

Authorship in AI-Generated Works: Exploring Originality in Text Prompts and AI Outputs Through Philosophical Foundations of Copyright and Collage Protection

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Abstract:

The advent of artificial intelligence (AI) and its generative capabilities have propelled innovation across various industries, yet they have also sparked intricate legal debates, particularly in the realm of copyright law. Generative AI systems, capable of producing original content based on user-provided input or prompts, have introduced novel challenges regarding ownership and authorship of AI-generated works. One crucial aspect of this discussion revolves around text prompts, which serve as instructions for AI systems to generate specific content types, be it text, images, or music.

Despite the transformative potential of AI-generated works, the legal landscape remains fragmented, with disparate jurisdictional interpretations and a lack of uniform approaches. This disparity has led to legal uncertainty and ambiguity, necessitating a nuanced exploration of originality, creativity, and legal principles in the context of text prompts and resulting outputs.

This article seeks to contribute to the ongoing debate by delving into the complexities surrounding AI-generated works, focusing specifically on the originality of text prompts and their correlation with resulting outputs. While previous literature has extensively examined copyright issues related to AI, the originality of text prompts remains largely unexplored, representing a significant gap in the existing discourse.

By analysing the originality of text prompts, this article aims to uncover new insights into the creative process underlying AI-generated works and its implications for copyright law. Drawing parallels from traditional creative works, such as collages, the article will assess how legal principles apply to AI-generated content, considering philosophical foundations as well as copyright principles, such as the idea-expression dichotomy.

Furthermore, the article will explore the divergent approaches taken by different jurisdictions, including the UK, US, and EU, in determining originality in the context of copyright law.

While refraining from providing definitive answers, the article aims to stimulate critical thinking and dialogue among stakeholders. By offering fresh perspectives and insights, it seeks to enrich the discourse surrounding the copyrightability of AI-generated works and pave the way for informed policy decisions and legal interpretations. The article aims to contribute valuable perspectives to the ongoing debate on copyright and AI, shaping the future trajectory of intellectual property law in the era of artificial intelligence.

Keywords: copyright, originality, generative AI, text prompt, AI-generated works, authorship and ownership

1. Introduction:

In the realm of artificial intelligence (AI), the concept of generative AI has sparked both fascination and concern. Generative AI refers to systems that have the ability to create original content, such as text, images, or music, based on input data or prompts provided by users¹. Text prompts, in particular, serve as cues or instructions given to AI systems to generate specific types of content². While the capabilities of generative AI have led to innovative applications across various industries, they have also raised complex legal questions, particularly in the realm of copyright law³.

The core of the issue lies in the intersection of AI-generated works and copyright, where traditional legal frameworks struggle to keep pace with technological advancements. One of the primary challenges stems from the determination of ownership and authorship of AI-generated works⁴. Unlike traditional creative works where human authors are easily identifiable, AI-generated works blur the lines of authorship, raising questions about who should be credited as the creator and who holds the rights to these creations.

At the heart of the matter is the lack of uniform approaches and disparate jurisdictional interpretations surrounding AI-generated works. Across different legal systems, there exists a patchwork of regulations and precedents, leading to legal uncertainty and ambiguity. This article aims to contribute to the ongoing debate surrounding ownership and authorship of AI-generated works by delving into the complexities of originality, creativity, and legal principles in the context of text prompts and resulting outputs.

The significance of this issue cannot be overstated, as it has profound implications for creators, industries, and society at large. As AI continues to advance and permeate various aspects of our lives, understanding the legal framework governing AI-generated works is crucial for ensuring fair compensation, protection of intellectual property rights, and fostering innovation⁵.

In the academic literature as well as in policy debates concerning copyright and artificial intelligence (AI), much attention has been devoted to two primary aspects: the infringement of copyrighted

¹ James Hutson and Morgan Harper-Nichols, 'Generative AI and Algorithmic Art: Disrupting the Framing of Meaning and Rethinking the Subject- Object Dilemma' (2023) 23 *Global Journal of Computer Science and Technology*: D <<https://digitalcommons.lindenwood.edu/faculty-research-papers/461>>.

² 'Artificial Intelligence Prompt Engineering as a New Digital Competence: Analysis of Generative AI Technologies Such as ChatGPT' (2023) 11 *Entrepreneurial Business and Economics Review* 25.

³ Pamela Samuelson, 'Generative AI Meets Copyright' (2023) 381 *Science* 158.

⁴ Faye F Wang, 'Copyright Protection for AI-Generated Works: Solutions to Further Challenges from Generative AI' (2023) *Series 2 Vol. 5 Amicus Curiae* 88.

⁵ Martin Senftleben, 'Generative AI and Author Remuneration' (2023) 54 *IIC - International Review of Intellectual Property and Competition Law* 1535.

material through AI training⁶ and the copyrightability of AI-generated works⁷. These topics have rightfully garnered significant scholarly interest and have been extensively analysed from legal, ethical, and practical perspectives⁸. However, there exists a notable gap in the literature regarding the originality of text prompts and their relationship with AI-generated outputs.

The exploration of the originality of text prompts represents a novel angle within the broader discourse on AI and copyright. Text prompts serve as the input or instructions provided to AI systems to generate specific types of content, such as written narratives, articles, or poetry⁹. While much attention has been paid to the resulting outputs generated by AI, relatively little consideration has been given to the originality of the prompts themselves and how they may influence the creativity and copyright status of the AI-generated works.

This unexplored aspect is particularly noteworthy due to its potential implications for copyright law and the determination of authorship and ownership in AI-generated content. Text prompts play a crucial role in shaping the thematic elements, stylistic choices, and narrative structures of AI-generated works¹⁰. As such, the originality of these prompts may have a significant bearing on the originality and copyrightability of the resulting outputs.

By delving into the originality of text prompts, scholars can uncover new insights into the creative process underlying AI-generated works and the interplay between human input and machine output. Furthermore, analysing the relationship between text prompts and AI-generated outputs

⁶ Michael D Murray, 'Generative AI Art: Copyright Infringement and Fair Use' (25 August 2023) <<https://papers.ssrn.com/abstract=4483539>> accessed 10 February 2024. Ashay Maske, 'Generative AI and IP Infringement' (7 October 2023) <<https://papers.ssrn.com/abstract=4595149>> accessed 10 February 2024. Rita Matulionyte, 'Generative AI and Copyright: Exception, Compensation or Both?' [2023] *Intellectual Property Forum: Journal of the Intellectual and Industrial Property Society of Australia and New Zealand* 33.

⁷ Péter Mezei, "'You AI n't Seen Nothing yet": Arguments against the Protectability of AI-Generated Outputs by Copyright Law', *Law, Regulation and Governance in the Information Society* (Routledge 2022); 'Artificial Life Imitating Life: Copyright Ownership in AI-Generated Works - ProQuest' <<https://www.proquest.com/openview/5f506b6738a40a3833621f532ccf6310/1?pq-origsite=gscholar&cbl=46743>> accessed 10 February 2024; Berna Tugce Kucukali, 'The Protection of AI-Generated Works under European Copyright Law : Toward Adoption of a Neighbouring Rights Approach' (University of British Columbia 2022) <<https://open.library.ubc.ca/soa/cIRcle/collections/ubctheses/24/items/1.0421298>> accessed 10 February 2024; Atila Kasap, 'Copyright and Creative Artificial Intelligence (AI) Systems: A Twenty-First Century Approach to Authorship of AI-Generated Works in the United States' (2018) 19 *Wake Forest Journal of Business and Intellectual Property Law* 335.

⁸ Sandiunge Torres and Isaac Yael, 'Copyright Implications of the Use of Generative AI' <<http://repositori.upf.edu/handle/10230/58935>> accessed 10 February 2024. Ana Ramalho, *Intellectual Property Protection for AI-Generated Creations: Europe, United States, Australia and Japan* (Routledge 2021).

⁹ 'Artificial Intelligence Prompt Engineering as a New Digital Competence: Analysis of Generative AI Technologies Such as ChatGPT' (n 2). Jonas Oppenlaender, 'The Creativity of Text-to-Image Generation', *Proceedings of the 25th International Academic Mindtrek Conference* (Association for Computing Machinery 2022) <<https://dl.acm.org/doi/10.1145/3569219.3569352>> accessed 10 February 2024.

¹⁰ Oppenlaender (n 9).

can shed light on the philosophical foundations of copyright law, such as the idea-expression dichotomy and the threshold of originality.

This area of research offers an opportunity for scholars to advance answers to complex questions surrounding creativity, authorship, and intellectual property in the digital age. By examining the nuances of text prompts and their role in AI-generated content creation, this article aims to contribute valuable perspectives to the ongoing debate on copyright and AI. Moreover, addressing this gap in the literature can provide a more comprehensive understanding of the legal and ethical implications of AI technology on creative industries and intellectual property rights.

In the following sections, we will embark on a comprehensive exploration of originality in text prompts and resulting outputs, with a focus on literary and artistic works. We will begin by examining the concept of originality in the context of copyright law in the UK, US, and EU, shedding light on the divergent approaches taken by each jurisdiction. Subsequently, we will delve into the correlation between text prompts and output, grappling with philosophical foundations of copyright and navigating principles such as the idea-expression dichotomy.

Drawing parallels from the realm of traditional creative works, namely collages¹¹, we will assess how these concepts apply to the realm of AI-generated content. By dissecting legal precedents, case studies, and emerging trends, we aim to elucidate the complexities inherent in determining ownership and authorship of AI-generated works.

In exploring the complexities surrounding the copyrightability of AI-generated works, it's essential to acknowledge the multifaceted nature of the issue. The intersection of artificial intelligence, creativity, and intellectual property rights presents a landscape with complex legal and philosophical nuances. As such, the aim of this article is not to offer a one-size-fits-all solution or a definitive answer to the question of copyrightability. Instead, its purpose is to enrich the ongoing discourse by offering a fresh perspective that delves into uncharted territory within the existing literature.

The reluctance to provide a definitive answer stems from the recognition of the diverse and often conflicting interests at play¹². On one hand, there is a need to incentivise innovation and creativity by granting legal protections to creators of AI-generated works. On the other hand, there is a desire to ensure that the public domain remains vibrant and accessible, fostering a culture of

¹¹ Sonya del Peral, 'Using Copyrighted Visual Works in Collage: A Fair Use Analysis' (1989) 54 Albany Law Review 141.

¹² Russ Pearlman, 'Recognizing Artificial Intelligence (AI) as Authors and Investors under U.S. Intellectual Property Law' (2017) 24 Richmond Journal of Law & Technology i.

collaboration and knowledge sharing. Additionally, considerations of fairness and equity weigh heavily, particularly in light of the potential economic and societal impacts of AI-generated content.

By refraining from presenting a definitive stance, this article seeks to encourage critical thinking and dialogue among stakeholders, including policymakers, legal scholars, industry professionals, and creators. It acknowledges the inherent uncertainty surrounding AI-generated works and the need for nuanced, context-specific approaches to copyright law. Moreover, it recognizes the evolving nature of technology and the legal landscape, necessitating ongoing reflection and adaptation of legal frameworks.

In advancing the discussion, this article endeavours to shed light on overlooked aspects of the copyright debate, challenging existing assumptions and paradigms, in order to provide new insights and perspectives that may inform future policy decisions and legal interpretations.

Ultimately, the goal is not to provide definitive answers but to stimulate intellectual inquiry and foster a deeper understanding of the complexities inherent in the copyrightability of AI-generated works. By contributing a fresh perspective to the discourse, this article aims to enrich the body of knowledge surrounding this critical issue and pave the way for informed and nuanced discussions moving forward.

In an era defined by rapid technological innovation and digital transformation, it is important to confront these legal challenges head-on, forging a path towards a more equitable and sustainable future for creators and consumers alike.

2. Originality of text prompts according to EU, UK, and US standards

A text prompt is an input provided to a generative AI system to guide its output in generating textual content.¹³ Text prompts serve as the starting point or catalyst for AI-generated text and can vary widely in format and complexity.¹⁴ Essentially, they provide the AI with context, direction, and parameters within which to operate, influencing the style, tone, and content of the resulting text.¹⁵

One example of a Text Prompt for a text-generating AI model, such as OpenAI's GPT-3 (Generative Pre-trained Transformer 3)¹⁶, could be as follows: "Write a short story about a time

¹³ Oppenlaender (n 9).

¹⁴ *Ibid.*

¹⁵ *Ibid.*

¹⁶ Tianyu Wu and others, 'A Brief Overview of ChatGPT: The History, Status Quo and Potential Future Development' (2023) 10 IEEE/CAA Journal of Automatica Sinica 1122.

traveller who discovers a hidden civilization in the future." In this example, the text prompt instructs the AI to generate a short story centred around the theme of time travel and discovery of a futuristic civilization. The prompt provides the AI with the main plot elements and themes to incorporate into its generated text, allowing it to produce a narrative that aligns with the given scenario.

One example of a Text Prompt for an AI system specialized in generating artistic content, such as DeepDream¹⁷ or StyleGAN¹⁸, a text prompt may take a slightly different form: "Create a surreal landscape painting inspired by the concept of dreams and imagination." In this case, the text prompt prompts the AI to generate a visual artwork—a landscape painting—that embodies the surreal and imaginative qualities associated with dreams. While the input is intended for generating visual art rather than textual content, the concept of the text prompt remains the same: to provide guidance and inspiration for the AI's creative output.

Text prompts play a crucial role in shaping the output of generative AI systems by providing them with direction and context. Whether generating text-based narratives or visual artworks, the specificity and clarity of the text prompt influence the quality, coherence, and relevance of the AI-generated content.

In this sense, it is important to specify that the classification of text prompts as copyrightable material makes us question first whether they can be considered original literary works rather than mere instructions or functional content. While instructions themselves are not eligible for copyright protection due to their utilitarian nature, text prompts may transcend this limitation by incorporating a creative element that goes beyond mere functional direction.

According to the United States Copyright Office Compendium, mere listings of ingredients or directions are not copyrightable, as lists lack protection under copyright law (chapter 313.4(F)). As an example, courts have consistently ruled that recipes, being factual and functional, do not meet the threshold for copyright protection. For instance, in *Tomaydo-Tomahdo, LLC v. Vozary*¹⁹, the Sixth Circuit emphasized that ingredients and instructions in recipes are factual statements and thus ineligible for copyright protection.

¹⁷ Rakhi Bhardwaj and others, 'Creative AI Using DeepDream' in Subarna Shakya and others (eds), *Fourth International Conference on Image Processing and Capsule Networks* (Springer Nature 2023).

¹⁸ Zongze Wu, Dani Lischinski and Eli Shechtman, 'StyleSpace Analysis: Disentangled Controls for StyleGAN Image Generation' (2021)

<https://openaccess.thecvf.com/content/CVPR2021/html/Wu_StyleSpace_Analysis_Disentangled_Controls_for_StyleGAN_Image_Generation_CVPR_2021_paper.html> accessed 10 February 2024.

¹⁹ *Tomaydo-Tomahdo LLC v. George Vozary*, No. 15-3179 (6th Cir. 2015)

However, the Seventh Circuit, in *Publications Int'l., Ltd. v. Meredith Corp.*²⁰, acknowledged that some recipes may be copyrightable if they contain substantial literary expression beyond basic directions. This suggests that recipes with additional elements, such as explanations, personal anecdotes, or detailed instructions, may qualify for copyright protection²¹. This requirement for "substantial literary expression" explains why many food and recipe bloggers often include narratives alongside their recipes²².

Text prompts, particularly those used in generative AI systems, often involve a degree of creativity and expression on the part of the author. They serve as more than simple instructions, providing artistic direction and guidance to the AI system in generating original content. As such, they bear resemblance to literary works, encompassing elements of creativity, expression, and originality.

By framing text prompts as artistic directions rather than functional directions, it becomes more plausible to argue for their classification as literary works eligible for copyright protection. Just as a script or screenplay guides the creation of a film or play, text prompts guide the creation of AI-generated content, imbuing them with a creative and expressive character that warrants copyright consideration.

The determination of copyrightability for text prompts depends on their individual characteristics and the context in which they are used. While some may exhibit sufficient originality and creativity to merit copyright protection as literary works, others may be more akin to functional instructions and therefore ineligible for such protection. As with any copyright analysis, a nuanced examination of the specific circumstances and attributes of the text prompts in question is necessary to reach a definitive conclusion.

Indeed, the originality of text prompts is a complex and multifaceted issue that might vary across different jurisdictions. Each jurisdiction has its own legal framework and standards for assessing the originality of creative works, including text prompts. Here, we delve into the analysis of three distinct jurisdictional approaches: the European Union (EU) standard, the United Kingdom (UK) standard, and the United States (US) standard.

2.1 EU Standard - Author's Own Intellectual Creation:

²⁰ *Publications Intern. Ltd. v. Meredith Corp.*, 88 F. 3d 473 (7th Cir. 1996)

²¹ *Ibid.*

²² Courtney Lang, 'Are Recipes and Cookbooks Protected by Copyright?' (*Copyright Alliance*, 9 March 2021) <<https://copyrightalliance.org/are-recipes-cookbooks-protected-by-copyright/>> accessed 12 February 2024.

In the EU, the standard for originality is grounded in the notion of the author's own intellectual creation²³. This standard, established by the Court of Justice of the European Union (CJEU), requires that a work reflects the author's personality and creative choices. In the context of text prompts for AI-generated works, the EU standard would likely focus on whether the prompt exhibits sufficient creativity and individuality attributable to the human author. Factors such as the novelty, imagination, and personal touch of the prompt would be considered in determining its originality.

In the landmark case of *Infopaq International A/S v. Danske Dagblades Forening*²⁴, the ECJ addressed the issue of whether the scanning and indexing of short text excerpts for news reporting purposes constituted copyright infringement. The ECJ's ruling established that copyright protection can extend to short textual excerpts if they exhibit originality in their selection and arrangement, even if individually they are brief.²⁵

This precedent highlights the notion that originality does not necessarily require extensive or lengthy creative expression. Instead, it emphasizes the significance of creative effort and intellectual input, regardless of the brevity of the work²⁶. In the context of text prompts for AI-generated works, this perspective suggests that even short phrases or expressions crafted with creativity and individuality may qualify as original works deserving of copyright protection.

By recognizing the potential originality of short text prompts, stakeholders in the field of AI and copyright law can appreciate the diverse forms of creative expression and innovation inherent in content generation. This understanding encourages a more inclusive approach to assessing originality, one that acknowledges the creative potential of even the most concise textual elements.

Moreover, the *Infopaq* precedent highlights the importance of context and interpretation in determining originality. While length may be a factor to consider, it is not determinative. Instead, the focus should be on the qualitative aspects of creativity, such as novelty, creativity, and individuality, inherent in the text prompt.

In summary, the *Infopaq* precedent provides valuable guidance on the scope of originality within the EU jurisdiction, particularly concerning short textual expressions. By recognizing the creative potential of concise text prompts, stakeholders can foster a more nuanced understanding of

²³ Eleonora Rosati, 'Why Originality in Copyright Is Not and Should Not Be a Meaningless Requirement' (2018) 13 *Journal of Intellectual Property Law & Practice* 597.

²⁴ Case C-5/08 *Infopaq International A/S V Danske Dagblades Forening*

²⁵ *Ibid.*

²⁶ Jane C Ginsburg, 'Overview of Copyright Law' (1 July 2016) <<https://papers.ssrn.com/abstract=2811179>> accessed 10 February 2024.

originality in the context of AI-generated works, ultimately contributing to the development of copyright law in the digital age.

2.2 UK Standard – between Skill, Labour, and Judgment and *Infopaq*

The United Kingdom (UK) has historically adhered to the standard of skill, labour, and judgment when determining the originality of creative works, as established through milestone cases in copyright law. Notable cases include *Walter v. Lane* (1900)²⁷ and *University of London Press v. University Tutorial Press* (1916)²⁸, which emphasized the importance of human effort and intellectual input in creating original works. According to UK copyright law, a work was considered original if it demonstrates a significant degree of skill, labour, and judgment on the part of the author²⁹.

However, the landscape of originality in the UK underwent significant changes following its membership in the European Union (EU). The *Infopaq* case in the EU introduced the standard of the author's own intellectual creation, which emphasized the subjective creativity of the author.

With the UK's departure from the EU through Brexit, questions arose regarding the coherence of its copyright standards with those of the EU. The UK initially adhered to the author's own intellectual creation standard during its EU membership, and it continued to apply this standard post-Brexit.

However, the application of this standard to emerging technologies, such as text prompts and AI-generated art, may differ from the European approach. Section 9(3) of the Copyright, Designs and Patents Act 1988 (CDPA) specifically addresses computer-generated works³⁰. This provision suggests that the UK may adopt a distinct approach to assessing the originality of AI-generated content compared to the EU.

In summary, while the UK has historically relied on the skill, labour, and judgment standard for determining originality, the post-Brexit landscape raises questions about the alignment of its copyright standards with those of the EU. If the standard for originality was the concept of skill, labour, and judgment, in the context of text prompts, the focus would be on the effort and creative decision-making involved in crafting the prompt. Factors such as the complexity, ingenuity, and expertise required to formulate the prompt would be relevant in assessing its originality under such

²⁷ *Walter v Lane* [1900] A.C. 539

²⁸ *University of London Press v University Tutorial* [1916] 2 Ch 601

²⁹ Andreas Rahmatian, 'Originality in UK Copyright Law: The Old "Skill and Labour" Doctrine Under Pressure' (2013) 44 IIC - International Review of Intellectual Property and Competition Law 4.

³⁰ "In the case of a literary, dramatic, musical or artistic work which is computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken."

a standard. On the contrary, aligning to *Infopaq* might ensure more harmonisation with EU, but also a higher standard to recognise originality in text prompts.

2.3 US Standard - Modicum of Creativity:

In the US, the Supreme Court decision in *Feist Publications, Inc., v. Rural Telephone Service Co.*³¹ clarified the requirements for copyright protection in compilations, and its implications can potentially impact the originality of text prompts. The *Feist* case established that copyright protection hinges on creativity rather than mere effort or labour. In other words, the "sweat of the brow" doctrine, which previously suggested that significant effort alone could warrant copyright protection, was rejected³².

This ruling has significant implications for the originality of text prompts, particularly in scenarios where the prompts involve the collection or compilation of factual information. If a text prompt merely involves mechanical or non-selective aggregation of facts, akin to the alphabetical listing of phone numbers in the *Feist* case, it may not meet the threshold of creativity required for copyright protection.

Therefore, in assessing the originality of text prompts, one must consider whether they exhibit a sufficient degree of creativity beyond mere effort or labour. Text prompts that involve unique, imaginative, or innovative elements are more likely to meet the standard for copyright protection. Conversely, prompts that lack creativity or involve straightforward compilations of factual data may not qualify for copyright protection under the principles established in the *Feist* case.

Overall, while the *Feist* decision does not directly dictate the originality of text prompts, it underscores the importance of creativity in copyright law³³. Text prompts that demonstrate originality and creativity are more likely to be considered copyrightable, while those that lack these elements may not meet the threshold for protection.

The focus would be on whether the prompt exhibits even a minimal level of originality or creative spark. Factors such as the selection, arrangement, and expression of ideas within the prompt would be considered in determining its originality under the US standard.

2.4 Text prompt: potentially a creative, intellectual creation. So what?

³¹ *Feist Publications, Inc. v. Rural Telephone Service Co.* 499 U.S. 340.

³² Jane C Ginsburg, 'No Sweat Copyright and Other Protection of Works of Information after *Feist v. Rural Telephone*' (1992) 92 *Columbia Law Review* 338.

³³ Julian Warner, *Copyright, Data and Creativity in the Digital Age: A Journey through Feist* (Routledge 2020).

The consideration of text prompts as original in the three jurisdictions analysed - the EU, UK, and US - hinges on the respective standards for originality and creativity within each legal framework. In the EU, originality is tied to the expression of the author's own intellectual creation. This standard allows for even short prompts to be deemed original if they reflect the author's creative input. Similarly, in the UK, even in the hypothesis that the skill, labour, and judgment standard apply in place of the *Infopaq* standard, text prompts can still be considered original if they demonstrate the author's effort and creative decision-making in their creation process. In the US, where creativity is a key criterion for copyright protection, text prompts must possess a sufficient level of creativity to attract copyright.

However, the mere fact that someone can claim copyright over a text prompt does not automatically confer protection over the AI output generated using that prompt. Copyright protection extends only to the expression of ideas, not the ideas themselves³⁴. Therefore, while the text prompt may be protected as a literary work, the resulting AI output may constitute a separate and distinct work deserving of its own copyright protection. This means that the author of the text prompt may have copyright over the prompt itself, but not necessarily over the AI-generated content produced in response to it.

The consequences of claiming copyright protection over text prompts can vary depending on the jurisdiction and the specific circumstances. By asserting copyright over a text prompt, the author gains certain exclusive rights, such as the right to reproduce, distribute, and publicly display the prompt³⁵. However, these rights may not extend to the works created by AI systems using the prompt. As a result, the author may not have control over or ownership of the AI-generated content, which may raise questions of attribution, licensing, and infringement.

Furthermore, claiming copyright over text prompts may have implications for the development and use of AI systems. Copyright protection over prompts could potentially limit the ability of others to use similar prompts for generating their own AI outputs, thus stifling innovation and creativity in the AI field. Additionally, disputes over the ownership and authorship of AI-generated works may arise, leading to legal uncertainty and litigation.

In the following section, we will delve deeper into these implications and explore the complexities of copyright ownership and authorship in the context of AI-generated content.

³⁴ Edward Samuels, 'The Idea-Expression Dichotomy in Copyright Law' (1988) 56 Tennessee Law Review 321.

³⁵ As for the EU, see the Directive on Copyright in the Digital Single Market (Directive 2019/790), which harmonizes copyright laws across EU member states, and the EU Copyright Directive (Directive 2001/29/EC). As for the UK, see the Copyright, Designs and Patents Act 1988 (CDPA). Regarding the US, see the Copyright Act of 1976, as amended.

3. Analysing the correlation between text prompts and AI-generated output

The correlation between text prompts and AI's outputs from a technical perspective can vary depending on several factors. Generally, when an AI system receives the same text prompt, it may not always produce identical outputs³⁶. This variability can stem from the inherent nature of AI algorithms, which may incorporate randomness or probabilistic elements, resulting in slightly different outcomes for similar prompts³⁷. Additionally, the AI's training data, learning algorithms, and model architecture can influence its responses to text prompts.

For text-based AI models, such as language models trained on large datasets, the responses to text prompts may exhibit some degree of consistency but also contain variations. While certain prompts may evoke specific responses due to the model's learned associations, there is still room for interpretation and creativity within the AI's processing mechanisms³⁸. Furthermore, AI models may prioritize certain aspects of the prompt or introduce novel elements based on contextual cues or inferred meanings, leading to diverse outputs.

In the case of AI-generated artistic works, such as images or music, the relationship between text prompts and outputs may be more complex³⁹. While text prompts can provide thematic or stylistic guidance to the AI, the interpretation and translation of these prompts into artistic expressions involve subjective and creative decisions⁴⁰. As a result, different individuals may receive distinct outputs from the same text prompt, reflecting the AI's interpretative flexibility and artistic freedom.

However, despite the potential variations in AI outputs, there may still be overarching patterns or tendencies in the responses to text prompts⁴¹. AI models often exhibit consistency in their style, tone, or thematic elements across different outputs, reflecting their underlying training data and

³⁶ Vivian Liu and Lydia B Chilton, 'Design Guidelines for Prompt Engineering Text-to-Image Generative Models', *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems* (Association for Computing Machinery 2022) <<https://dl.acm.org/doi/10.1145/3491102.3501825>> accessed 12 February 2024.

³⁷ *Ibid.*

³⁸ 'RePrompt: Automatic Prompt Editing to Refine AI-Generative Art Towards Precise Expressions | Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems' <<https://dl.acm.org/doi/abs/10.1145/3544548.3581402>> accessed 12 February 2024.

³⁹ Oppenlaender (n 9).

⁴⁰ Minsuk Chang and others, 'The Prompt Artists', *Proceedings of the 15th Conference on Creativity and Cognition* (Association for Computing Machinery 2023) <<https://dl.acm.org/doi/10.1145/3591196.3593515>> accessed 12 February 2024.

⁴¹ Ayush Chauhan and others, 'Image Multidiffusion Algorithms for AI Generative Art', *2023 6th International Conference on Contemporary Computing and Informatics (IC3I)* (2023) <<https://ieeexplore.ieee.org/abstract/document/10397719>> accessed 12 February 2024.

learned preferences. Additionally, certain prompts may elicit more predictable or formulaic responses, while others may inspire more innovative or unexpected outcomes⁴².

Based on the standards of originality analysed in the precedent part, and the technical aspects introduced here, in the following paragraphs the philosophical justifications of copyright and the principle of idea-expression dichotomy are used to provide a framework for evaluating the originality of text prompts and, consequently, AI's outputs. These principles emphasize the distinction between ideas and their expression, suggesting that copyright protection should extend only to the latter. In the context of AI-generated works, this distinction becomes particularly relevant when assessing the creative contributions of text prompts and the resulting outputs. By considering both the underlying mechanisms of AI systems and the conceptual underpinnings of copyright law, we can gain deeper insights into the complexities of creativity, authorship, and ownership in the digital age.

3.1 Philosophical justifications of copyright and their application to text prompts and AI-generated outputs

Locke's labour theory of property provides a foundation for justifying copyright by emphasizing the individual's right to the fruits of their labour⁴³. In the context of AI-generated works, one could argue that the author of a text prompt invests their intellectual effort and creativity, akin to labour, in crafting the prompt. Therefore, they should be entitled to copyright protection over the resulting AI output. However, Locke's proviso introduces a limitation, suggesting that monopolizing resources to the detriment of others would harm society⁴⁴. Applying this to text prompts, one could argue that granting copyright protection over prompts could restrict access to essential inputs for AI-generated works, stifling innovation and creativity.

Hegel's personality theory posits that creative works are an expression of the author's personality and therefore deserve protection⁴⁵. However, the margin of discretion between text prompts and AI outputs may challenge this link between the author and the AI-generated input. Some might argue that the AI's role in generating the output diminishes the author's direct involvement and personal expression, thereby weakening the justification for copyright protection.

⁴² Chang and others (n 40).

⁴³ Gordon Hull, 'Clearing the Rubbish: Locke, the Waste Proviso, and the Moral Justification of Intellectual Property' (2009) 23 Public Affairs Quarterly 67.

⁴⁴ *Ibid.*

⁴⁵ Jeanne L Schroeder, 'Unnatural Rights: Hegel and Intellectual Property' (2005) 60 University of Miami Law Review 453.

Contrary to this view, others may argue that Kant's philosophy supports copyright protection over AI-generated output. Kant believed that authors have a *jus personalissimus*, or a deeply personal right, in their works because they are an expression of their personality⁴⁶. Even if AI is involved in the creative process, the text prompt provided by the author still reflects their unique creative intent and personality. Therefore, copyright protection over AI-generated output could be justified as an extension of the author's personality rights.

In summary, while Locke's labour theory highlights the importance of labour and effort in justifying copyright, his proviso raises concerns about monopolization. Hegel's personality theory underscores the intimate connection between creators and their works, but the involvement of AI may challenge this link. Kant's philosophy of *jus personalissimus* suggests that copyright protection could still apply to AI-generated output if it reflects the author's personality and creative expression. Ultimately, the application of these philosophical principles to AI-generated works requires careful consideration of the balance between individual rights, societal interests, and technological innovation. Indeed, natural rights philosophers are not the only justification theories for copyright. In the next paragraph, we will consider utilitarian theories.

3.2 Utilitarian justifications and copyrightability of AI-generated outputs

Utilitarian theories of copyright law are based on the idea that copyright laws should be designed to maximise public benefit by promoting innovation and access to culture⁴⁷. This entails balancing the interests of authors with those of the public, ensuring that creative works are protected enough to incentivize creativity, but also accessible enough to allow for the dissemination of knowledge and innovation⁴⁸. In other words, copyright should be structured to provide sufficient incentive for the creation of new works while also facilitating the free exchange of ideas and information within society⁴⁹. These theories can be used both to argue in favour of and against copyright protection for AI-generated works.

On one hand, proponents of copyright protection for AI-generated works based on utilitarian theories might argue that such protection incentivises investment in AI technology and fosters innovation. By granting copyright protection, creators and developers of AI systems are incentivized to invest time, resources, and expertise into developing sophisticated algorithms capable of generating high-quality creative content. This investment contributes to the

⁴⁶ Anne Barron, 'Kant, Copyright and Communicative Freedom' (2012) 31 *Law and Philosophy* 1.

⁴⁷ William Fisher, 'THEORIES OF INTELLECTUAL PROPERTY'.

⁴⁸ *Ibid.*

⁴⁹ *Ibid.*

advancement of AI technology, leading to the creation of more sophisticated and diverse AI-generated works that enrich cultural and artistic landscapes. In this way, copyright protection can be seen as a mechanism for promoting progress in the field of artificial intelligence and encouraging continued innovation.

Furthermore, proponents may argue that copyright protection for AI-generated works aligns with the principle of economic rewards for authors, ensuring that creators are fairly compensated for their contributions. While AI systems play a significant role in the creative process, human creators are still involved in providing the initial input, crafting the parameters, and refining the outputs. Therefore, granting copyright protection acknowledges the creative input and effort of human authors, providing them with economic incentives to continue producing valuable content and contributing to cultural and artistic endeavours.

On the other hand, opponents of copyright protection for AI-generated works based on utilitarian theories might argue that such protection could stifle innovation and creativity by creating barriers to access and hindering the free flow of information. Copyright protection grants exclusive rights to creators, limiting public access to AI-generated works and potentially hindering further development and improvement of AI technology. Additionally, copyright protection for AI-generated works may lead to monopolistic practices, where a few entities control access to and distribution of creative content, stifling competition and diversity in the marketplace.

Furthermore, opponents may argue that copyright protection for AI-generated works based on economic rewards for authors may not be justified, as AI systems do not possess the same rights and interests as human creators. Unlike human authors who rely on creative expression as a means of livelihood, AI systems do not have economic needs or interests. Granting copyright protection to AI-generated works may therefore be seen as unjustified, as it does not serve the purpose of incentivising creative output or rewarding human authors for their labour.

In conclusion, the question of whether copyright protection for AI-generated works is justified based on utilitarian theories such as incentive and economic rewards for authors is complex. While copyright protection may incentivize investment in AI technology and provide economic incentives for human creators, it may also pose challenges in terms of access and innovation.

3.3 Text prompts and AI-generated outputs: where is the idea, and whose expression?

The idea-expression dichotomy is a fundamental principle in copyright law that distinguishes between the underlying idea or concept of a work and the specific expression or manifestation of

that idea⁵⁰. In the context of text prompts and AI-generated outputs, applying the idea-expression dichotomy involves considering whether copyright protection should be afforded to the creative expression contained within the prompts and/or outputs.

Arguing in favour of recognising the author's expression in both text prompts and AI-generated outputs, proponents may assert that both elements involve a significant degree of creative input and originality on the part of the human author. Text prompts are crafted by authors to elicit specific responses from AI systems, requiring creative decision-making and linguistic skill to formulate precise instructions. Similarly, AI-generated outputs reflect the unique interpretation and synthesis of input data by AI algorithms, often producing results that exhibit characteristics of creativity and originality. By recognising the author's expression in both text prompts and AI-generated outputs, copyright law can protect the creative labour and ingenuity invested by human authors in shaping the content and direction of AI-generated works.

On the other hand, recognising the author's expression in either text prompts or AI-generated outputs could be opposed based on the mechanical or algorithmic nature of AI systems and the lack of direct human involvement in the creation process. Text prompts, one may argue, might serve as functional instructions or parameters rather than creative expressions in themselves, functioning more as tools or inputs to guide AI systems rather than original works deserving of copyright protection. Similarly, AI-generated outputs are the result of computational processes and data analysis, which may lack the subjective creativity and intentionality typically associated with human-authored works. In this view, extending copyright protection to either text prompts or AI-generated outputs could create legal uncertainties and impede the free flow of information and ideas, ultimately hindering innovation and creativity in AI development.

The application of the idea-expression dichotomy to text prompts and AI-generated outputs involves balancing competing interests and considerations, including the recognition of human creativity, the promotion of innovation, and the protection of public access to information. While recognising the author's expression in both elements may provide incentives for creative input and investment in AI technology, it may also pose challenges in terms of defining and delineating the boundaries of copyright protection in the digital age. As such, the debate surrounding the application of the idea-expression dichotomy to text prompts and AI-generated outputs requires careful consideration of legal, technological, and philosophical perspectives.

⁵⁰ Samuels (n 34).

Recognising text prompts as original expressions could be sensible due to the creative effort and intellectual input involved in crafting them. Authors invest time, thought, and linguistic skill into formulating prompts that guide AI systems to generate specific outputs. However, granting copyright protection to text prompts may lead to monopolisation if authors assert exclusive rights over commonplace or generic prompts, limiting access to essential tools for AI development and hindering innovation in the field. Moreover, the sheer volume of text prompts generated daily in AI development may overwhelm the copyright system.

Similarly, recognising AI outputs as original expressions raises concerns about over rewarding AI systems and the potential for disputes over authorship and ownership. While AI-generated works may exhibit characteristics of creativity and originality, they lack, to an extent, the subjective intentionality and personal investment associated with human-authored works. This raises questions about whether AI systems should be granted the same legal standing as human authors and whether AI developers or users should be considered the rightful owners of AI-generated outputs.

Indeed, while we mainly focused on users and text prompts, the role of AI developers in the creation of AI-generated works raises important concerns regarding authorship and ownership. One potential solution is to allocate co-authorship and co-ownership of AI-generated works to both the user and the developer or owner of the AI system. This approach acknowledges the significant contribution of the AI in the creative process while also recognizing the role of the developer in creating and maintaining the AI technology.

Assigning co-authorship and co-ownership to both parties reflects the collaborative nature of AI-generated works. The developer's role in designing and training the AI system is essential to its functionality and output. Therefore, it could be argued that the developer should be considered a co-author, as they have made arrangements for the work's creation (non-casual mention of CDPA section 9(3)).

However, there are potential drawbacks to this approach. Granting ownership to AI developers for every work generated by users could lead to over rewarding developers, especially in cases where the AI system is widely used and produces a large volume of works. Additionally, developers and owners already benefit from intellectual property protections for the AI technology itself, raising questions about the need for additional ownership rights over the generated works.

From a policy perspective, considerations such as the balance of incentives for innovation, the fair allocation of rights, and the impact on creative industries should be carefully evaluated to ensure that any proposed approach aligns with broader societal goals and values.

Despite these challenges, conferring some degree of protection on AI-generated works where they represent the author's own intellectual creation and creativity seems desirable. It acknowledges the value of human input in guiding and shaping AI systems and encourages investment in AI technology and innovation. However, striking the right balance between incentivising creativity and ensuring access to AI-generated content for societal benefit remains a complex task.

In the following section, we will explore the copyright regime for collage as a potential framework for understanding and addressing some of the challenges surrounding copyright in AI-generated works. Collage, like AI-generated works, involves the combination and transformation of pre-existing elements to create new and original expressions. By examining how copyright law has evolved to accommodate collage and similar artistic practices, we can draw parallels and insights that may inform the development of copyright policies and principles for AI-generated works.

4. Drawing parallels: copyright protection for collage and authorship of AI-generated outputs

The copyright regime for collages in the EU, UK, and US generally follows similar principles, although there may be some differences in specific laws and case law interpretations. In the EU, copyright protection for collages is governed by the EU Copyright Directive (2001/29/EC), which harmonizes copyright laws across member states. According to the Directive, collages are considered original works and are protected as such. The Directive grants authors the exclusive right to authorize or prohibit the reproduction, distribution, and communication to the public of their collages. The Directive does not specifically define collages but recognizes them as original works of authorship. Collages typically involve the juxtaposition or arrangement of pre-existing materials in a way that creates a new and unique artistic expression. In the UK, copyright protection for collages is provided under the CDPA 1988. Collages are considered original artistic works and are protected as such under the CDPA⁵¹. Copyright protection for collages extends to both two-dimensional and three-dimensional works, and it covers both traditional and digital collages. In

⁵¹ “4 - (1) In this Part “artistic work” means—

(a) a graphic work, photograph, sculpture or **collage**, irrespective of artistic quality,

(b) a work of architecture being a building or a model for a building, or

(c) a work of artistic craftsmanship.” Available at

<https://www.legislation.gov.uk/ukpga/1988/48/part/I/chapter/I/crossheading/descriptions-of-work-and-related-provisions> accessed 12.2.2024.

the US, copyright protection for collages is governed by the Copyright Act of 1976. Collages are considered derivative works under the Act, which means they are based on pre-existing works but contain original elements added by the creator. In essence, they are works defined as works based on pre-existing materials but containing original elements added by the creator. Collages typically involve the selection, arrangement, and combination of visual elements from various sources to create a new and original artistic expression. As derivative works, collages are protected by copyright law, and creators have the exclusive rights to reproduce, distribute, and display their collages.

The case *The Andy Warhol Foundation for The Visual Arts, Inc. v. Lynn Goldsmith, et al.* is emblematic to understand the US approach to collage⁵². The legal dispute between photographer Lynn Goldsmith and the Andy Warhol Foundation concerned Warhol's use of Goldsmith's photograph of musician Prince. Initially, the district court ruled in favour of the Foundation, deeming Warhol's Prince Series to be transformative and therefore constituting fair use⁵³. This decision was based on the argument that Warhol's artworks portrayed Prince in a drastically different manner from Goldsmith's original photograph, thus transforming him into an iconic figure.

However, on appeal, Goldsmith prevailed as the Second Circuit Court of Appeals deemed Warhol's use of the photograph to be non-transformative and therefore not fair use. The court emphasised that the Prince Series works were substantially similar to Goldsmith's photograph and served the same function as a portrait of the singer⁵⁴.

In assessing whether a collage qualifies as fair use, courts consider various factors, including the commercial nature of the use, the nature of the original work, the amount used, and the effect on the potential market for the original work⁵⁵. However, the most crucial factor is whether the new work is transformative. Collages that incorporate multiple materials from different sources, arrange them in novel ways, and create new visual or conceptual effects are more likely to qualify as fair use. Additionally, the less the copyrighted material is the central focus of the collage, and the more it is used in a limited or transformative manner, the stronger the argument for fair use becomes.

⁵² Richard Epstein, 'Sequential Uses of Copyrighted Materials: Transforming the Transformative Use Doctrine In Andy Warhol Foundation v. Lynn Goldsmith' (29 September 2022) <<https://papers.ssrn.com/abstract=4233461>> accessed 12 February 2024.

⁵³ Alyssa Weitkamp, 'Andy Warhol Foundation v. Goldsmith' (2022) 32 DePaul Journal of Art, Technology and Intellectual Property Law 123.

⁵⁴ Molly Torsen Stech, 'A REFLECTION ON THE WARHOL FOUNDATION V. LYNN GOLDSMITH.' (2021) 26 Art Antiquity & Law 161.

⁵⁵ Weitkamp (n 53).

The underlying principles that allow recognition of copyright to collages can be applied to justify copyright protection for AI-generated outputs to some extent. Firstly, in terms of originality: just like collages, AI-generated outputs can exhibit originality by incorporating elements from various sources (i.e. copyrighted material processed during the training phase) and arranging them in a unique and creative manner. AI algorithms can process input data or prompts and generate new content that reflects creative choices made by the author of the text prompt and the AI system.

In terms of creative expression, AI-generated outputs often involve the selection, arrangement, and combination of data or prompts to create something new and original. This creative expression, even if facilitated by algorithms, reflects the input and choices made by the human creators who design, train, and control the AI systems.

Moreover, regarding authorship, while traditional notions of authorship may be challenged in the context of AI-generated works, copyright law can still recognize the contributions of human creators involved in the development and use of AI systems. Just as collage artists are credited as the authors of their works, individuals or entities responsible for providing the input data, designing the algorithms, or controlling the AI systems can be considered authors of AI-generated outputs.

The concept of derivative works is also relevant: like collages, which are considered derivative works based on pre-existing materials, AI-generated outputs can be seen as derivative works that build upon existing data, prompts, and algorithms. While the individual components may not be subject to copyright protection, the unique combination and transformation of these elements by AI systems can result in a new and copyrightable work.

In relation to originality threshold, as we have seen copyright law requires a minimal level of originality for works to be eligible for protection, that differs depending on the jurisdiction. Just as collages must exhibit a sufficient degree of creativity to qualify for copyright, AI-generated outputs must also meet this originality threshold. While the exact standard may vary between jurisdictions, AI-generated works that demonstrate a significant level of creativity and novelty should be eligible for copyright protection.

4.1 Challenges and limitations

Applying copyright protection to AI-generated works based on the collage principle implies recognising a certain level of creativity on the part of the author in curating text prompts and/or AI-generated outputs. The concept of collage in copyright law traditionally involves the selection, arrangement, and combination of pre-existing elements to create a new and original work.

Similarly, in the context of AI-generated content, the human intervention in crafting text prompts or selecting and refining AI-generated outputs represents a creative act that contributes to the uniqueness of the final composition.

By attributing copyright protection to AI-generated works akin to collages, we acknowledge the significant role of human agency and creative input in the creative process. While AI algorithms may autonomously generate content based on predefined parameters, the direction provided by the author in the form of text prompts or input parameters shapes the nature and quality of the output. This human intervention introduces an element of originality and individual expression that could warrant legal recognition and protection under copyright law.

Moreover, treating AI-generated works as collages could be based on the importance of the author's creative choices and aesthetic judgments in the composition of the final product. Just as a collage artist selects and arranges visual elements to evoke a specific mood or convey a particular message, the author of AI-generated content exercises discretion and discernment in guiding the output towards a desired outcome. This conscious act of curation imbues the work with a distinct character and identity that reflects the author's creative vision.

However, it's essential to acknowledge the nuanced nature of AI-generated works and the complex interplay between human agency and machine-generated content. While the author's input may guide the creative process, AI algorithms also play a significant role in generating and shaping the final output. This type of collaborative dynamic challenges traditional notions of authorship and originality, raising important questions about the appropriate scope of copyright protection in the digital age.

Requiring a certain level of human intervention to justify copyright protection poses practical problems. When it comes to AI-generated content, the degree of human involvement in the creative process can vary significantly, ranging from minimal input to extensive guidance and refinement. However, attempting to quantify and qualify the level of human intervention required to warrant copyright protection poses a formidable challenge for judges and legal practitioners.

The term "probatio diabolica" properly captures the impractical task of retrospectively assessing the extent of human contribution to AI-generated works. In cases where the resulting output is highly creative and original, such as an artwork or a novel, distinguishing between instances of minimal human effort and those involving more substantial authorial input becomes exceedingly difficult. Judges would be tasked with discerning the nuances of the creative process, often without clear guidelines or precedents to guide their decision-making.

Moreover, the time-intensive nature of creative endeavours further complicates the issue of assessing human intervention in AI-generated works. While some compositions may appear to require minimal effort on the surface, they may actually be the culmination of weeks or even months of meticulous planning and experimentation behind the scenes. Conversely, works that appear to be the product of extensive human labour may, in fact, be generated with minimal input through the use of advanced AI algorithms.

This inherent uncertainty surrounding the level of human intervention in AI-generated works presents a significant challenge in terms of legal certainty. In the absence of clear criteria or benchmarks for evaluating authorship and originality, judges are left to rely on subjective assessments and contextual considerations, introducing an element of unpredictability into copyright disputes. As a result, there is a risk of inconsistent rulings and divergent interpretations of copyright law, undermining the stability and predictability of the legal framework.

Addressing this challenge requires a nuanced approach that balances the need to protect creative expression with the realities of technological innovation. Legal frameworks must evolve to accommodate the unique characteristics of AI-generated content while upholding the principles of fairness, equity, and legal certainty. This may involve developing guidelines or principles that provide clarity on the attribution of authorship and the determination of originality in AI-assisted creativity, thereby promoting consistency and coherence in judicial decision-making.

Another limitation of the collage approach lays in the type of output: AI-generated works can be seen as transformative creations that result from the application of sophisticated algorithms and computational processes to input data or prompts. While the AI system may rely on existing information or patterns to generate outputs, the final product often exhibits novelty and originality that surpasses the sum of its individual components, unlike collages. In this sense, AI serves as a tool for amplifying human creativity, enabling users to explore new artistic possibilities and express themselves in innovative ways⁵⁶.

Moreover, the intent behind creating collages often involves artistic expression or commentary⁵⁷, whereas AI-generated works may be produced for various purposes, including commercial applications or data analysis. This difference in intent might complicate the assessment of originality and creativity.

⁵⁶ Zhuohao Wu and others, 'AI Creativity and the Human-AI Co-Creation Model' in Masaaki Kurosu (ed), *Human-Computer Interaction. Theory, Methods and Tools* (Springer International Publishing 2021).

⁵⁷ Justine Pila, 'An Intentional View of the Copyright Work' (2008) 71 *The Modern Law Review* 535.

Overall, while collages offer useful parallels for understanding certain aspects of AI-generated creativity, they do not fully capture the complexities and nuances of AI technology. As such, legal frameworks and interpretations must be tailored to address the unique challenges and opportunities presented by AI-generated works in the digital age.

5. Recommendations and conclusions

Text prompts, the cues or instructions provided to AI systems to generate specific content, can exhibit originality, as they often reflect the creativity, skill, and judgment of the human author. Similarly, AI-generated works can meet the standards of originality established in the EU, US, and UK (even if some jurisdictions, such as the US, have already denied copyright protection for AI-generated works, because of the lack of human authorship). The human touch behind the prompt may be discernible to some extent, especially in prompts that involve creative decision-making or express the author's intellectual creation.

However, establishing a clear link between the human author of the prompt and the resulting AI-generated work can be challenging. While personality theories like Locke's labour theory of property may support copyright protection for AI-generated works by recognizing the author's creative input, theories like Hegel's personality theory may pose difficulties due to the significant role played by AI in the creative process.

Utilitarian theories urge us to consider the broader societal impact of granting or denying copyright protection to AI-generated works. The creative industries, which contribute significantly to economic growth and employment, stand to be profoundly affected by decisions regarding copyrightability. Millions of jobs could be at stake, depending on the legal framework governing AI-generated content.

However, the question of authorship alone cannot fully resolve the copyrightability of AI-generated works. Further research is needed to analyse the interests of stakeholders in different creative industries, understand the practical implications of copyright recognition for AI-generated works, and explore alternatives that can be used to maintain a fair balance between competing interests. Among the various recommendations, applying the work made for hire doctrine to AI⁵⁸, and *sui generis* rights protection for generated works⁵⁹ could be considered.

⁵⁸ Kalin Hristov, 'Artificial Intelligence and the Copyright Dilemma' (2016) 57 IDEA: The Journal of the Franklin Pierce Center for Intellectual Property 431.

⁵⁹ Haochen Sun, 'Redesigning Copyright Protection in the Era of Artificial Intelligence' (2021) 107 Iowa Law Review 1213.

Clear rules regarding ownership of AI-generated works can help avoid disputes and provide creators with the confidence that their rights will be protected. This could involve defining the role of AI developers, users, and other stakeholders in the creation process. Specifically, developing copyright guidelines tailored to AI-generated can clarify the criteria for copyrightability, establish ownership rights, and outline the responsibilities of AI developers and users.

Similarly, implementing licensing agreements and royalty systems can ensure that creators receive fair compensation for their AI-generated works, as well as for copyrighted material used in the AI training⁶⁰. This can incentivise creators to continue producing high-quality content while providing a source of income.

Copyright collectives or collecting societies can represent the interests of creators and manage the licensing and distribution of AI-generated works. These organizations can streamline the process of obtaining permissions and royalties for both creators and users.

In order to ensure a fair balance, encouraging the use of open access models and Creative Commons licenses can facilitate the sharing and reuse of AI-generated works while respecting the rights of creators. These licensing options provide flexibility in how creators choose to distribute their works.

Exploring the use of AI technology and user historical data to substantiate authorship claims for AI-generated works represents a promising direction for future research. This avenue may necessitate the establishment of copyright registration mechanisms tailored to AI-generated works, a concept not currently prevalent in the EU and UK but one that could merit consideration. Such registration processes could involve the submission of specific documentation that shows the interaction between the human user and the AI system, including the definition of parameters and prompts provided by the user, as well as the resultant output intended for registration. By formalising these interactions and outcomes, copyright registration for AI-generated works could serve as a means to authenticate authorship and provide legal clarity in an increasingly AI-driven creative landscape.

⁶⁰ Christophe Geiger and Vincenzo Iaia, 'The Forgotten Creator: Towards a Statutory Remuneration Right for Machine Learning of Generative AI' (2024) 52 Computer Law & Security Review 105925.

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