inevitable legal lag between the law and the reality it regulates. The analysis proves the central claim that the main driver of infringements is the legal lag, not the potency of copyright. The discussion concludes with a proposal for law reform which may improve the legal lag and fulfil demands for legal certainty in the liminal space between law and reality, which technological advancements have created.

Competing theories of copyright justification

[13] James G.H. Griffin, 'Exploding regulation of culture: what the memetic can(n)on offers regulators' (2015) 20(4) Comm. L 120, 127.

[14] Regulation (EU) 2024/2847 of the European Parliament and of the Council of 23 October 2024 on horizontal cybersecurity requirements for products with digital elements and amending Regulations (EU) No 168/2013 and (EU) 2019/1020 and Directive (EU) 2020/1828 (Cyber Resilience Act) (Text with EEA relevance).

[15] Case C-5/08 *Infopaq International A/S v Danske Dagblades Forening* [2009] ECR I-06569, Para 2.

[16] Andres Guadamuz, 'The Treachery of Images: Non-Fungible Tokens and Copyright' Intellectual Property Law and Practices (2012) 16(12) 1367.

[17] Ioanna Lapatoura, 'Fashion beyond physical space: NFTs and intellectual property challenges in the metaverse' Ent. L. R (2022) 33(6) 197; Enrico Bonadio, Rishabh Mohnot 'NFTs and copyright: some burning issues' (2023) 43(3) E. I. P. R. 150.

[18] Stylianos Mystakidis, 'Metaverse' (2022) 2(1) Encyclopaedia 486, 497.

Recent scholarship on copyright law has focused on the issues of AI infringement, training data, and subsistence of property rights in the metaverse.[19] However, such discourse remains centred on traditional economic or moral justification theories. It will be contended that relying on traditional foundations does not meaningfully address issues posed by developing technology. Accordingly, it is necessary to position traditional theories in line with the current technological age to highlight that a structural economic governance response is required.

Economic justifications offer a more comprehensive framework for understanding copyright law compared to moral theories. Nevertheless, when analysing economic justifications with issues posed by AI and the metaverse, it becomes much more complex. Economic justifications are characterised by considering the balance that must be struck between remunerating creators while allowing public access to creative works.[20] This thinking moves away from moral justifications; furthermore, the economic way of thinking was adopted in *Sony Corp. of America v Universal City Studios*, which underpinned the fact that overly stringent protection can hinder technological advancements.[21] Conversely, moral justifications focus predominantly on the creator's rights. Moral theorists contend that creators should own the products of their labour, which is against the principles of distributive justice.[22] Distributive justice concerns how resources are allocated among members of society. This is important to ensure equality.[23] Having outlined the core principles of both theories, the following section examines the moral justifications to demonstrate the relative strength of economic rationales.

A fundamental moral theory underscoring justifications for property ownership is Locke's labour theory and the Lockean proviso. The labour theory posits that property ownership is justified because individuals possess a natural right to property derived from their labour and the resources that they use.[24] The Lockean proviso is distinct, but retains the principle that creators should own the fruits of their labour.[25] Individuals may only appropriate property if appropriation does not deprive others, but leaves sufficient and comparable resources available in the commons.[26] The Lockean proviso is a narrower interpretation of the labour theory, however, neither have been considered in light of modern copyright law. Nozick, on the other hand, has taken a nuanced approach, building upon the Lockean proviso and applying his theory to intellectual property. His thesis asserts that creators have a natural right to protect their property; that their rights to that property should not be infringed upon by the state because they created that work.[27]

The argument of no state intervention is individualistic as it restricts redistributive justice to

[19] Matthew Sag, 'Copyright Safety for Generative AI' (2023) 61(2) Hous. L. Rev 296; Marianna Foerg, 'Intellectual Property Considerations and Challenges in the Metaverse' (2023) 45(2) EIPR 1, 6.

[20] William M. Landes and Richard A. Posner (n 4).

[21] *Sony Corporation of America et al. v. Universal City Studios, Inc, et al.* 464 U.S 417 [1984] 464.

[22] James S. Coleman, 'Robert Nozick's Anarchy, State and Utopia' (1976) 3(3) Theory and Society 437, 458; John Locke, *Two Treatises of Government* (2nd edn, Cambridge University Press, 1967) 121.

[23] John Rawles, 'Equal Liberty for All' in Otfried Höffe (ed), *A Theory of Justice* (1st edn, Brill, 2013).

[24] John Locke, 'Chapter V. Of Property' in Ian Shapiro (ed), *Two Treatises of Government and a Letter Concerning Toleration* (1st edn, Yale University Press, 2003).

[25] Ibid.

[26] Ibid, 111.

[27] Coleman (above n 22).

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be done so that everyone in society can benefit from creative works. Redistributive justice hinges on the idea of a welfare state, where economic assets are distributed equally in society so that they are accessible not just to those who can afford them.[28] Nozick's claim, therefore, would stifle the dissemination of works and access to them by the public, resulting in more people being necessarily driven to infringement. Furthermore, what underpins the arguments of Locke and Nozick is that they assume that we know who the creator is and that the works are completely original. It is argued that creative works are interconnected because creations are influenced by prior creations. The influence on other works on future creations destabilises moral justifications, because it would grant market dominance on ideas, thus hindering future innovation and the transmission of knowledge.[29] While there is an argument that the influence of other works undermines the very basis of copyright protection, it is important to distinguish between mere influence and direct copying. Moreover, copyright grants only weak monopolies to foster the balance between access and remuneration. [30]

Another important critique of moral justifications that must be considered is how advancements in modern technology are blurring the lines of authorship. The emergence of AI-generated content and the growing popularity of the metaverse have produced problematic outcomes in the application of the law, seen in *Hermès Int'l v Rothschild*.[31] Hermès is a pivotal case that explores the intricacies of authorship in relation to virtual assets. The Birkin bag was minted (the method by which a virtual asset is created) into an NFT. The Birkin bag has an intellectual property right which is protected as a real-life asset, but the law is not equipped to indicate whether the design rights of the Birkin bag are protected in virtual realities. If design rights from our reality can be transposed into a virtual reality, the issue of authorship still remains since it is not clear whether the person who minted the 'meta-Birkin' owns the design rights or if Hermès own the design rights. While this is potentially a trademark violation, NFTs also challenge copyright law because minting creates copyrighted code, which means if NFTs are minted from a similar blockchain (using a substantial part of existing code), it may cause increased infringements because it will not be clear who owns the blockchain and if owning that blockchain would grant too much market dominance. [32] This is where moral justification theories fail because the identity of the author is unclear, so design rights cannot be attributed to him or her.

Waldron, however, considers moral justification from a broader perspective, contrary to the individualistic approach of Locke and Nozick. Waldron's central claim is that ownership of intellectual property is justified to protect authors' moral reputation rather than simply rewarding creation.[33] Yet a limitation that is overlooked by Waldron is the difficulty that creators are faced with when attempting to assert moral rights. The CDPA 1988 s79 provides far-reaching defences for infringing on a creator's moral rights. [34] These defences limit the enforceability of moral rights in relation to derogatory treatments of intellectual creations. Furthermore, s79 operates in conjunction with s30 CDPA 1988, which governs fair dealing for the purpose of criticism, review or reporting

[28] Thomas. C. Grey, 'Property and Need: The Welfare State and Theories of Distributive Justice' [1976] Stan. L. Rev 877.

[29] Mark Lemley, 'Property, Intellectual Property, and Free Riding' (2005) 83(4) Texas Law Review 1031,1076.

[30] Copyright, Designs and Patents, s1 and s2.

[31] *Hermès International and Hermès of Paris v Mason Rothschild*, 384 U.S 22 (2022).

[32] Copyright, Designs and Patents, s3A ; *SAS Institute Inc v World Programming Ltd* [2013] EWCA Civ 1482; Bonadio and Mohnot (n 17).

[33] Jeremy Waldron, 'From Authors to Copiers: Individual Rights and Social Values in Intellectual Property' (1993) 68 Chi-Kent L Rev 841.

[34] Copyright, Designs and Patents, s79.

current events.[35] Where an act infringes a creator's moral rights and falls within the scope of s30, derogatory treatment of a creator's work will be permitted. Taking this into account, Waldron's central claim fails as the basis on which legal practice operates, and it may be contended that the reason creators' rights are not stringently protected is due to the need to balance authorial integrity with freedom of expression and access to information. It is for this reason that economic justifications have become the central basis for legal practice, because they recognise the need to find a balance between creators' rights and public access to the works created.

Economic justifications offered by Landes and Posner claim that copyright incentivises innovation by allowing creators to recover the costs of producing original works and profit from commercial exploitation. [36] They emphasise that copyright protection must strike a balance: it should be strong enough to reward creators but not so restrictive that it limits public access or raises the cost of future creative works, including derivative works such as adaptations or sequels.[37] However, their analysis has limitations. It does not fully consider the economic realities of modern technology, where copying costs are cheap, and enforcement is more difficult due to it becoming increasingly difficult to track infringements. Furthermore, the implication that stronger protection reduces unauthorised copying also suggests that the cost of legitimate access or derivative works may increase, potentially undermining the balance between incentive and public access. This tension is highlighted by Abramowicz, who argues that granting excessive derivative rights or market dominance over works can hinder social progress by restricting the dissemination of knowledge.[38]

Conversely, Merges takes a pluralistic approach by taking into consideration both moral and economic justifications.[39] He also considers the regulation of intangible assets (which can be applied to NFTs in the metaverse), arguing that they cannot be treated like physical property; otherwise, there is a risk that creators would be granted a monopoly, thus keeping competitors out of the market. [40] He considers that there needs to be reform, acknowledging the social cost of copyright, but agreeing with Landes and Posner in that copyright is normatively inflated.[41] Therefore, Merges' view is more compelling because it is more aligned with the current technological age by considering intangible property, and because he considers moral justifications not merely economic ones. Because Merges considers both economic and moral justifications, his argument withstands economic fluctuations such as lower creation costs. If the cost to create is low, then there is no justification for disproportionate IP rights to incentivise creation, undermining the argument put forward by Landes and Posner.[42] Merges' argument posits that even if they are cheap to create, works are an extension of

[35] Copyright, Designs and Patents, s30.

[36] William. M. Landes and Richard. A, Posner (n 4) 11.

[37] Ibid, 75, 80.

[38] Michael Abramowicz, 'Prize and Reward Alternatives to intellectual Property' [2019] Research Handbook on the Economics of Intellectual Property Law 25.

[39] Robert P. Merges, *Justifying Intellectual Property* (1st edn, Harvard University Press, 2011).

[40] Ibid, 239, 246.

[41] Ibid, 103, 112.

[42] Landes and Posner (n 4) 71.

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the creator, so they morally and economically deserve copyright protection.[43]

However, there is a suggestion that the converse of granting market dominance to creators in the face of AI would allow proprietors of Generative-AI models to appropriate and commodify the creative outputs of others. Such a scenario has been highlighted in the recent decision of *Kadrey v Meta*,[44] which allows companies to use creative works to train AI systems without obtaining the right-holder's permission. This is paralleled by the recent decision in *Getty Images v Stability AI*, where even though there was some reproduction of content that had been used in AI training, the courts decided that no infringement had occurred. [45]

Economic justifications provide a more robust framework for understanding the need for copyright law compared to moral theories. However, without adaptation, economic frameworks are inadequate in addressing the legal complexities posed by the technological contexts which have been discussed. Economic justifications are characterised by considering the balance that must be struck between remunerating authors while allowing public access to creative works. Allowing public access to creative works is culturally significant because, in order for society to grow and creativity to flourish, knowledge produced by creators must be accessible so that society can benefit.[46] Furthermore, the need for access serves a pivotal function in influencing future creative works since original works can be transformed into new forms of expression.

Conceptualising AI systems in copyright law

The types of works protected by copyright are expanding, and the duration of protection is too long, which has been highlighted by the economic justifications of copyright law. Copyright protection has expanded over recent decades to include databases (*Technomed v Bluecrest Health Screening*) [47] and NFTs (*Osbourne v Pearsons*). [48] Furthermore, the duration of copyright has been extended, in line with the Duration Directive 93/98 to life plus seventy years, which is problematic because it revives rights over works that were no longer under copyright protection. [49] Merges identified that this is unjustified because there must be a better balance struck to allow works to be accessed by the public.[50] By extending the duration of copyrighted works, creators get to profit for longer by commercially exploiting their works for that time. This is detrimental to public access to the work and appears increasingly difficult to justify, particularly given that the demand for the work typically diminishes over the course of the copyright, while access costs for interested users remain disproportionately high. [51] In the current digital environment, however, access is mediated by powerful technological intermediaries. This results in balance not merely being a matter of duration and access, but of who controls the infrastructure through which creative works are accessed.

There is a limited body of research exploring the implications of AI-generated content on copyright law, which is predominantly attributed to the

[43] Ibid, 197.

[44] *Kadrey v Meta Platforms, Inc* No. 23-cv-03417-VC (2025).

[45] *Getty Images v stability AI* [2025] EWHC 2863 (Ch).

[46] Rawls (n 23).

[47] *Technomed Ltd and another v Bluecrest Health Screening Ltd and another* [2017] EWHC2142 (Ch).

[48] *Osbourne v Persons Unknown & Ors* [2023] EWHC 340 (KB).

[49] Council Directive 93/98/EEC of 29 October 1993 harmonizing the term of protection and certain related rights [1993] OJ L 290 9-13.

[50] Robert P. Merges (n 39) 103,112.

[51] William M. Landes and Richard A. Posner (n 4) 11.

relatively recent emergence of AI and the rapid pace of AI development, which presents challenges for producing a timely, comprehensive analysis. For copyright to subsist, the author of that work must be human; at least this is the position of the US courts from *Burrow-Giles Lithographic Company v Sarony*.[52] However, unlike the US, the UK and the EU have begun to recognise, at least to a limited degree, that AI-generated content may attract copyright protection, as reflected in the CDPA 1988.[53] This move has been justified because AI is being used to boost the economy; thus, policymakers justify the acknowledgement of computer-generated content as capable of holding copyright.[54] This is an attempt to provide right-holders with more control over their works in AI training models, while simplifying how AI developers navigate copyright law.[55]

However, granting AI copyright protection has created analytical incoherence because it is contrary to the skill, labour and judgement test set out by the CDPA 1988.[56] Granting AI copyright protection is also contrary to the decision in *Infopaq v Danske*,[57] requiring the work to be the author's own intellectual creation. This is problematic because AI, and the emergence of artificial superintelligence (ASI), do not need to exercise any skill, labour or judgement to create intellectual property. This is particularly relevant for Generative-AI models, as users can prompt AI to produce content derived from works that are behind paywalls.[58] Because of recent case law and EU legislation, AI systems may inadvertently reproduce material from works with which it has been trained.[59]

Commodification of creative outputs has been highlighted by *Kadrey v Meta*, where the US courts permitted the use of copyrighted works to train AI models, branding it as 'fair use'.[60] The outcome is perhaps unsurprising, given that the case was heard in California, a jurisdiction embedded in the global technology industry and home to Meta's headquarters. Due to the geographical and economic proximity to substantial technology companies, the judicial environment may be more attuned to the interests of large tech firms. Furthermore, a California ruling may influence the manner in which companies like Meta design and deploy AI systems, given that corporations are bound to the jurisdiction of their state of incorporation.[61] The decision in *Kadrey v Meta* not only establishes a precedent within the United States but also has broader influence for the global technology sector, given the market dominance of companies such as Meta and Google.[62] In this context, the concept of 'fair use' in US copyright law can be seen as having an influence on the interpretation of the EU Digital Single Market (DSM) Directive.[63] The DSM Directive authorises the use of copyrighted works for training AI models

[52] *Burrow-Giles Lithographic Company v Sarony*, 111 U.S. 53 (1884).

[53] Copyright, Designs and Patents s9(3).

[54] Jason Furman and Robert Seamans, 'AI and the Economy' (2019) 19 Innovation Policy and the Economy 161.

[55] Council Directive 2001/29/EC of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC (Text with EEA relevance.) [2019] OJ L 130/17.

[56] Copyright, Designs and Patents Act, s1(1)(a).

[57] Case C-5/08 *Infopaq International A/S v Danske Dagblades Forening* [2009] ECR I-06569, Para 1.

[58] *Getty Images v Stability AI* (n 45); *Kadrey v Meta* (n 44).

[59] Ibid.

[60] *Kadrey v Meta* (n 44).

[61] California Corporations Code §102(a) and §200 (California, 2025).

[62] *Kadrey v Meta* (n 44).

[63] Digital Single Markets Directive (n 55).

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without a licence in Articles 3 and 4.[64] Articles 3 and 4 permit text and data mining of lawfully accessed works, subject to certain conditions. Quintais has noted that, while the DSM Directive was intended to provide legal certainty, it has been criticised for facilitating the commodification of copyrighted works by large technology companies, enabling them to generate substantial profits.[65]

Against the backdrop of *Kadrey v Meta*[66] and the provisions of Articles 3 and 4 of the DSM Directive, Generative-AI systems, such as Sora 2, demonstrate how dominant technology companies can utilise copyrighted works for training purposes, generating outputs that appropriate creative material while deriving commercial benefit.[67] Sag observes that training AI models is most prevalent in the context of text-to-video or text-to-image tools (AI-slop), which, as previously discussed, are not classified as infringements.[68] Sag aligns with the DSM Directive and *Kadrey v Meta* since he argues that this is justified since AI is not stealing the content it has been trained with, and that infringement should only arise where AI directly reproduces copyrighted materials.[69] However, this argument fails to account for the fact that employing creative works to train AI enables large companies to profit, leaving the original creators without the economic benefit of their efforts. Meanwhile, it is legal for users to prompt AI to indirectly infringe on works rather than gain legitimate access. The issue of AI reproducing content which it has used for training has also been underpinned in *Getty Images v Stability AI*.[70] The decision stated, once again, that there was no infringement despite evidence of reproduction.[71] The case supports the argument that reproduction is more likely to occur in AI-slop (text-to-image prompts), highlighting that the courts should stop attempting to apply ill-fitting legislation to modern contentions, because doing so facilitates the legal lag.[72] Facilitating the lag allows users to bypass access costs, while allowing AI companies to profit.

A further point of analysis, which renders it unjustified to grant copyright to AI-generated content, is that AI cannot enforce copyright. This subverts Merges' argument, as restricting access to AI-generated works lacks economic justification, and AI itself cannot claim a natural right to ownership, particularly when its outputs infringe on the works of other creators.[73] Economic theorists may use the case of *Naruto v David Slater* to argue that the author of the work will be the person who undertook the arrangements necessary for its creation, which can be applied to AI-generated works.[74] Yet in the context of ASI, which will have human-like capabilities, creations would be original. In this context, copyright would be unjustified because it would mean attributing the benefits of copyright to the developer of ASI when the work is unrelated to their contribution.[75] To add to this, imposing copyright on works generated by ASI would restrict the dissemination of creative works.

[64] Ibid, Articles 3 and 4.

[65] João Pedro Quintais, 'The New Copyright in the Digital Single Market Directive: A Critical Look' [2020] European Intellectual Property Review 1.

[66] *Kadrey v Meta* (n 44).

[67] Digital Single Markets Directive (n 55); Jonathan Blair and Sophie Neal, 'Text-to-video – mitigating disruption in the film and TV industry' (2024). 35(4) Ent. L. R 147; Ibid, 149.

[68] Matthew Sag (n 19).

[69] Ibid, 308, 309.

[70] *Getty Images v stability AI* (n 45).

[71] Ibid at 170.

[72] Jonathan Blair and Sophie Neal (above n 67).

[73] Merges (n 39).

[74] Naruto v Slater, 888 F.3d 418, 426 (9th Cir. 2018).

[75] *Getty images v Stability AI* (n 45).

ASI cannot be remunerated, so restricting access to work developed by ASI is fruitless. Another point to consider is that ASI does not need to be incentivised by the profits derived from copyright in order to create. This is a significant point to consider because it annihilates any economic justification for copyright protection, as, in this context, innovation can flourish without copyright.[76] Furthermore, the profit to cover the costs of developing ASI software does not merely come from the revenue of copyright; rather, the costs are derived from large-scale investors.[77] In the case of OpenAI (the holding company of ChatGPT), which received $6.6 billion from investors; thus it would be immaterial whether copyright was granted or not. [78]

While Generative-AI models (distinct from ASI in that they do not have human-like capabilities) they are nonetheless capable of infringing copyright, as evidenced in *Thomson Reuters v ROSS*.[79] However, a better balance is required, one that promotes meaningful public access without entrenching the disproportionate market power of AI intermediaries.[80] If the duration of copyright were reduced, then people may not turn to AI tools to circumvent access and licences. Stemming from this, Liu has argued that the courts should consider infringements in parallel with the fair-use doctrine. [81] Fair use is a defence under CDPA 1988.[82] Liu argues that fair use should be broadened so that the courts must consider how far into the duration the work is before asserting that there is an infringement. [83] However, this attempt at balancing public access and copyright would not work. It is becoming increasingly difficult to regulate infringements, vis-à-vis AI-generated works, due to the speed at which AI can create and transmit intellectual output. While lengthy protection periods can increase enforcement costs for original creators, the broader issue lies in the market's ability to operate with minimal regulatory oversight. The uncertainty over when infringement truly occurs, and the law allowing this to happen, underscores a persistent legal lag between technological innovation and copyright enforcement.

The metaverse, NFTs, and copyright liability

Infringements in the metaverse, much like those concerning AI, are driven less by user misconduct than by restricted access to digital resources. These threats come in the form of NFTs. Although NFTs have no precise definition in a legal sense, they could be understood within the framework of existing law governing mods, offering insights into how NFTs may be regulated without law reform. Mods are modifications to a computer game's code that result in changes to the way that the game is played, such as character or ammunition modification, or changing the storyline. [84] Mods are often created because content to improve gameplay experience is protected by a paywall or a licensing agreement. While NFTs differ from mods in that they are a

[76] Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (1st edn, Yale University Press, 2013) 133, 175.

[77] Benedetta Montanaro, Annalisa Corce and Elisa Ughetto, 'Venture capital investments in artificial intelligence' (2024) 34 J Evol Econ 34.

[78] Krystal Hu, 'OpenAI closes $6.6 billion funding haul with investment from Microsoft and Nvidia' (Reuters, 3 October 2024) <https://www.reuters.com/technology/artificial-intelligence/openai-closes-66-billion-funding-haul-valuation-157-billion-with-investment-2024-10-02/> accessed 3 November 2025.

[79] *Thomson Reuters Enterprise Centre GmbH v Ross Intelligence Inc.* No. 20-CV-613-SB (2025).

[80] Merges (n 39) 106.

[81] Joseph P. Liu, 'Copyright and Time: A Proposal' [2002] Boston College Law School 410.

[82] Copyright, Designs and Patents, s28.

[83] Liu (n 81) 425.

[84] Hector Postigo, 'Of Mods and Modders: Chasing Down the Value of Fan-based Digital Game Modifications' (2007) 2 Games and Culture 300.

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digital crypto asset, as demonstrated by *Hermès Int'l v Rothschild*,[85] objects minted into NFTs within a game could be used as a mod, such as wearable character skins, drivable vehicles and so on. User-generated mods are classified as derivative works of the game underpinned by key legislation: Software Directive 2009/24/EC[86] and the CDPA 1988.[87] The application of this legislation is seen in *Take Two Interactive Software v James*,[88] where the mods interfered with the gameplay experience by giving players an advantage, in this case, modifying weapons, vehicles or ammunition. The case highlights that when a mod adapts the game's code to alter the gameplay experience, then the mod will be classified as a derivative work.[89] Because the mods are a derivative copy, based on the legislation discussed, the result is that the owner of a game is able to bring legal action against user-generated content and seek remedies such as damages or injunctions. Because of the legal lag, game companies are able to impose contractual mechanisms to restrict access and take ownership of user-generated content. *Bragg v Linden* [90] highlighted the enforceability of clickwrap agreements and the limitations which they impose on users' claims to ownership within virtual worlds, showing that contractual mechanisms, alongside copyright, determine who controls digital property and who can access it.[91]

The exploitative nature of clickwrap agreements is not exclusive to user-generated content in virtual realities; a comparable structure exists in Generative-AI development. Beta-testing is the method by which users test and interact with products to provide feedback, which will enhance the product.[92] This applies to the training of OpenAI software, where content is repossessed by the company, and this is protected by the terms of service agreement.[93] Once the system has been refined, access is placed behind a paywall, which reinforces the economic benefit retained by corporate hands. This also supports the argument that Beta-testing is not necessary; it is a manoeuvre to maximise profits.[94] This illustrates how AI governance, like the regulation of mods in virtual realities, relies not only on copyright law but also on contractual agreements to exploit user-generated content. Thus indicating that the legal lag allows corporations to exploit outdated copyright frameworks, which is important to consider with the emergence of NFTs.

Although the regulation of mods is, to some degree, effective within the confines of a single virtual world, the current legislation is ill-equipped to address the complexities posed by interoperable networks of virtual realities within the metaverse. The impact of this is that NFTs can be used and traded within each reality, thus making it difficult to know which computer code is being infringed

[85] *Hermès International and Hermès of Paris v Mason Rothschild* (n 30).

[86] Directive 2009/24/EC of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs [2009] OJ L111/16, Article 4(b).

[87] Copyright, Designs and Patents, s21(4).

[88] *Take Two Interactive Software Inc and another v Nathan James and others* [2020] EWHC 179 (Pat).

[89] Ibid, para 5.

[90] *Bragg v. Linden Research, Inc.*, 487 F. Supp. 2d 593 (E.D. Pa. 2007).

[91] Ibid.

[92] Robert J. Dolan and John M. Matthews, 'Maximizing the Utility of Customer Product Testing: Beta Test Design and Management' (1993) 10 J Prod Innov Manag 318, 319; Povilas Kamantaukas, 'Formation of Click-wrap and Browse-wrap Contracts' (2015) 12 Apzvalga L. Rev 51; click-wrap agreements are binding online contracts that are often accepted by clicking 'I agree'.

[93] OpenAI, 'How your data is used to improve model performance' (OpenAI, 31 October 2025) <https://help.openai.com/en/articles/5722486-how-your-data-is-used-to-improve-model-performance?utm_source=chatgpt.com> accessed 4 November 2025.

[94] Robert J. Dolan and John M. Matthews (n 93) 329.

and whose clickwrap agreement is being breached.[95] Therefore, infringements are often the consequence of overly restrictive regulation on both user-generated content and restrictive access to premium features, compounded by the law's inability to adapt to the metaverse's interoperable and decentralised nature.[96] The current legal frameworks are not prepared for this new reality, and their rigidity contravenes redistributive justice, facilitating a neoliberalist system where only large gaming companies can monopolise profits from user-generated content. This underscores the deeper issue of the legal lag.

Another point to consider is that the borderless nature of the metaverse creates a legal grey area because it is not clear which jurisdiction will govern which infringements.[97] This is a significant challenge when NFTs can be passed through different interconnected virtual realities with users in different jurisdictions, making it unclear whose jurisdiction would apply. Users who are simultaneously creators seek access to restricted content to enhance gameplay, yet the existing framework privileges corporate control over accessibility. Thus, the issue is not that copyright is inherently unjustified because it is overly stringent, but that it requires a rebalance (using economic analysis discussed) to prioritise user access in the context of NFTs/AI, while addressing the concentration of control within dominant technological intermediaries.

The economic case for structural reform

Because the legal lag creates an imbalance of legal rights, outlined by economic theorists, it is important to introduce a new economic theory to rebalance the rights of creators, public access and corporate control. Scholars have argued that there is no need to reform the law in the metaverse and that property should be treated in the same way as intangible property.[98] Accordingly, ownership of virtual assets should be considered as a bundle of rights akin to those associated with real property. Thus, the law should engage in meaningful contracts with online users over virtual assets.[99] However, it has been argued that this approach is unworkable due to the borderless nature of the metaverse, because that would facilitate an imbalance where user-generated content is exploited for corporate players to profit, thus limiting user access to NFTs. An international treaty may rebalance the rights of creators, addressing the neoliberal tendencies that allow platform owners to profit disproportionately through terms of service and clickwrap agreements. Nonetheless, such a treaty would rely on moral justification theories, potentially granting excessive power to individuals who own intellectual property, thereby limiting the dissemination of creative works.

Treating property in virtual worlds as real property would also require a clear identification of the creator, a task made increasingly difficult with the advances of AI. There is no certainty whether AI will begin to generate virtual property in the metaverse, which would raise complex doctrinal issues. AI-generated works in the metaverse, if their creations were to be treated as real property,

[95] *Bragg v. Linden Research, Inc.* (n 90).

[96] Liang Yang, Shi-Ting Ni, Yuyang Wang, Ao Yu, Jyh-An Lee, Pan Hui, 'Interoperability of the Metaverse: A Digital Ecosystem Perspective Review' [2024] IEEE.

[97] Marianna Foerg (above n 19).

[98] Peter Mezei, Gunjan Chawla Arora, 'Copyright and Metaverse' in Larry A. Dimatteo and Michel Cannarsa (eds), *Research Handbook on the Metaverse and Law* (1st edn, Edward Elgar Publishing, 2024).

[99] Joshua A. T. Fairfield, 'Virtual Property' (2005) 85 BU L Rev 1047.

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would introduce legal uncertainty since AI cannot enforce contracts. Thus, if AI were to be treated as real property, these foundational enforcement challenges must be addressed.

International treaties do currently exist, which were introduced to create a standard cross-border treatment of intellectual property. The crucial downfall of all international treaties, such as the Berne Convention, is that they are archaic laws.[100] The Berne Convention was created in 1886, so it was not created with AI and the metaverse in mind. The Berne Convention is, arguably, reliant on a text-centric model of intellectual property, therefore lacks the ability to keep pace with technological advancements that are reliant on code or blockchain (such as NFTs).[101] Although the TRIPS agreement does introduce a less text-centric approach to copyright, Articles 10(1) and (2) merely reinforce that non-literary works will be treated as literary works as they are in the Berne Convention.[102] While this does create a universal standard of application, there is difficulty in applying a text-centric model to issues raised by the metaverse and AI because, as has been highlighted, authorship, subsistence and originality challenge traditional copyright models relating to static works such as music, literature and art.

Although such limitations in treaties persist, there has been an attempt by the European Union to regulate AI. A similar approach of the EU AI Act could be taken to mitigate infringements in the metaverse, because the Act categorises AI into risk levels rather than AI models.[103] This is effective because the legislation focuses on the harm caused by AI systems, rather than identifying which particular model is responsible for infringement. While this has been criticised for being too far-reaching in its categorisation of AI into four risk levels, unacceptable risk, high-risk, limited risk and minimal risk, it may allow for a more flexible approach because the act can more easily anticipate future technology. [104] However, considering the text and data mining exceptions, and the case of *Getty Images v Stability AI,*[105] the EU AI Act is undermined because AI still reproduces content which it has been trained with when prompted to.[106] Both instruments still permit AI systems to infringe creators' copyright without remuneration, and neither adequately addresses the structural barriers to public access to creative works that incentivise users to circumvent restrictions by relying on AI tools.

Another solution is that the government should offer a reward system rather than granting copyright. [107] This is problematic because of the potential risk that the rewards would be more about how hard the owners of the work lobbied rather than the actual creations themselves. For example, the government had a reward system for patents whereby they would decide who received the reward based on 'preferential treatment' towards inventors. [108] The same may be true if a reward system were introduced to replace copyright; the government may offer preferential treatment

[100] Berne convention for the Protection of Literary and Artistic Works 1886 (as amended on 28 September 1979).

[101] Yin Harn Lee, 'The persistence of the text: the concept of the work in copyright law - Part I' [2018] 2 IPQ 107,139.

[102] Agreement on Trade Related Aspects of Intellectual Property Rights (as amended on 23 January 2017), Part 2, s 1.

[103] Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts 2021/0106 (COD).

[104] Lilian Edwards, 'The EU AI Act: a summary of its significance and scope' [2022] ALI.

[105] *Getty Images v Stability AI* (n 45).

[106] Digital Single Markets Directive (n 55).

[107] Waldron (n 33).

[108] Robert Burrell and Catherine Kell, 'Parliamentary rewards and the evolution of the patent system' (2015) 74 C. L. J 423.

towards the heroic creator.[109] A reward-based system is also problematic when applied to computer-generated works because, as discussed, AI systems themselves do not require incentives to create. In practice, financial reward would accrue to the owners of AI technologies, not the creative process itself. This outcome would be economically unjustified as it would further consolidate wealth among the owners of AI software who already benefit from the use of others' creative efforts. Moreover, as AI becomes increasingly autonomous in producing original outputs, such rewards would allow companies to profit from creations to which they contributed little direct creative input, while simultaneously restricting public access to the very tools which enabled such innovation.

Taking these arguments into consideration, copyright cannot be enforced effectively in relation to developing technologies, so economic theories should be considered.[110] In the context of IP, this might look like Collective Management Organisations (CMOs). The EU has legislated for the use of CMOs in the context of copyright and multi-territorial licensing of musical rights.[111] The directive aims to protect the rights of creators while remunerating their creative efforts. CMOs also allow public access to creative works, and allow for multi-territorial licensing in an internal market.[112] Importantly, such access would not be left to dominant AI intermediaries, but structured through CMOs capable of balancing remuneration with public availability. Because the CMO should have a supervisory role, they would be in a better position to assess AI infringements and track whether AI development is following the DSM Directive or whether creators' works are being infringed upon. Furthermore, an AI company would have to be granted permission by the CMO to use right-holders' works for AI training rather than arbitrarily using creative efforts.

While preceding discussions considered CMOs in the context of AI, CMOs will now be examined as a solution to issues posed by NFTs in the metaverse. If a CMO existed over user-generated content in the metaverse, they would, to some degree, tackle the issue of clickwrap agreements. This is because the CMO would recognise the blockchain as a creative effort and protect that right. This would mean that for the game owners to access that content (such as an NFT), they would need to obtain a licence. Furthermore, there would be better public access to NFTs because, firstly, the CMO could operate as a single market (mirroring the multi-territorial element of the CMO Directive), which would tackle the issue of interoperability, so it is easier for users to access creative works.[113] Secondly, because CMOs can decide what price users should pay for content, they could use the fair-use doctrine to determine whether a work should be free to access (which may also apply to whether AI can train on creative works). Introducing CMOs, therefore, supports Merges' view because the CMOs structure is better placed to assess creation costs and licence duration in a manner that facilitates public access and mitigates market dominance.[114] In turn, CMOs may mitigate the issue of piracy because they have a supervisory role, so they can track infringements,

[109] Ibid.

[110] G. Paul Peterson, 'Karl Marx and His Version of Salvation: The Natural Law and Private Property' (1994) 52(3) Review of Social Economy 377, 387.

[111] Council Directive 2014/26/EU of 26 February 2014 on collective management of copyright and related rights and multi-territorial licensing of rights in musical works for online use in the internal market Text with EEA relevance [2014] OJ L84/20.

[112] Ibid, Article 5; Ibid, Articles 16 and 17; Ibid, Articles 23 and 24.

[113] Collective Management Directive (n 111).

[114] Merges (n 39) 103; Liu (n 81).

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and they provide for less market dominance, unlike the current model of copyright. [115]

Conclusion

The analysis has examined whether copyright is justified by economic justification theories, or whether copyright merely confers market dominance onto creators, which drives piracy and infringements. Additionally, it has been considered how copyright provides disproportionate power and resources to the AI companies themselves. It has been contended that the primary reason for increasing piracy and infringements of copyright is not because they are unjustified, nor is it because creators desire market dominance. The fundamental reason for piracy and infringement is the legal lag supported by the law's inability to keep pace with technological advancements, allowing corporate players to maximise profits. Consequently, by highlighting the true reason for infringements, it has allowed for the proposal of CMOs. The foundations of economic justification theories for copyright law have been used to argue for a rebalance that preferences user access while maintaining creator remuneration.

A critical issue which has been highlighted is that users can bypass access restrictions through AI models. This point has been argued by analysing whether copyright can subsist in AI-generated works. This analysis has underpinned the fact that AI-generated content does not meet the relevant originality requirements because it trains using works where copyright does subsist. In doing this, the critique is that AI regenerates content that it has been trained with, thus users can prompt AI to reach behind paywalls and licences, often presented in the form of AI-slop. Therefore, greater public access through CMOs may mitigate this issue while supervising the licensing of creative works to AI companies. In turn, this would combat the issue of long duration, meaning that fewer people may be driven to infringement. Although the courts have failed to recognise AI reproduction of creative works, this can be attributed to the legal lag rather than copyright market failure.

Issues of ownership surrounding NFTs have highlighted the need to rebalance the law to focus on user access. This is notable when considered alongside the regulation of game mods. The analysis demonstrates that the legal lag enables game companies to claim a remedy over user-generated content because they are classified as derivative works. Furthermore, exploitative contractual mechanisms allow game developers to claim ownership over user-generated content. As a result, users are often restricted from accessing or building upon each other's creations. This is predominantly because users do not want to pay to access premium features to enhance gameplay. Introducing CMOs could address the imbalance by facilitating broader dissemination of creative works within virtual realities, thereby enhancing user access while maintaining appropriate protections for creators.

These issues have been applied to the current legal structures to highlight why there is a legal lag. It is this legal lag that is the driver of copyright infringements and not the potency of copyright or that they are unjustified because they grant market dominance. While the duration of copyright may be too long and may drive users to bypass restricted content through AI mechanisms, this is only facilitated by the law's inability to keep pace with technological advancements. If the legal lag is not addressed, then decisions, like in the cases mentioned, will continue to reverberate across regulatory debates for years to come, while the plutocrats are the only ones that truly win.

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