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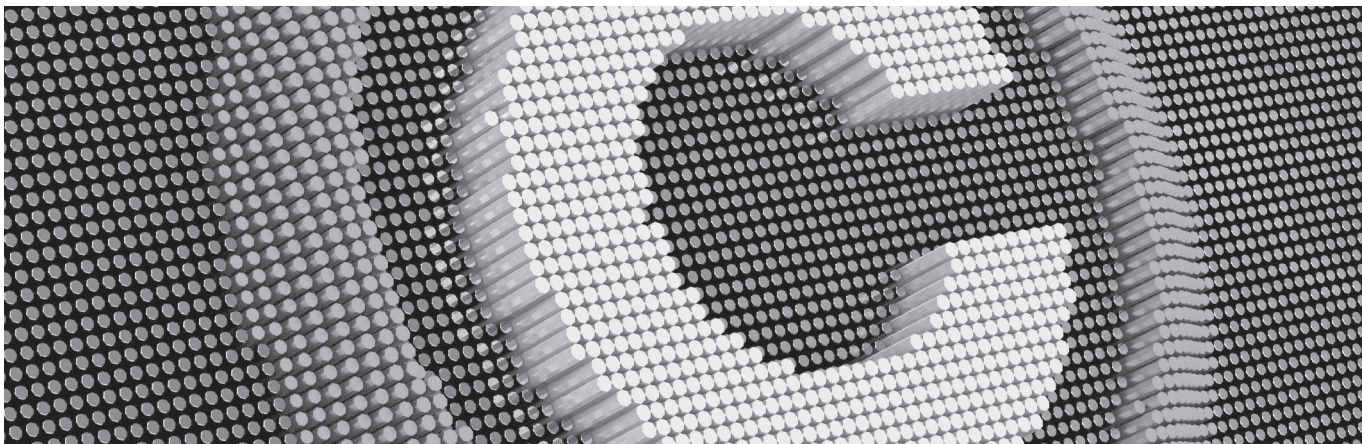
Practical cross-border insights into copyright law

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Copyright and AI: Creation Without a Creator



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1 Introduction

If the decade that spanned 2010–2020 was one dominated by the *technical* advance of artificial intelligence (“AI”), it seems likely that the next decade will be one marked by significant legal and regulatory development in response.

Of particular relevance is the possibility that AI is now, or soon will be, at a stage where human intervention in the process of creating outputs is minimal. This poses challenges to copyright regimes across the globe as it asks questions that touch on the *raison d'être* for copyright protection in our society. Through the use of AI technology, complex aspects of copyright law have also become intimately intertwined with broader decisions about industrial policy.

Copyright law has always needed to adapt to new technologies. The traditional creative pursuits of literature, art, drama and music have, over the years, been joined by more modern works such as sound recordings, films, broadcasts and computer programs, all made possible by the new technologies of the day. Whilst potentially contentious at the time, their addition as new copyright works was possible within the existing parameters of copyright regimes.

The use of AI to create outputs which resemble human works poses a different type of challenge. Often-cited examples of the use of AI include the Next Rembrandt Project (a Dutch project to use an AI system to create a painting in the style of Rembrandt) and Daddy’s Car (a Beatles-style song created by Sony using an AI system). The output might be recognisable, but the method of creation is not, and this leads us to question whether the output is protected by copyright, and if not, whether it should be protected.

Questions also arise in relation to AI inputs. Much of the current AI technology is based on machine learning, which attempts to replicate a human learning process, often by training a model to replicate patterns identified in training data. Where the training data is a work protected by copyright, we are faced with the question of whether copyright should prohibit the use of that work without a licence from the rights holder.

As AI continues to mature as a commercial tool, the economic effect of decisions taken in the context of copyright legislation regarding AI outputs and inputs will grow more significant. Several national and international bodies are in the process of consulting and reporting on these issues, attempting to balance various competing interests. AI technology is also driving legislative changes. From a UK perspective, the UK Intellectual Property Office (“UKIPO”) recently held a call for views on AI in copyright and related rights¹. However, the UK is not alone; the interface between AI and copyright law is being carefully considered by many governments and NGOs.

This chapter aims to provide an international snapshot of current discussions regarding: (1) copyright subsistence and ownership in works created with the assistance of AI technology; and (2) the availability of exceptions to the text and data mining activities which are often necessary for the development of new AI-powered tools.

2 Subsistence and Ownership of Copyright in AI Generated Works

Most jurisdictions do not make any specific provision in their copyright laws in relation to works created with the assistance of AI technology. For authorial literary and artistic works (i.e., those falling within the scope of the Berne Convention), protection requires more than just the creation of a particular type of subject matter, such as a painting or book. The process of creation of that subject matter must also pass a particular threshold, e.g., the subject matter must be sufficiently original or creative.

Originality or creativity requires some level of mental effort to have been expended in the creation of the work, such that it is not simply a copy of a prior work or a record of purely factual information. Although the threshold differs in its exact formulation across jurisdictions, the existence of a threshold is a settled core tenet of copyright law. In the UK the test was, for many years, whether the work was the result of its author’s “own skill, labour, judgment and effort”. In 2009 the Court of Justice of the European Union (“CJEU”) harmonised the originality threshold by way of its decision in *Infopaq*, requiring that a work protected by copyright is “its author’s own intellectual creation”². In the US the formulation of the test is whether the work “possesses at least some minimal degree of creativity”, following *Feist v Rural Telephone Service Co*³, and in China the requirement is for “intellectual creations with originality”⁴. Similar pre-conditions for copyright protection are seen globally, requiring some variation on the theme of creativity and intellectual contribution.

Much of the discussion around the application of copyright law to works created using AI technology has focused on the possibility of new works being created without a human author. This category of work (often referred to as “AI Generated Works”) requires us to consider – can there be an intellectual creation without an intellect, or creativity without a creator? While this question has not been conclusively settled in every jurisdiction, the prevailing opinion appears to be that copyright requires the existence of a human author. At the international level, commentators have suggested that the Berne Convention requires a work falling within its scope to have at least one natural person as an author. In Europe, under the line of case law which followed the CJEU’s *Infopaq* decision, the intellectual creation needed for copyright protection to arise in an original

work requires an expression of the author's personality, which would appear to exclude AI Generated Works from protection on the basis an AI does not have a personality capable of expression. Across the Atlantic, the U.S. Copyright Office's Compendium of Practices goes further, expressly stating that a work of authorship must be created by a human being and works which do not satisfy this requirement are not copyrightable.

However, this is not the end of the analysis. Distinct from AI Generated Works are works which are created by a human author using an AI system as a tool to implement their creation (often referred to as "AI Assisted Works"). With an apparent lack of copyright protection for AI Generated Works, the dividing line between AI Generated Works and AI Assisted Works becomes critical. With originality acting as the gatekeeper to copyright protection, the key question becomes whether a particular work is original where some aspects of the creation process were automated.

Some situations are clear cut; the use of speech-to-text dictation software by an author to dictate a novel involves a human author using an automated process as a tool to create a work. The involvement of an AI system in the process (speech recognition) does not affect our analysis of whether the novel is an original work. However, things become less clear as the level of automation increases and the human involvement decreases. Imagine, for example, a camera on a drone that provides auto white-balance and auto focus to produce the perfect shot when the shutter is pressed by the drone's operator. Now imagine that same camera placed on a drone with the ability to seek out and photograph a subject matter specified by the user. In the first case, the human operator of the camera frames the shot and the AI software is little more than a tool to improve the final image, which is clearly an AI Assisted Work. In the second, the camera improves the image but also seeks out and frames the shot. Would this be an AI Assisted Work or an AI Generated Work? Would it depend on how much input the operator was permitted in specifying the subject matter which the drone was instructed to capture? What if the drone malfunctioned in some way and captured an image not intended by its operator or the drone captured hundreds of images and the operator selected some to further enhance? The scope of the creative choices open to the operator when conceiving of the work, the causal link between that conception and the eventual work and the creative choices available to the operator in processing and reworking the work will all be relevant factors in assessing whether the work is an AI Assisted Work (qualifying for copyright protection) or an AI Generated Work (with no copyright protection).

However, the rabbit hole goes a little deeper still. A further level of complexity is introduced by the possibility that the developer of an AI system which is used by others to create works may themselves make creative choices when developing the system which are reflected in the works created when the system is used. The developer of our drone's AI could, for example, have trained the system in such a way as to always capture images with a certain aesthetic or composition which reflects a creative choice on their part. Could the photograph therefore be an AI Assisted Work with the developer as the author? If yes, would they be the sole author or a joint author with the drone operator?

There are no easy answers to these questions and each scenario will need to be determined on its facts by applying existing rules relating to originality and authorship. They do, however, demonstrate the increased burden which originality and authorship rules will be required to carry as AI technology increasingly moves into the mainstream of content creation with ever increasing sophistication.

It is also important to recognise that, in addition to offering copyright protection to authorial works (i.e., those which fall

under the Berne Convention), many jurisdictions offer protection to other categories of subject matter without a requirement for originality. These include the protection offered in many jurisdictions to films, sound recordings and broadcasts. Without a requirement for originality (e.g., an author's intellectual creation), the production of this subject matter by an AI system does not appear to preclude the granting of related rights protection.

Should AI Generated Works be protected?

While the prevailing view is that AI Generated Works are not currently protected by copyright, this leaves open the question of whether they *should* be protected.

Those arguing in favour of protection suggest that copyright should subsist in a creation regardless of whether it is human- or machine-made. They may see the purpose of copyright being to incentivise the creation and dissemination of works and ask whether there is any justification for discriminating against a particular category of work based on its method of production. They point to the potential for AI Generated Works to open up new markets for works or serve markets which are currently underserved by human authors, and ask whether excluding AI Generated Works from protection could act as a disincentive for their creation and dissemination.

Those arguing against protection for AI Generated Works emphasise that copyright is founded in the right of an author to protect their creations and is intended to incentivise and reward acts of *human* creativity. They highlight that AI systems are not persons with rights which need protecting and express concern that affording AI Generated Works the same status as those created by humans could undermine or stifle human creativity.

The divergence of opinion has led some commentators to suggest that copyright in the sense of authorial works under the Berne Convention could be reserved to human authors and AI Generated Works could be protected by their own related right. Granting a related, or *sui generis* right could, for example, allow for a bespoke economic right to incentivise investment in the creation and dissemination of AI Generated Works while maintaining copyright as the sole preserve of human authors.

Direction of travel for the protection of AI Generated Works

The United Kingdom is an outlier in that statutory provisions do already exist in the Copyright, Designs and Patents Act 1988 ("CDPA") in relation to "computer-generated works", which are defined as those generated by a computer "*in circumstances such that there is no human author of the work*". The author of such works is deemed to be the person who made the arrangements necessary for their creation and the work is afforded a 50-year term of protection from the end of the calendar year in which it was created. This approach has also been adopted in a small number of common law jurisdictions with similar copyright regimes to the UK.

Whilst this was intended to recognise copyright subsisting in AI Generated Works, it does little to solve the adjunct between the originality requirement and AI Generated Works. In particular, it begs the question of whether a computer-generated work can ever be considered original such as to obtain copyright protection. This has been recognised in the recent public "Call for Views" run by the UKIPO in which it recognises that the provision has been overtaken by the developments in the originality requirement (in particular following the CJEU's decision

in *Infopaq*) and is now difficult to apply consistently to AI Generated Works. At the time of writing, the UKIPO is planning to run a consultation in Autumn 2021 on whether to revoke its existing provisions for AI Generated Works, and whether to replace them with a new *sui generis* right.

AI and copyright have also been subject to analysis by various other national and international bodies. The International Association for the Protection of Intellectual Property (“AIPPI”) examined copyright in AI generated works at its 2019 world congress in London and resolved that works created using AI should not be protected by copyright without some human intervention (i.e., AI Generated Works), that the originality threshold (as interpreted under national laws) should be used to determine whether there has been a sufficient human intervention and that the use of AI should not preclude the application of related rights if the existing criteria for protection are met⁵.

WIPO has also been engaging in a ‘conversation’ on AI and IP since 2019⁶. In doing so it has formulated a series of questions which it believes encompass the issue in need of discussion. In relation to copyright these include:

- Should consideration be given to according a legal personality to an AI application where it creates original works autonomously, so that the copyright would vest in the personality and the personality could be governed and sold in a manner similar to a corporation?
- If a human creator is required, who are the different parties involved in creating an AI-assisted work and how should the creator be determined?
- In the event that copyright cannot be attributed to AI generated works or that the works are protected by a *sui generis* system of protection, will this incentivise concealment of the involvement of AI?

The work underway by these various bodies suggests a high importance is being attached to the issue. The extent to which some level of harmonisation in approach is generated is left to be seen, but a narrowing of the key questions is, at least, a worthy endeavour.

3 Text and Data Mining Activities

While the protection of AI Generated Works has generated much interest, arguably the most pressing issue for those developing AI systems is the potential for copyright (and related rights) to restrict access to AI training data. This issue requires a careful balance between the legitimate interests of rights holders to protect and receive remuneration for the use of their works and the economic benefits of AI developers having easy access to datasets in order to foster innovation and reduce potential bias in their systems.

AI systems are capable of extracting data from works as part of a learning process through which a trained model will emerge. While there are many ways to implement machine learning, the use of artificial neural networks has gained particular prominence. In these systems the learning process mimics the creation and reinforcement of connections which form between neurons in the human brain and implements decision-making processes by processing inputs through a trained network in order to obtain an output. Relevant to copyright law is that artificial neural networks and most other forms of machine learning generally rely on training data to develop their models and enable effective outputs, driving a demand for access to large data sets.

The Next Rembrandt Project, for example, scanned data from 346 known paintings by Rembrandt, storing 168,263 fragments of those works across 67 different features (such as the outfit of the person in the painting, the gender of the person in the painting and their facial expression). Machine learning was then

employed to replicate the learned style of the Dutch painter in a new painting.

The use of works in this manner gives rise to two questions: (1) is the use an act which engages the copyright in the work; and (2) if the use does engage copyright, is it covered by a relevant exception?

In relation to the first question, some academic commentary has suggested that the use of a copyright work as part of a learning process is not an enjoyment of the work in the copyright sense and should not therefore engage the copyright in that work. However, absent any legislation or case law to the contrary, the currently prevailing view is that the temporary reproductions of a work which are necessarily created in a computer memory during an AI training process are acts which fall within the scope of the reproduction right afforded to the copyright owner.

Earlier approaches to text and data mining exceptions

The issue is therefore generally dealt with through the lens of statutory exceptions or defences to claims for infringement. Some jurisdictions (such as the United States, Israel and the Republic of Korea) provide general ‘fair use’ doctrines, which can potentially be used to cover some or all text and data mining activities. Other jurisdictions, including the EU and the UK, operate a ‘closed list’ of specific exceptions for which the legislature has specifically provided.

In the UK there are currently two exceptions potentially relevant to text and data mining activities. The first is the ‘temporary copies exception’ under section 28A of the CDPA, which implements Article 5(1) of the InfoSoc Directive⁷. This provides an exception for ‘transient and incidental’ copies with ‘no independent economic significance’, created as an ‘integral and essential part of a technological process the sole purpose of which is to enable: (a) a transmission of the work in a network between third parties by an intermediary; or (b) a lawful use of the work’. The application of this exception to the use of copyright works to train an AI system has not yet been assessed by the UK courts or the CJEU, although the Recitals to the Copyright in the Digital Single Market Directive (“**DSM Directive**”) indicate that some acts of text and data mining will fall within the scope of the temporary copies exception. Challenges which may arise in its application to text and data mining include: (i) the lack of coverage for acts of reproduction required to acquire a work for subsequent processing, e.g., downloading it from a website; (ii) technical and legal uncertainty as to whether any given training process results in the creation of a permanent creation of a copy of the work as part of the trained model; (iii) legal uncertainty as to the application of the “lawful use of the work” requirement to any given scenario; and (iv) a common need to retain a copy of the work for future validation or improvement of the model.

The second potentially relevant exception is at section 29A CDPA, which allows for text and data mining activities for non-commercial or research purposes, provided the user has lawful access to the copyright work and the copy is accompanied by a sufficient acknowledgment. Whilst the exception does allow for permanent copies to be stored, the limited purposes for which it is available do not allow for any type of commercial activity.

Recent and future exceptions

The global trend appears to be towards increasing exceptions, often motivated by a belief that broader exceptions attracts and encourages investment in AI research and development.

Japan, for example, has recently adopted a raft of amendments to its Copyright Act permitting users to analyse copyright works for the purposes of machine learning, create incidental electronic copies of works as part of text and data mining activities and use copyright works for the purposes of data verification in research settings. These exceptions were implemented as part of Japan's 'Growth Strategy 2017' and 'society 5.0', which aims at a deep integration of AI technologies to solve economic and social problems⁸.

Singapore has also announced the addition of its own text and data mining exception which would permit copying of copyrighted works for the purpose of data analysis in both commercial and non-commercial contexts, provided the user has lawful access. This is expected to be enacted into law later in 2021.

From a European perspective, Articles 3 and 4 of the DSM Directive create exceptions for text and data mining, both for scientific research (Article 3) and commercial (Article 4) purposes. The scientific research exception is more permissive, allowing the retention of copies of the work for the purposes of scientific research, including the verification of research results, and with contractual provisions purporting to oust the exception being unenforceable. It is, however, subject to safeguards for rights holders, including a requirement that copies of works are stored with an appropriate level of security and a right for rights holders to take measures to ensure the security and integrity of their networks and databases. In contrast, the commercial exception under Article 4 is narrower, permitting the creation and retention of copies for the purposes of text and data mining but only where the right to engage in text and data mining has not been expressly reserved by the rights holder "in an appropriate manner". What constitutes "in an appropriate manner" has been the subject of much debate since the enactment of the DSM Directive. Recital (18) states that "*in the case of content that has been made publicly available online, it should only be considered appropriate to reserve those rights by the use of machine-readable means, including metadata and terms and conditions of a website or a service*" and that "*in other cases, it can be appropriate to reserve the rights by other means, such as contractual agreements or a unilateral declaration*". In the absence of an agreed technical standard for indicating a reservation of rights by website operators, the scene looks to be set for disputes regarding the steps that a website operator must take to reserve their rights and the steps a party obtaining data from a website must take to investigate whether rights have been reserved.

Legislators considering the availability and scope of text and data mining exceptions toe a difficult line. There is a keen desire for economies to be leaders in AI technologies, and an attractive copyright exemption may help attract certain types of AI research and development. Copyright owners on the other hand believe that developers of AI technologies should be required to pay for access to their works in the same way as anyone else seeking to use them. This stream of licensing revenue could be as significant in certain economies and needs to be balanced against any benefits arising from an AI developer-friendly regime. In its response to the UKIPO's consultation for example, Getty

Images argues that having bespoke licensing agreements with AI developers is already an important way for contributors and content partners to collect micro-royalties⁹. They also point out that such royalty models are inherently scalable across industries other than images. The potential risk of introducing a text and data mining exception is that new licensing models are undermined. Rights holders may instead decide not to invest in making their works available in an easily accessible format for use in text and data mining and implement other technical or legal measures to restrict access to their works.

There are also options which go beyond a simple exception *vs* no-exception dichotomy and focus on the underlying question of identifying and resolving any failures in the market for licensing copyright works for text and data mining purposes. These could include situations where AI developers have been refused a licence to use a particular set of copyright works for text and data mining, or the work required to obtain licences from multiple parties whose works are present in a dataset has made a project commercially impossible to deliver. Where such failures of the licensing market exist, measures to facilitate or even mandate, licensing for commercial licensing in particular scenarios could be considered. One possible approach could be adapting the approach taken under section 66 CDPA which provides an exception for lending to the public of certain works, which is subject to "*such reasonable royalty or other payment as may be agreed or determined in default of agreement by the Copyright Tribunal*" and does not apply where a licensing scheme already exists for those works.

Whichever approach is chosen, governments will be making as much of a statement about industrial strategy as they will be about copyright law.

Endnotes

1. The consultation outcome is available at <https://www.gov.uk/government/consultations/artificial-intelligence-and-intellectual-property-call-for-views/artificial-intelligence-call-for-views-copyright-and-related-rights> (accessed on 19 July 2021).
2. Case C-5/08 at [37].
3. *Feist Publications, Inc. v Rural Telephone Service Co., Inc.* 499 U.S. 340, 111 S.Ct. 1282 (1991).
4. Regulations for the Implementation of the Copyright Law of the People's Republic of China, Article 2.
5. The resolutions may be accessed at: https://aippi.org/wp-content/uploads/2020/05/Resolution_Copyright_in_artificially_generated_works_English.pdf.
6. Further information can be found at: https://www.wipo.int/about-ip/en/artificial_intelligence/conversation.html.
7. Directive 2001/29/EC.
8. <https://news.itu.int/japans-society-5-0-will-integrate-cutting-edge-tech-at-all-levels/>.
9. Available from <https://www.gov.uk/government/consultations/artificial-intelligence-and-intellectual-property-call-for-views> (accessed 21 July 2021).



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