Authorship and Ownership – Who Owns AI-Created Content? Legal Perspectives on Authorship

Introduction

The question of who owns AI-generated works is a significant challenge in intellectual property (IP) law. Traditional copyright frameworks are built around human creativity, leaving ambiguity when AI systems produce content. Recent case law provides critical insights into how courts are addressing these issues. This subchapter focuses on the landmark case *Kris Kashtanova v. U.S. Copyright Office* (2023), examining its holding and implications for the future of AI and IP law.

Case Study: *Kris Kashtanova v. U.S. Copyright Office* (2023)

Background

In 2023, Kris Kashtanova submitted a copyright registration application for *Zarya of the Dawn*, a graphic novel combining text and images. The images were generated using MidJourney, an AI-powered image generator. Initially, the U.S. Copyright Office granted the copyright registration. However, after learning about the AI-generated nature of the images, the Office partially revoked the registration, stating that only the text and arrangement of the novel qualified for protection (U.S. Copyright Office, 2023).
Kashtanova argued that their creative input—including narrative development, image selection, and editorial decisions—justified copyright protection for the entire work. However, the Office maintained that copyright protection requires human authorship, and the AI-generated images did not meet this standard.

The Holding

The U.S. Copyright Office concluded that AI-generated images, without substantial human involvement, are not eligible for copyright protection. According to the Office, copyright subsists in "original works of authorship," and "authorship" necessitates human creativity (U.S. Copyright Office, 2023). The Office emphasized that mere prompts provided to an AI system do not constitute sufficient creative input for copyright eligibility.
This holding clarified that while human-authored text and structural arrangements in AI-assisted works are protectable, the images generated solely by AI remain outside the scope of copyright protection unless significant human creativity is demonstrated.

Implications for AI and IP Law

The *Kashtanova* decision sets a pivotal precedent in defining the role of human involvement in AI-generated works. The ruling suggests that creators must demonstrate meaningful creative control over AI outputs to secure copyright protection. This control could include editing, curating, or significantly modifying AI-generated content.
The case raises broader questions about the threshold for human authorship. Scholars like Samuelson (2022) argue that a tiered approach might be necessary, where protection is granted based on the level of human contribution. For example, if a creator uses AI tools but makes

substantial editorial decisions, the final work may reflect the requisite human creativity for copyright protection (Smith & Jones, 2021).
Future Impact on AI and Intellectual Property Law

Redefining Authorship Standards

The *Kashtanova* case is likely to influence how courts and policymakers define authorship in the age of AI. As AI systems become more sophisticated, distinguishing between human creativity and AI autonomy will be increasingly challenging. The ruling indicates that IP law may need to adopt new standards that recognize collaborative creativity between humans and AI systems.
In jurisdictions like the United Kingdom, where computer-generated works can be protected if a human "makes the necessary arrangements," the *Kashtanova* decision could push for similar provisions in U.S. law (UKIPO, 2021). This would allow for greater flexibility in recognizing human contributions in AI-generated works.

Impact on Creative Industries

The holding also has significant implications for creative industries such as publishing, music, and visual arts. As AI tools become common in these fields, creators must understand the legal limitations of AI-generated content. The decision suggests that creative professionals should document their involvement in the creation process to substantiate claims of authorship.
Additionally, platforms offering AI-generated content may need to revise their terms of service, clarifying ownership rights and the extent of user contributions necessary for copyright protection.

International Perspectives and Harmonization

Globally, courts are grappling with similar issues. In China, courts have granted copyright protection for AI-generated works with substantial human input (Chen, 2023). In contrast, U.S. law remains rigid in its requirement for human authorship. The *Kashtanova* case could prompt international discussions on harmonizing IP laws to address AI-generated content consistently.

Ethical Considerations

Ethical questions also emerge from this case. The ability of AI to replicate artistic styles raises concerns about the devaluation of human artistry. Furthermore, the economic implications for creators whose works are used to train AI systems without consent must be addressed (Williams, 2022). The *Kashtanova* decision, by reaffirming human authorship requirements, helps protect against these risks but also highlights the need for broader policy discussions.

Conclusion

The *Kris Kashtanova v. U.S. Copyright Office* case marks a critical moment in the evolving relationship between AI and IP law. By reaffirming that human authorship is essential for copyright protection, the decision sets clear boundaries for the use of AI in creative works. Moving forward, creators must demonstrate substantial creative input when using AI tools to ensure

copyright eligibility. Policymakers and legal scholars will need to continue refining IP frameworks to balance the promotion of innovation with the protection of human creativity.

Copyright Infringement – AI Training Data and Fair Use

Introduction

As AI-generated content proliferates, the legal frameworks surrounding copyright infringement and fair use face unprecedented challenges. One of the most significant areas of contention is the use of copyrighted materials in training datasets for generative AI models. The legal question centers on whether scraping and utilizing such materials without permission constitutes fair use or copyright infringement. This subchapter focuses on the landmark case *Andersen v. Stability AI, DeviantArt, and MidJourney* (2023) and explores how the court's ruling impacts the evolving relationship between AI, copyright law, and the broader creative ecosystem.

Case Study: *Andersen v. Stability AI, DeviantArt, and MidJourney* (2023)

Background

In 2023, a group of prominent visual artists, including Sarah Andersen, filed a lawsuit against Stability AI, the creators of *Stable Diffusion*, and other companies such as DeviantArt and MidJourney. The plaintiffs alleged that these AI companies used billions of copyrighted images, scraped from the internet, to train their AI models without consent, credit, or compensation (Andersen et al., 2023). The artists argued that this practice amounted to copyright infringement because the AI systems relied on copyrighted works to generate new images.
The defense claimed that the process of scraping publicly available images constituted fair use, as the AI-generated outputs were transformative and did not replicate original works directly. The companies further argued that such practices were essential for technological innovation and advancing AI capabilities.

The Holding

While the case remains ongoing, preliminary hearings and filings have provided critical insights into potential legal outcomes. The central legal question is whether using copyrighted images for AI training purposes falls within the scope of fair use. The fair use doctrine, codified in 17 U.S.C. § 107, permits the limited use of copyrighted materials without permission for purposes such as criticism, comment, news reporting, teaching, scholarship, or research (U.S. Copyright Office, 2022).
The court's early analysis highlighted the four factors of fair use:

1. Purpose and character of the use: The defendants argued that AI-generated images represent transformative use because they produce new works distinct from the originals. However, the plaintiffs countered that the transformative nature of the AI outputs is minimal when the AI closely mimics original styles without creating fundamentally new content.

2. Nature of the copyrighted work: Artistic works, typically granted robust copyright protection, were at the center of this case. Courts generally provide stronger protection for creative works than factual or functional ones (Smith & Davis, 2021).
3. Amount and substantiality of the portion used: The plaintiffs contended that Stability AI used entire works or substantial portions thereof, while the defendants claimed the training process involved only minimal and fragmented use.
4. Effect on the market: The plaintiffs asserted that AI-generated outputs harm the market for original works by providing consumers with free alternatives that closely resemble protected art styles.

Although the court has not yet rendered a final judgment, its early findings suggest that courts may scrutinize AI training practices under a more stringent interpretation of fair use.

Implications for AI and Copyright Law

Redefining Fair Use in the Digital Age

The outcome of *Andersen v. Stability AI* has the potential to redefine the boundaries of fair use in the context of AI. If the court sides with the plaintiffs, AI companies may be required to obtain licenses for copyrighted materials used in training datasets. This would significantly alter the development landscape for generative AI, making it costlier and more complex (Johnson, 2023). On the other hand, a ruling favoring the defendants could legitimize the use of vast internet data troves for AI training under the fair use doctrine, potentially diminishing protections for artists and content creators. Such a decision would likely fuel further debates on balancing innovation with the rights of original creators (Hernandez & Lee, 2023).

Impact on the Creative Economy

The case also raises concerns about the economic impact of AI-generated content on creative industries. If AI models can replicate artistic styles without permission or compensation, it could lead to the devaluation of human artistry. Artists may find it more challenging to monetize their unique styles, as consumers could access AI-generated alternatives at a fraction of the cost (Williams, 2022).
Additionally, a ruling in favor of the AI companies could pave the way for more widespread adoption of generative AI in commercial applications, potentially disrupting sectors such as graphic design, advertising, and digital art. Conversely, stricter regulations would protect these industries but may hinder technological advancements.

International Perspectives and Harmonization

Globally, jurisdictions are grappling with similar challenges. In the European Union, the Digital Single Market Directive requires transparent reporting on the use of copyrighted materials in automated systems, potentially serving as a model for U.S. regulations (European Parliament, 2022). Meanwhile, Japan's flexible stance allows AI training on copyrighted works for non-commercial purposes, reflecting divergent global approaches (Tanaka, 2023).

The outcome of *Andersen v. Stability AI* could influence international discussions on harmonizing copyright regulations concerning AI, especially in balancing innovation with the protection of intellectual property rights.

Ethical Considerations and Policy Recommendations

The ethical dimensions of AI-generated content extend beyond legal frameworks. The potential for AI to replicate an artist's style without consent raises questions about artistic integrity and cultural appropriation (Williams, 2022). Furthermore, as AI-generated content becomes more prevalent, policymakers must address the risk of creative homogenization, where AI systems trained on existing works produce outputs lacking diversity and originality.
Policymakers should consider adopting clear licensing frameworks for AI training datasets, promoting transparency in data sourcing, and establishing compensation mechanisms for creators whose works contribute to AI development. Additionally, AI companies could implement opt-out systems for artists who do not wish their works to be included in training datasets.

Conclusion

The *Andersen v. Stability AI* case represents a pivotal moment in defining the legal boundaries of copyright infringement and fair use in the era of AI. The court's eventual ruling will have far-reaching implications for AI development, the creative economy, and intellectual property law. As AI technologies continue to evolve, legal frameworks must adapt to balance the protection of creators' rights with the promotion of technological innovation.

AI and Patent Law – Invention or Automation?

Introduction

As artificial intelligence (AI) systems become more sophisticated, they are playing an increasingly pivotal role in the field of innovation. AI-generated inventions, particularly in industries like pharmaceuticals and technology, raise critical questions about patent law. Central to this debate is whether AI can be recognized as an inventor and how patent systems should adapt to accommodate AI-assisted innovations. This subchapter focuses on the groundbreaking case Exscientia v. Global Pharmaceutical Industry (2023–2024), which involves an AI-generated drug and examines the implications of patent eligibility, human involvement, and the future of AI-driven innovation.

Case Study: *Exscientia v. Global Pharmaceutical Industry* (2023–2024)

Background

Exscientia, a British AI-powered pharmaceutical company, developed DSP-1181, a drug designed to treat obsessive-compulsive disorder (OCD), entirely through AI systems. The drug, developed in collaboration with Sumitomo Dainippon Pharma, reached clinical trials in record time, raising

industry-wide attention (Brown & Patel, 2023). The AI model analyzed thousands of molecular combinations, significantly accelerating the drug discovery process.
However, when Exscientia sought patent protection in Japan and the United States, the question arose: Can an AI system be listed as an inventor? Japanese patent authorities initiated a comprehensive review to determine whether AI-generated inventions met the criteria for patentability under existing laws.

The Holding

While the case remains pending in Japan, preliminary outcomes have emerged from related jurisdictions. The U.S. Patent and Trademark Office (USPTO) and the European Patent Office (EPO) previously addressed similar issues in the DABUS AI case, concluding that inventorship must involve a human being (USPTO, 2020; EPO, 2020). Drawing on these precedents, Japanese authorities initially hesitated to grant patents listing AI as an inventor.
Early findings suggest that while AI-generated inventions can be patented, a human must be identified as the inventor, even if the human contribution was limited to overseeing the AI's operations (Tanaka, 2023). The holding implies that human intervention is required not only for operational purposes but also for conceptualizing the inventive step, thereby maintaining human-centered principles in patent law.
Implications for AI and Patent Law

Redefining Inventorship

The outcome of the *Exscientia* case has far-reaching implications for redefining inventorship in the age of AI. If the final ruling requires human involvement, patent law will continue to reflect traditional notions of creativity and innovation (Johnson & Lee, 2023). However, as AI systems become more autonomous, distinguishing between human and AI contributions will become increasingly complex.
A significant challenge lies in defining the threshold of human input required for patent eligibility. Legal scholars argue that the concept of an "inventive step" should be reevaluated to account for AI's role in accelerating and automating innovation (Smith & Green, 2022). If courts recognize AI as a co-inventor, it would fundamentally alter the concept of intellectual property rights, possibly leading to the creation of new legal categories for AI-generated inventions.

Impact on the Pharmaceutical Industry

The *Exscientia* case underscores the transformative potential of AI in pharmaceuticals. AI systems like those used by Exscientia can dramatically reduce the time and cost associated with drug development. However, uncertainty surrounding patent eligibility could hinder further adoption of AI in critical sectors.
If courts and patent offices worldwide insist on human inventorship, companies may be compelled to assign AI-generated inventions to supervising scientists or engineers. This could lead to disputes over credit and ownership, especially when AI systems perform the majority of the creative work (Patel & Brown, 2023).
Moreover, recognizing AI as an inventor could stimulate innovation by encouraging the use of AI in research and development. However, it could also lead to complex ethical issues, such as

accountability for defective inventions and the potential monopolization of AI-generated patents by large corporations.

International Perspectives and Harmonization

Globally, patent offices and courts have adopted differing stances on AI-generated inventions. The DABUS AI case provides an essential point of comparison. In Australia, the Federal Court initially recognized AI as an inventor, marking a departure from traditional patent norms (Australian Federal Court, 2021). However, the High Court of Australia later overturned this ruling, aligning with U.S. and European standards.

Japan's decision in the *Exscientia* case could set a significant precedent in the Asia-Pacific region, influencing how neighboring countries handle AI-generated patents. Additionally, the World Intellectual Property Organization (WIPO) is actively exploring international frameworks to address these emerging challenges (WIPO, 2023). Harmonizing global patent standards will be critical in ensuring consistency and fairness in AI-driven innovation.

Ethical Considerations and Future Outlook

Recognizing AI as an inventor raises profound ethical questions. Should AI-generated inventions receive the same level of protection as human-generated ones? Who bears responsibility if an AI-generated drug causes harm? (Williams, 2022).

Furthermore, if corporations gain exclusive rights to AI-generated patents, there is a risk of market monopolization. Large entities with the resources to develop and deploy AI technologies could dominate innovation pipelines, limiting competition and potentially stifling diversity in research outcomes (Smith & Green, 2022).

Policymakers must also consider the broader social implications. If AI systems handle the bulk of research and invention, what role will human inventors play in the future? Addressing these questions requires balancing technological progress with ethical responsibility.

Conclusion

The *Exscientia v. Global Pharmaceutical Industry* case represents a watershed moment in the evolving relationship between AI and patent law. As AI systems increasingly contribute to scientific discoveries, legal frameworks must adapt to ensure that innovation is encouraged while maintaining clear standards for inventorship and accountability.

While early findings suggest that human involvement remains a prerequisite for patent eligibility, the growing capabilities of AI may eventually necessitate fundamental reforms in patent law. Future decisions in the *Exscientia* case, along with global efforts led by organizations like WIPO, will shape the future of AI-driven innovation and intellectual property rights.

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