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# **“CONCEPTUAL ANALYSIS OF AI AND ITS EFFECT ON IPR”**

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## **Abstract**

The idea of artificial intelligence is not new and there is a growing debate about whether it should have legal protection due to its impact on human activities.<sup>1</sup> This article explores the concept of legal personality and whether it could be applied to artificial intelligence systems. Legal personality is a category that encompasses a set of rights and obligations.<sup>2</sup> There is a growing movement to expand the definition of legal personhood beyond humans to include animals, artificial intelligence, and other entities. This is due to changing views on the position of individuals in society and a rethinking of traditional legal categories. In the past, legal personhood was closely tied to the concept of subjective right and the legally significant will of the person. However, a shift away from this theory has led to a reexamination of the definition of personhood. The article aims to define the essence of legal personhood and argues that Hohlfeld's approach to subjective-legal structures allows for the recognition of animals and artificial intelligence as possessors of subjective-legal categories. The author employs analytical jurisprudence to explore the emerging issues surrounding this topic.<sup>3</sup>

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<sup>1</sup> Jaynes, T.L. Legal personhood for artificial intelligence: citizenship as the exception to the rule. *AI & Soc* 35, 343–354 (2020).

<sup>2</sup> Claudio Novelli, Giorgio Bongiovanni & Giovanni Sartor, A conceptual framework for legal personality and its application to AI, *An International Journal of Legal and Political Thought* Volume 13, 2022 - Issue 2, Pages 194-219 (2021).

<sup>3</sup> S. K. Stepanov, Deconstruction of the legal personhood of artificial intelligence, *DOAJ* Vol. 2, no. 2 pp. 14 – 30 (2021).

## Keywords

- Artificial intelligence,
- Intellectual property,
- Legal Personhood,
- Author,
- Legal Liability.

## Research problem/statement of the problem

- Lack of Legal regulations and legislations to regulate the interaction of AI with IPR.

## Research question

- Is our legal system 21<sup>st</sup> century ready?
- Implication of the rise in AI on IPR?
- Can AI come under the umbrella of legal person and if so, can it avail authorship and personhood/ rights?

## Research Methodology

The paper is analytical and conceptual research on the topic of AI and its effect on IP, employing secondary data. The data set out in this paper is based on a review and critical analysis of both international and national literature on AI and IP. The literature is largely conducted in the fields of AI and the issues of legal personality. Online searches of academic studies were taken from library-based and free access internet engines (JSTOR, Google Scholar, Hein Online, ScienceDirect, etc.). A major part of the data has been taken directly from books and journals by the lead author's empirical research of both IP and AI.

## Scope and limitations

As mentioned earlier- this is a library type of research. The scope of the research relies on already existing information and is limited to such fields. The research is limited and barred from field work/ field type of research due to the nature and timing of the assignment. The dynamic and ever-changing and developing nature of AI and its field brings up new challenges to the field of IP and Law; posing as an ever-greening issue. The paper talks about the relevance of AI and IP, scope in both national and International economies.

### **1. Introduction**

The concept of Artificial Intelligence (AI) is no longer unfamiliar to us, as it is becoming an increasingly common part of our daily technology. Despite not fully understanding what AI is or how it works, we use it frequently, knowingly or unknowingly, in various forms such as Alexa, Navigation Maps, and Chatbots. AI has been defined differently by various scientists, with some describing it as a machine learning branch of computer science that aims to create "intelligent machines." Simply put, AI refers to a machine's ability to perform tasks that typically require human intelligence. The integration of AI has disrupted traditional Intellectual Property Rights (IPR) practices, with AI now being able to generate IP assets for companies and make purchases for consumers. AI interacts with various aspects of IPR, including Trademark, Copyright, and Patent Law in numerous ways.<sup>4</sup>

### **2. Jurisprudence/ personality status and persons in law**

*It may be smart, but it's not that clever.*

Although Artificial Intelligence (AI) is a powerful tool that has the potential to revolutionize lives and boost economies, it is useless without human input. The algorithms that power AI rely on the skills and knowledge of programmers. Therefore, it is still a tool, albeit a powerful one, that scientists and engineers can use to solve problems. However, this does not diminish the fact that AI is the fastest-growing deep technology globally. In instances where AI generates something new, the

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<sup>4</sup> Chitwandeep Kaur & Shivam Nayyar, Interaction of Intellectual Property and Artificial Intelligence, Upscale Legal (September 14, 2022), <https://upscalelegal.com/interaction-of-intellectual-property-and-artificial-intelligence/>.

programmers who developed the system should receive recognition for their innovation and contributions to the public good. Alternatively, should AI alone receive credit as the originator of ideas that will shape a new future?<sup>5</sup>

## 2.1. Legal Personality

Why is it more challenging to classify AI as "mere things" compared to regular non-intelligent objects? The straightforward answer is that AI is capable of making independent decisions, while ordinary objects, no matter how complex, merely perform the predetermined actions established by their human users or designers. If artificial agents that lack legal personality act autonomously, relying on their cognitive and behavioral abilities, they do not bear the legal repercussions (positive or negative). This may result in an accountability problem where either human is responsible for actions they did not intend to perform, nor could have reasonably prevented, or there is a gap in liability where no one can be held accountable.<sup>6</sup>

Artificial intelligences are essentially objects, and although they can be highly advanced, they are mainly classified as legal "things" since they are ultimately directed by the choices of their designers, producers, or users. This classification has significant consequences for legal capacity and responsibility, except for damages resulting from programming or manufacturing defects. The focus is on damage caused by the proper functioning of AIs or the interaction between data, inference models, and humans.<sup>7</sup>

In the legal context, the term "person" refers to someone who possesses certain legal positions, such as rights, duties, liberties, powers, and responsibilities. These positions typically have legal implications for the person and create a series of corresponding legal obligations for others.<sup>8</sup> To be more exact, we can define the most basic concept of a legal person, which is the narrowest interpretation of personality: an entity is considered a legal person if there is a minimum of one rule that grants it a right or duty (or if it can obtain one by fulfilling a particular operational condition).

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<sup>5</sup> Peter Archer, AI inventors: can AI own intellectual property rights?, Raconteur (December 10, 2021), <https://www.raconteur.net/technology/ai-intellectual-property-rights/>.

<sup>6</sup> Supra 2.

<sup>7</sup> Supra 1.

<sup>8</sup> On correlatives see Wesley N Hohfeld, 'Some Fundamental Legal Conceptions as Applied in Judicial Reasoning' [1913] Yale Law Journal 16.

This basic concept of legal personality, which we will refer to as legal subjectivity, has the potential to expand into multiple institutional personality statuses, each of which is given to a different type of entity and has unique legal outcomes.<sup>9/10</sup>

To further limit the concept of legal personality, it is possible to grant it to other entities, such as unborn children, animals, and natural entities like mountains, rivers, and ecosystems. This is based on the idea that these entities have their own interests that require legal protection, and they can be granted legal rights based on this interest-based conception of subjective rights. However, the exercise of such rights would still require the involvement of human agents.

Ultimately, each personality status serves to identify a specific set of rules that apply to a particular type of entity, and as a result, each instance of that entity is granted the rights and duties that arise from those rules.<sup>11</sup>

## 2.2. Rights of Author/ inventor and the AI

The focus of the ongoing debates is on the test cases that involve patent applications for two AI inventions. Dr. Stephen Thaler, the inventor of an AI system named Device for the Autonomous Bootstrapping of Unified Sentience (Dabus), has been collaborating with Ryan Abbott, a professor of law and health sciences at the University of Surrey, to assess the laws of different countries. Their objective is not to secure patents for AI systems themselves but to obtain patents for any invention that an AI system may generate.

In Thaler's patent applications, Dabus has been identified as the sole inventor of two inventions: an improved beverage container and a neural flame device employed in search-and-rescue operations. The patent applications have been declined in both the US and the UK because only individuals, not machines, can own patent rights. An appeal has been filed in the UK Supreme Court.

The IPO has expressed its appreciation for the decision and the clarification of UK law, stating that it has no intention of granting patent rights to AI systems but instead plans to award them to

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<sup>9</sup> A similar point has been raised by Tomasz Pietrzykowski, who recognises an intermediate category of legal entities which he calls nonpersonal subjects of law, in Tomasz Pietrzykowski, 'The Idea of Non-personal Subjects of Law' in Visa A. J. Kurki and Tomasz Pietrzykowski (eds), *Legal Personhood: Animals, Artificial Intelligence and the Unborn* (Springer International Publishing 2017).

<sup>10</sup> Naffine (n 19) 46.

<sup>11</sup> *Supra* 2.

"individuals and firms that utilize and invest in AI technology."<sup>12</sup>

On the opposite side, judges in Australia and South Africa have decided that AI can be identified as the owner of rights in patent applications. The implications of these rulings and how they should be viewed are a matter of debate among prominent patent lawyers.<sup>13</sup>

### 2.3. Impact of Artificial Intelligence on Intellectual Property Rights

#### *"Can machines think?" – Alan Turing, 1950*

Several years after playing a key role in defeating Nazi Germany, renowned English mathematician, cryptanalyst, and computer scientist Alan Mathison Turing wrote a paper in 1950 entitled "Computing Machinery and Intelligence," in which he posed a simple yet intriguing question: "Can machines think?" His paper and subsequent research established the basis for what we now call artificial intelligence (AI) or machine learning/intelligence. Over time, the concept of AI has become much more complex than researchers of half a century ago had envisioned. As of today, AI, or a machine that can think and act as closely as possible to a human mind, is an exciting new development in the field of technology.

Since the Turin Test in 1950, technology, particularly in the field of AI, has progressed dramatically, with major developments such as Google's Home device (2016), Apple's virtual assistant Siri (2011), Microsoft's virtual assistant Cortana (2014), Amazon's home assistant Alexa (2014), and the creation of Hanson Robotics' humanoid robot Sophia in 2016. Many of these developments occurred in the past decade (2010 to 2019).<sup>14</sup>

□ Today, AI can be dissected into two types of intelligence, namely:

1. **Weak AI:** Weak AI is a widely used type of AI, employed by major corporations like Google, Apple,

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<sup>12</sup> Aldo Alvarez-Risco, Shyla Del-Aguila-Arcentale, A Note on Changing Regulation in International Business: The World Intellectual Property Organization (WIPO) and Artificial Intelligence, The Multiple Dimensions of Institutional Complexity in International Business Research, 4 March 2021.

<sup>13</sup> Supra 5.

<sup>14</sup> Ryan N. Phelan, *Artificial Intelligence & the Intellectual Property Landscape*, Marshall Gerstein & Borun LLP, published by Lexology; (September 14, 2019), <https://www.lexology.com/library/detail.aspx?g=8c2b5986-95bb-4e8e-9057-e4481bfaa471> .

and Microsoft. Although its applications are widespread, its capabilities are limited to tasks for which it has been trained. It can store data and present it to the user when requested, but the algorithms used do not allow this AI to think or act in a way that resembles the human mind. Therefore, within the domain of IP, this AI does not pose a significant threat.

2. **Strong AI:** Strong AI is a type of artificial intelligence that can perform cognitive functions that more closely resemble human thought processes than weak AI. While weak AI is limited to performing specific tasks, it has been programmed to do, strong AI can not only perform these basic functions more efficiently than humans but can also complete complex tasks such as inventing or creating new intellectual property, such as a unique design, copyrightable sound or video.
3. AI's impact on current laws and practices is evident as it becomes a digital frontier. The current global intellectual property (IP) regime only recognizes a "person" as the owner of IP, which means that IP generated or invented by AI cannot be registered (*Naruto v. Slater*)<sup>15</sup>. However, a recent Chinese court decision in the Tencent case held that an article created by an AI is eligible for protection under Chinese copyright law<sup>16</sup>, contrary to the *Naruto* case and the European Patent Office (EPO) decision on patent applications filed by AI technology called DABUS. The EPO held that a human being must file the application, similar to the *Naruto* case. Professor Ryan Abbott<sup>17</sup> and his team at the University of Surrey attempted to file the first-ever patent application without a human inventor<sup>18</sup> using their AI called DABUS, indicating the emergence of AI-based IP filing. However, the lack of existing laws led to the application being refused.

The principle of "sweat of the brow" is an old but sometimes relied upon principle by Courts worldwide. It emphasizes the inventor's hard work and effort invested in creating an IP. However, this principle becomes complicated when it comes to IP generated by AI. Commercializing AI might lead to the dilution of IP rights since AI could potentially generate IP more efficiently than humans. This may eventually lead to AI being considered a "smarter" variant of a human inventor as it would require less time and effort to generate a registrable IP. Along with the aforementioned issues, several

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<sup>15</sup> No. 16-15469 (9th Cir. 2018).

<sup>16</sup> Stefano Zaccaria, *AI-written articles are copyright-protected, rules Chinese court*, World Intellectual Property Review (WIPR); (January 10, 2020) <https://www.worldipreview.com/news/ai-written-articles-are-copyright-protected-rules-chinese-court-19102>.

<sup>17</sup> EPO refuses DABUS patent applications designating a machine inventor, European Patent Office; (December 20, 2019), <https://www.epo.org/news-issues/news/2019/20191220.html>.

<sup>18</sup> Laura Butler, *World first patent applications filed for inventions generated solely by artificial intelligence*, University of Surrey; (August 1, 2019), <https://www.surrey.ac.uk/news/world-first-patent-applications-filed-inventions-generated-solely-artificial-intelligence>.

other unknown issues are likely to arise with the commercialization of AI for IP generation. Thus, there is a critical need to identify and resolve these issues as soon as possible.<sup>19</sup>

### **3. Artificial intelligence and intellectual property**

#### **3.1. Authorship**

***“We must prepare now for a future that will surely come.”***

In 1977, the Whitford Committee discussed the issue of authorship for computer-generated works, but at that time, computing technology was still in its early stages. The first programmable computer, the German-built Z1 developed by Konrad Zuse, was not invented until 1941, and its computing power was far less than what is found in today's mobile phones.

It is important that the law is based on clear and logical principles, rather than on convenience. In addition, there may come a time when the artificial grant of authorship may be challenged in litigation. Therefore, the law must provide certainty for all parties involved, and we must anticipate potential problems and be proactive in creating legislation that establishes the true author/inventor of such works. Even if it requires a significant shift in thinking and the creation of a new legal entity, we should recognize the reality that the rights should be granted to the appropriate entity.<sup>20</sup>

#### **3.2. IPR and AI**

##### ***3.2.1. Interaction of AI with Trademark Law***

A trademark is a symbol used by businesses to differentiate their products and services from those of their competitors, enabling consumers to easily identify the source of a product. However, as AI technology becomes more prevalent in areas such as e-commerce, there is a reduced need for human involvement in the purchasing process. Voice assistants like Alexa can be used to buy products from a specific brand, with tasks either partially or fully automated. This decrease in human

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<sup>19</sup> Rohan Seth, Contemporary and Upcoming Issues In the Field of Intellectual Property Rights, The Peninsula Foundation (September 10, 2020), <https://www.thepeninsula.org.in/2020/09/10/contemporary-and-upcoming-issues-in-the-field-of-intellectual-property-rights/>.

<sup>20</sup> Colin R. Davies, An evolutionary step in intellectual property rights – Artificial intelligence and intellectual property, Computer Law & Security Review Volume 27, Issue 6, Pages 601-619 (2011).

involvement raises questions about traditional trademark concepts like "likelihood of confusion" and the "concept of average human," which may no longer be relevant. The goal of trademark law is to protect both the owner's rights and the consumer from counterfeit products. With AI's ability to identify products without the need for a trademark, it may influence consumers' purchasing behavior and reduce the likelihood of purchasing counterfeit products.<sup>21</sup>

### ***3.2.2. Interaction of AI with Patent Law***

Machines equipped with AI are now capable of innovating based on their own intelligence and knowledge, with or without human assistance. While this is a remarkable development, it presents several unfamiliar challenges and threats to the existing legal system. Questions have emerged such as whether AI-generated inventions can be patented and, if so, who owns the rights to these inventions.

### ***3.2.3. Interaction of AI with Copyright Law***

Advanced AI machines are now capable of producing various types of artistic works, including music, painting, and poetry without any human involvement. However, this poses challenges for authorities in terms of determining ownership and copyright of such creations, as well as identifying possible infringement by AI.

The Copyright Laws of different nations acknowledge only human beings as the creators of any artistic work. A well-known case that raised a similar issue was *Naruto v Slater*<sup>22</sup> (Monkey-Selfie), where a monkey took a selfie using a photographer's camera. The question of ownership of the photograph was debated in court, and it was ultimately decided that animals cannot hold copyright protection since only humans are entitled to it. Similarly, in the case of AI machines, authorities hold a similar view regarding copyright ownership. AI is not recognized as having ownership rights over its creations.

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<sup>21</sup> Supra 4.

<sup>22</sup> Andres Guadamuz, Artificial intelligence and copyright, Wipo Magazine (October 2017) [https://www.wipo.int/wipo\\_magazine/en/2017/05/article\\_0003.html](https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html).

### ***3.2.4. Ownership Rights***

The current legal framework does not recognize AI as either an inventor or a patent holder. In the Indian Patent Act, the term "true and first inventor" is defined in Section 2(y), and the use of the word "person" in this section implies that only humans can be considered inventors. Additionally, Section 6 of the Act specifies who is eligible to apply for a patent, and when both sections are read together, it becomes clear that only humans are eligible to apply for patents.<sup>23</sup>

## **4. Conclusion**

The current state of IP laws is insufficient to keep pace with the rapid advancements in AI technology. Companies are investing more in AI than ever before, making it necessary to modify and effectively implement IPR laws to address these challenges. While some of these problems have yet to arise, they will eventually. As intellectual property rights continue to play an increasingly important role in commerce and become more valuable, we can expect to see many unique challenges to ownership in infringement cases.

There are some who believe that we will never be able to fully understand intelligence and, as a result, will never be able to create a true artificial intelligence system. However, we should keep in mind that this same sentiment was expressed about life twenty years ago. At the time, life was considered to be a divine gift that could not be replicated or understood.

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<sup>23</sup> Supra 4.