



Artificial Intelligence and Intellectual Property Rights: A Contemporary Jurisprudential and Legal Approach

Dr. Djemaa Brahimi^{1*}

¹Islamic Sciences Laboratory, Faculty of Islamic Sciences, University of Batna 1, Algeria.

djemaa.brahimi@univ-batna.dz

ABSTRACT: This approach takes a jurisprudential and legal perspective on the relationship between artificial intelligence and intellectual property rights. The paper reviews the conceptual and technical framework of artificial intelligence, its impact on the generation of creative content and the mechanisms involved in generating text, images, sound and video. It also considers the implications of this for the protection of intellectual rights. The paper analyses the legal and jurisprudential foundations for protecting the rights of authors and creators, and highlights the legal challenges related to attributing creative works and identifying rights holders. Additionally, it addresses issues of patents and liability for violations resulting from works generated by artificial intelligence technologies.

The study concludes that, according to Islamic jurisprudence, creativity is a human attribute and that legal regulations need to be developed to keep pace with rapid advancements.

Keywords: artificial intelligence, intellectual property, digital creativity, Islamic jurisprudence

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Introduction

The world is currently experiencing an unprecedented technological revolution, with artificial intelligence emerging as one of the most significant products of this technological progress. AI has permeated various aspects of life, including intellectual property rights and digital creativity. It has become a key tool in the production of digital works, such as texts, images and videos, that rival those created by humans. The use of advanced techniques such as machine learning and generative artificial intelligence raises questions about the intellectual property rights of these works.

Against this backdrop, this research paper seeks to shed light on the legal issues surrounding authorship rights in content produced using automated systems or intelligent algorithms. It also addresses the problem of determining who holds the intellectual property rights: is it the person who programmed the artificial intelligence, the company that developed the software, or should artificial intelligence itself be considered the owner of the content? Furthermore, the paper discusses the challenges posed by current legislation in dealing with these modern technologies, especially given the absence of legislation that recognises artificial intelligence as a legal entity. The paper also examines Islamic jurisprudence's perspective on liability, ownership, and attribution in scenarios where direct human interaction is absent.

Problem statement:

Based on the previous discussion, the following problem can be formulated: How does artificial intelligence affect the intellectual property rights of digital content? What legal issues are associated with determining ownership of content produced by artificial intelligence?

This problem gives rise to several questions that, when considered together, form a methodological framework for researching this topic. These questions are as follows: Who holds the intellectual property rights for content generated by artificial intelligence? Can artificial intelligence be considered creative and possess rights? What is the stance of Islamic jurisprudence on attributing content generated by artificial intelligence?

Are current intellectual property laws capable of addressing content generated by artificial intelligence? What legal issues are related to the protection of this content?

Importance of the study:

This study is significant because of the rapid developments brought about by artificial intelligence technologies in the fields of creativity and innovation, which are accompanied by unprecedented legal and jurisprudential challenges. Its importance lies in:

1. The comparative study of the rulings of Islamic jurisprudence and positive law, which contributes to our understanding of the legal and jurisprudential dimensions of the relationship between artificial intelligence and intellectual property rights.
2. Addressing current issues related to AI and intellectual property rights, with the aim of enhancing the protection of intellectual rights and ensuring justice in the digital environment.
3. Contributing to the identification of legal gaps in the protection system for automated creations and the determination of rights attribution to aid the development of legislation that keeps pace with technological transformations.[6]

Objectives of the Study

1. Analyze the conceptual and technical framework of artificial intelligence and clarify the impact of the resulting creative content on intellectual property rights.
2. Highlight the legal and jurisprudential challenges arising from the use of artificial intelligence technologies in the field of copyright and creativity.
3. Clarify the stance of Islamic jurisprudence on the attribution of creative content to artificial intelligence, in light of the objectives of Sharia and principles of justice.
4. Explore the adequacy of current positive legislation to protect the outputs of artificial intelligence and reveal shortcomings related to rights attribution.

Methodology of the study

This study takes a descriptive-analytical approach, extrapolating jurisprudential and legal concepts related to artificial intelligence and intellectual property rights, and analysing the effects of creative outputs on these rights. A comparative approach is also employed to balance the positions of Islamic jurisprudence and positive legislation on intellectual property issues related to creative content generated by artificial intelligence.

Adopted plan:

To establish, adapt and address the topic and problem, this research paper is divided into two main sections:

First Section: The conceptual and technical framework of artificial intelligence and intellectual property rights.

2) The legal and jurisprudential challenges and issues of intellectual property rights in light of artificial intelligence.

The conclusion will include the results of the research and its recommendations.

First Section: The conceptual and technical framework of artificial intelligence and intellectual property rights

Artificial intelligence is one of the most significant technological developments affecting various fields, transforming the landscape of creativity in the digital age. This has raised fundamental questions about the intellectual property rights of creations resulting from artificial intelligence. This section addresses the relevant technical and legal concepts to help us understand the issues arising from this development, and discusses the relationship between artificial intelligence and intellectual property rights.

1. Artificial Intelligence – Definition and Technical Development

1.1. Definition of artificial intelligence

There is no unified definition of artificial intelligence as definitions vary depending on the concepts and frameworks used to view this field. Among these definitions:

Artificial intelligence (AI) is a branch of computer science that aims to develop systems and software capable of simulating human cognitive abilities, such as learning, thinking, understanding and interacting with the environment. AI relies on technologies such as machine learning and deep learning, which enable systems to analyse data, make decisions and improve their performance through experience. This allows them to perform multiple tasks in various fields¹.

The Institute of Artificial Intelligence defines it as follows: 'A set of technologies, including machine learning, perception and logic, natural language processing and visual perception, that enable computers to perform tasks typically carried out by humans, such as decision-making and problem-solving, by simulating human mental abilities such as thinking and analysis.'²

- American scientist Marvin Minsky defined it as the science through which machines can perform tasks that would typically require human intelligence³. Some have described it as follows: 'A field aimed at studying human intelligence by developing computer programs that simulate the intelligent behaviours and activities performed by humans.'⁴

2.1 Artificial Intelligence Techniques Used in Creativity

1.2.1 Machine learning:

This branch of AI relies on advanced algorithms that can learn from and interact with data independently, without the need for direct human intervention. Machine learning models are supplied with vast amounts of data in order to identify patterns and the rules that govern them. These models can then be transformed into powerful tools capable of making precise decisions and solving complex problems effectively⁵.

2.2.1 Artificial Neural Networks:

These are computational patterns that mimic the functioning of the brain, consisting of simple units called neurons that are interconnected to form layers. They are characterized by their ability to learn from data and develop complex models. They are used in various fields such as image processing, natural language

¹- Stuart Russell and Peter Norvig. *Artificial Intelligence: A Modern Approach* (3rd edition), Pearson, 2010.

²- The AI Now Report: 'The Social and Economic Implications of Artificial Intelligence Technologies in the Near Term', July 2016.

³- Rihan Mahrous, Al-Sayed Ibrahim, Al-Fakhrani: 'The Impact of Artificial Intelligence Systems on Intellectual Property Rights.' *The Spirit of Laws Journal*, Issue 106 (April 2024), Part Two, p. 1186.

⁴- Ra'fat Hassan Ghaib Al-Obeidi. 'The Role of Artificial Intelligence in Achieving Green Production: An Exploratory Study of Managers' Opinions in a Sample of Industrial Companies Operating in Nineveh Province'. *Kirkuk University Journal of Administrative and Economic Sciences*, Vol. 5, No. 1 (30 June), 2015, p. 44.

⁵- Mitchell, T. M. *Machine Learning*. McGraw-Hill, 1997, p. 17.

processing, robotics, self-driving cars, forecasting, and medicine, contributing to improved accuracy and decision-making¹.

3.2.1 Generative artificial intelligence:

This advanced field of artificial intelligence is aimed at developing models that can create new and innovative content in various areas, including texts, images, music and videos. This type of AI uses deep learning techniques to analyse large amounts of data, learning patterns and characteristics to generate new content that resembles human-produced content in terms of quality and diversity. It has wide applications in various industries, such as media, entertainment, marketing and education, enhancing human creativity and increasing productivity in many fields. However, challenges related to data bias, intellectual property protection and ethical issues associated with the use of this technology remain².

4.2.1 Algorithms:

Algorithms are the cornerstone of creative artificial intelligence systems, playing a pivotal role in analysing data and producing outputs that mimic human creativity. Advanced algorithms, such as genetic and evolutionary algorithms, are used as computational models to simulate the mechanisms of innovation and experimentation. This allows for the production of original texts, designs, and artistic works. A report by the World Intellectual Property Organization noted that the development of these algorithms has led to the creation of models that can automatically produce creative works, raising questions about authorship and ownership³.

2. Intellectual Property Rights: Legal and Jurisprudential Foundations

2.1. Definition of intellectual property

2.1.1. In positive law

Intellectual property is one of the rights enshrined in the Universal Declaration of Human Rights. Article 27 recognises the right of everyone to participate in cultural life and to contribute to scientific progress. This article also affirms the right to protect intellectual works, whether scientific, literary or artistic, and to safeguard their moral and material interests. The World Intellectual Property Organization (WIPO) defines intellectual property as a legal term referring to the rights that arise from human intellectual activity in various fields, such as literary, artistic, and scientific works. These rights include patents, trademarks, copyrights, industrial designs and trade secrets. The purpose of intellectual property is to promote and protect creativity and innovation, as well as ensuring fair competition in markets⁴.

It is also defined as a set of legal rights granted to individuals or entities over the products of their creative and intellectual work, including literary and artistic compositions, scientific inventions, designs, trademarks and trade secrets. The purpose of these rights is to protect creative works from unauthorised use, thereby encouraging innovation and creativity, and providing the rights holder with the opportunity to benefit exclusively from their work⁵.

2.1.2 Definition of Intellectual Property in Islamic Jurisprudence

¹- Michael Negnevitsky. *Artificial Intelligence: A Guide to Intelligent Systems*. Pearson Education, 2nd edition, 2005, p. 166.

²- Michael Negnevitsky. *Artificial Intelligence: A Guide to Intelligent Systems*. Pearson Education, 2nd edition, 2005, p. 166.

³- Saudi Authority for Data and Artificial Intelligence. 'Generative Artificial Intelligence', *Generative Artificial Intelligence Series (1)*, November 2023, p. 6.

⁴- WIPO. *WIPO Technology Trends: Artificial Intelligence*, World Intellectual Property Organization, Geneva, 2019, pp. 28-34.

⁵- Masoudi, Hicham. 'Protection of Intellectual Property Rights for Digital Works: A Reading of the Concept and Protection Methods'. *Journal of Legal Studies*, Vol. 8, No. 2, June 2022, p. 848.

The term 'intellectual property' is relatively modern and does not appear in ancient Islamic jurisprudence texts. Instead, scholars have expressed it in light of Islamic Sharia rulings using numerous terms, including mental and moral rights, rights of innovation, and intellectual property. Some have described it in terms of its various forms and domains:

Proponents of the intellectual rights approach define it as the authority a person holds over the non-material work produced by their mind, whether from their thoughts, imagination, or activity, such as books, inventions, and trademarks.

Meanwhile, proponents of the right to innovation define it as a legitimate and original entitlement that guarantees the innovator ownership of their intellectual output and their right to attribution, protecting them from infringement¹.

Al-Duraini states that it is an authority established by Sharia for the innovator regarding the right to benefit from and manage their intellectual output, preventing others from infringing upon or exploiting it without their consent².

Advocates of the theory of property rights define it as a right belonging to individuals in their literary, scientific, technical, artistic and commercial productions. This enables them to invest in, benefit from and legally protect these works.

Those in favour of scientific production refer to it as copyright, creativity, innovation and invention rights, which are similar in their rulings and meanings³.

Intellectual property rights can therefore be defined as the rights that protect creations and innovations produced by individuals in various fields, such as inventions, melodies, designs and compositions. These rights ensure that owners derive material and moral benefits from their intellectual efforts.

2.2 Types of intellectual property

Intellectual property rights vary according to the type of creativity being protected. Examples include:

Copyright: These rights are granted to authors of artistic and literary works, including articles, books, poems, films, musical compositions, software programmes, paintings, sculptures and databases. Under these rights, authors can control how their works are published, distributed and used, and benefit from moral rights, such as the right to attribution. Copyright aims to protect these works from unauthorised copying, alteration or use without the rights holder's permission⁴.

- **Patents:** A patent is a legal right granted to an inventor to protect their new inventions and innovations. By obtaining a patent, the inventor gains exclusive rights to produce, use and sell their invention for a specified period, usually twenty years. The inventor also has the right to prevent others from using their invention without permission. The purpose of patents is to encourage innovation by providing inventors with incentives to protect their inventions, thereby contributing to technological advancement. A patent is an official document granted to the inventor by the relevant state authorities, allowing them to exploit their invention and benefit from it economically and commercially. It grants the inventor the right to monopolise

1- Al-Daaja, Bakhit Muhammad. Principles of Intellectual Property Rights Between Jurisprudence and Law: A Comparative Study', Dar Al-Thaqafa for Publishing and Distribution, Jordan, 2024, p. 19.

2- Al-Ghamdi, Nasser bin Muhammad bin Meshari. Protection of Intellectual Property in Islamic Jurisprudence and the Economic Effects Thereof, Umm Al-Qura University, Makkah Al-Mukarrama, Preliminary Edition, p. 19.

3- Al-Duraini, Fathi. The Right of Innovation in Comparative Islamic Jurisprudence, Muassasat Al-Risala, Beirut, 2nd edition, 1981, p. 20.

4- Al-Ghamdi, op. cit., p. 20.

its use within certain limits, such as geographical area and applicable fields. The inventor also has the right to legally defend their invention against any infringement or encroachment by others¹.

Trademarks are essential elements in the contemporary business world. They are symbols, logos, marks or designs used by companies to make their products or services distinctive and set them apart from those of their competitors. They play an important role in building a company's identity and strengthening consumers' connection to it. They also create distinction and clarity in the marketplace, helping consumers to identify products and services more easily and increasing companies' financial value and competitive capacity in diverse markets².

- **Industrial designs:** Industrial design rights protect the decorative or aesthetic designs of products. These rights relate to the external appearance of the product, including its shape, colour and ornamentation, and give it a distinctive look³. They grant designers the authority to prevent others from copying or using their designs without permission. The World Intellectual Property Organization (WIPO) defines industrial designs as aesthetic designs related to the outward appearance of goods or products, giving them a unique form or appearance. These designs include colours, lines, shapes, dimensions, sizes and any other aesthetic characteristics that distinguish the product from others on the market⁴.

The Algerian legislator defined it in Article 1 of Ordinance 86-66 concerning industrial designs: 'A design is any arrangement of lines or colours intended to give a specific appearance to an industrial object or craft product. A model is any form that can be shaped and arranged with or without colours, or any industrial object or craft product that can be used as an original model for producing other units and is distinguished from similar models by its external shape.'⁵

Some jurists have defined it as the external shape and innovative creativity of a product that gives it a distinctive and attractive character through the use of colours, shapes or other elements, such as the exterior designs of cars, smartphones, computers, watches and perfume bottles. Industrial models also include the aesthetic designs of beauty and adornment tools that contribute to a product's attractiveness⁶.

Geographical indications are signs placed on goods and products that belong to a specific geographical area and possess characteristics related to that area. Examples include Darjeeling tea, which is grown in the Darjeeling region of India and is known for its unique flavour, derived from the region's climate and soil characteristics⁷.

2.3 Conditions for protecting intellectual property

To effectively protect intellectual property rights, a number of essential criteria must be met to safeguard against exploitation. These include:

Originality: This means that the work must be innovative and unique, and not derived from the work of others. Originality is one of the fundamental conditions for granting legal protection to a work, whether

¹- Masoudi, Hicham. Op. cit., p. 851.

²- Zwatine, Khaled. 'Artificial Intelligence and Intellectual Property Rights: Is There a Correlational Relationship?' Journal of Human Rights and Public Freedoms, Vol. 7, No. 2, 2022, p. 146.

³- Salah Zein El-Din. Industrial and Commercial Property, Dar Al-Thaqafa for Publishing and Distribution, First Edition, Jordan, 2012, p. 24.

⁴- Kaving, Lane and Keller. Strategic Brand Management: Building, Measuring, and Managing Brand Equity. Pearson Education, Global Edition, 2013, p. 30.

⁵- Order No. 66-87, dated 7th Muharram 1386 (corresponding to 28th April 1966), concerning designs and models.

⁶- Khaled Mamdouh Ibrahim. Intellectual Property Rights, Al-Dar Al-Jami'iyah, Alexandria, 1st edition, 2010, p. 239.

⁷- 'What is Intellectual Property?' World Intellectual Property Organization (WIPO), 2020, p. 18.

scientific, literary or artistic, and it encourages innovation and creativity¹. Originality is manifested through indicators that reflect the author's personal touch. In Islamic law, seizing the rights of others and appropriating their efforts, whether material or moral, is prohibited, as emphasised in the Quran. This indicates the necessity of respecting property rights.

- Innovation: This means that the work must have scientific and qualitative value that distinguishes it from others, thereby enriching knowledge or technology in the relevant field. This is a crucial condition for patents and intellectual property rights². From a jurisprudential perspective, innovation is considered a right associated with the outcomes of original intellectual endeavour. This is affirmed by the verse: 'And man will have nothing but what he strives for' (Quran 53:39). Islam encourages renewal and innovation in various fields, provided they do not conflict with the general principles of Sharia law. The well-known legal principle 'no harm and no harm' prevents the exploitation of others' efforts and infringement of their rights without permission. Contemporary jurisprudential assemblies recognise that rights are only established for the original innovator³.

Utility: For a patent to be granted, an invention must be industrially applicable, meaning it should be useful and capable of providing practical benefits in either the industrial or commercial domain⁴. This enhances the economic and technical value of intellectual property rights. Legally, Islam emphasises that works should benefit society and not contradict the objectives of Sharia. Furthermore, Islam stipulates that work must be attributed to its creator and prohibits its appropriation by others, as this is akin to unlawfully consuming people's wealth. The Prophet Muhammad (peace be upon him) said: 'Whoever competes for what no Muslim has preceded him to, it is his.'⁵ This indicates the right of priority in benefiting from something that no one has claimed before, without infringing upon it. Therefore, whoever is the first to innovate or produce a scientific, literary or technical work that benefits society has the rightful claim to it and its rewards⁶.

- Non-harm principle: To protect intellectual property, it is necessary to prevent the exploitation of intellectual work in a manner that causes harm to the author or others⁷. This condition forms part of the author's moral rights, including the right to recognition and the right to reputation. In Islamic law, the principle of 'no harm and no harming' prohibits any unlawful exploitation that threatens the rights of others or endangers public interest.

4.2 Islamic Principles Supporting the Protection of Intellectual Property

Islamic jurisprudence is based on a set of jurisprudential and purposive principles that protect rights and aim to safeguard the interests of individuals and society. The most prominent of these principles related to the protection of property, whether material or moral, are as follows:

- Principle of Preserving Rights:

Protecting property and rights is one of the objectives of Islamic law. It is one of the five fundamental goals that Sharia was established to protect. To this end, a set of rulings have been enacted to preserve property and rights, strengthening and enabling them, and closing avenues that lead to their violation and

¹- Belkassmi, Kahina. 'The Concept of Originality and Novelty in Intellectual Property and Criteria for Determining Them.' *Journal of Legal and Economic Research*, Vol. 5, No. 1, January 2022, p. 28.

²- Al-Otaibi, Maha bint Makhlad. "Innovation in Intellectual Property Rights of Literary and Artistic Works." *King Abdulaziz University Journal of Arts and Humanities*, Saudi Arabia, p. 507.

³- International Islamic Fiqh Academy. 'Decision No. 43 (5/5) on Moral Rights', *Academy Journal*, Issue 5, p. 3.

⁴- Al-Otaibi, Maha bint Makhlad. *Op. cit.*, p. 508.

⁵- Abu Dawood. *Sunan Abu Dawood*, Book of Kharaaj and Fay, Chapter on Land Grants, Hadith No. 3071, 4/679.

⁶- Zwani, Nadia. 'Intellectual Property Between Islamic Sharia and Algerian Law'. *Algerian Journal of Legal, Political and Economic Sciences*, Vol. 57, No. 2, 2020, p. 402.

⁷- Al-Otaibi, Maha bint Makhlad. *Op. cit.*, p. 509.

destruction¹. Legal texts emphasise the obligation to respect the property of others and prohibit encroachment upon it. Allah, the Exalted, states in His clear revelations:

‘O you who have believed, do not consume one another’s wealth unjustly or send it [in bribery] to the rulers in order that they might aid you to consume a portion of the people’s wealth in sin, while you know it is unlawful’ (Quran 4:29).

Undoubtedly, this verse represents the general principle of not encroaching on or exploiting others’ rights without just cause, whether material or moral. Scholars have unanimously agreed that financial rights are protected by law and that anything of considerable financial value must be safeguarded². According to this principle, ‘No one may take the wealth of another without legal cause.’³ The basis for this is the Prophet’s saying: ‘I am but a human, and you bring your disputes to me. Perhaps some of you are more eloquent than others at presenting your case, and I may rule in your favour based on what I hear. So, if I rule in favour of someone regarding something belonging to his brother, he should not take it, for I have only cut him a piece from the Fire.’⁴ And his saying: ‘It is not permissible for anyone to take his brother’s belongings, whether playfully or seriously. If he takes them, he must return them.’⁵

These texts establish the principle of preserving rights and protecting property, including intellectual property in all its forms. They guarantee creators the right to enjoy and benefit from the fruits of their creativity, whether scientific, artistic or literary, and protect these creations from encroachment and exploitation without consent.

The Principle of Preventing Encroachment on Others’ Efforts

The principle of ‘no harm and no harming’ is a well-established legal rule that forms the basis for protecting rights and preventing harm to others, whether material or moral. Thus, it safeguards the efforts of others from all forms of infringement or unlawful imitation, establishing regulations that ensure justice and protect the rights of creators. The origin of this principle can be found in the noble prophetic saying: ‘There is no harm and no harming. Whoever harms others, Allah will harm him; and whoever creates hardship for others, Allah will create hardship for him.’⁶

Based on the principle of retribution corresponding to the act, Islamic law prohibits encroaching on the rights of others, whether material or moral. It is also impermissible to take the wealth of others without legitimate cause. Scholars have unanimously agreed that the rights of authorship, invention or innovation are legally protected for their owners and that encroaching upon these rights is impermissible⁷.

Principle of Achieving Justice:

1- Al-Raysuni, Ahmed. *The Theory of Objectives According to Al-Shatibi*, Al-Dar Al-Alamiya Lil-Kitab Al-Islami, Riyadh, Saudi Arabia, 2nd edition, 1992, p. 47.

2- Al-Zuhaili, Muhammad Mustafa. *The Juristic Rules and Their Applications in the Four Schools of Thought*, Dar Al-Fikr, Damascus, 1st edition, 2006, p. 559.

3- (Article 79) A committee of scholars and jurists in the Ottoman Caliphate. *Journal of Judicial Decisions*, edited by Najib Hawaini, Publisher: Noor Muhammad, Book Trade Company, Aram Bagh, Karachi, p. 27.

4- Al-Bukhari, Abu Abdullah Muhammad bin Ismail (d. 256 AH). *Sahih al-Bukhari*, edited by Mustafa Deeb al-Bugha. *Book of Judgments*, Chapter on the Imam’s Admonition to the Opponents, Hadith 6748. Dar Ibn Kathir – Dar al-Yamama, Damascus, 5th edition, 1993. 6/2622.

5- Abu Dawood, Sulaiman bin Al-Ash’ath Al-Sijistani (d. 275 AH). *Sunan Abu Dawood*, edited by Shuaib al-Arnaut, *Book of Ethics*, Chapter on Taking Something in Jest, Hadith 5003, Dar al-Risala al-Alamiya, Riyadh, Saudi Arabia, 1st edition, 2009, 7/351.

6- Al-Hakim al-Nisaburi, Abu Abdullah. *Al-Mustadrak al-Sahihayn*, edited by Mustafa Abdul Qadir ‘Atta, *Book of Sales*, Hadith No. 2345, Dar al-Kutub al-Ilmiyya, Beirut, 1st edition, 1990, 2/66. The hadith is authentic according to Muslim’s criteria but was not included in their compilations.

7- *Journal of the Islamic Fiqh Academy*, under the Organisation of Islamic Cooperation, Issue 3, 5/2094.

Justice is a fundamental objective of Islamic law, aimed at ensuring the rights of individuals and communities and preventing oppression and encroachment. The Holy Quran emphasises this principle in several verses, including: 'Indeed, Allah commands you to render trusts to whom they are due, and to judge with justice when you judge between people' (Quran 16:90); 'And when you speak, be just, even if it concerns a near relative' (Quran 6:152); and 'O you who have believed, be persistently standing firm in justice, witnesses for Allah' (Quran 4:135).

Undoubtedly, applying this principle is essential for creating an environment that encourages creativity and innovation, ensuring that creators can safeguard their rights and protect them from encroachment and unlawful exploitation.

3. Artificial Intelligence and the Production of Creative Content

The digital content industry is currently undergoing a radical transformation thanks to artificial intelligence. With advancements in technology, AI is now capable of creating and generating professional-quality texts and videos, as well as translating languages quickly and accurately. This opens up new possibilities for innovation and interaction in the digital content realm.

3.1 Text generation: Text generation:

Text generation using artificial intelligence is one of the most prominent modern applications and makes a significant contribution to the digital content industry. This technology uses machine learning algorithms and natural language processing (NLP) to produce written content that imitates human style. AI analyses vast amounts of textual data available on the internet, enabling it to generate new content that is both innovative and relevant to specific topics. This technology is used in various applications, such as article writing, preparing media texts and news reports. It also improves efficiency and productivity, reducing the time and effort required for text production and making the writing process more effective and cost-efficient. However, challenges such as originality and ethical considerations related to intellectual property rights remain in this field¹.

3.2. Data analysis and content optimisation:

Using artificial intelligence for data analysis and content optimisation is one of the most important ways to improve the quality of digital content. Techniques such as machine learning and big data analytics enable artificial intelligence to collect vast amounts of data related to user behaviour and interests. This allows patterns and trends to be repeatedly analysed. Based on these analyses, these systems can predict audience preferences and tailor content to meet their needs. For instance, artificial intelligence can analyse user interactions with content on online platforms, such as videos or articles, to provide in-depth insights into the most popular topics or patterns that lead to increased engagement. Content can then be adjusted to align with audience preferences, for example by optimising keywords in articles to enhance search engine rankings (SEO) or by modifying texts to make them more engaging. This significantly increases the effectiveness of digital content, attracting audiences and raising engagement and conversion rates with brands².

3.3. Video and audio production:

The use of artificial intelligence in video and audio production is one of the most important aspects of digital creativity. These technologies enable the production of high-quality visual and audio content. Relying on advanced algorithms, artificial intelligence can analyse original videos and images to modify and enhance their quality, or generate new content based on specific texts or images. In video production, AI can be used

¹- A. Radford, J. Wu, D. Amodei et al., 'Language Models are Unsupervised Multitask Learners', OpenAI, 2019, pp. 5-6. Available at: [<https://cdn.openai.com>].

²- Brownlee, J. Machine Learning Mastery with Python: Understand Your Data, Create Accurate Models, and Work Projects End-to-End, v1.12 ed., 2018, p. 47.

to edit scenes, add visual effects or generate new clips based on input data. In audio production, AI can utilise deep learning techniques such as “OpenAI Juke Deck” and “Amper Music” to convert text into natural speech. This facilitates the efficient production of audio content without the need for human voice recordings. Thus, artificial intelligence improves production quality and accelerates creative processes in various fields¹.

3.4 Language translation:

The use of artificial intelligence for language translation represents a qualitative leap in the field of instant and accurate translation between different languages. This technology uses deep learning algorithms and neural networks to train models to understand and analyse texts in multiple languages. This enables AI to convert texts from one language to another while preserving meaning and context. This makes translation more accurate and effective than traditional methods. Prominent AI translation systems include Google Translate and DeepL, which can quickly and accurately process long texts and complex phrases².

Secondly, we will address the legal and jurisprudential issues and challenges of intellectual property rights in the context of artificial intelligence.

The increasing use of artificial intelligence technologies in creative fields has led to complex legal and jurisprudential issues concerning the nature of intellectual property rights and the legal and Sharia adaptation of these outputs.

1. Attribution of creative work and determining the rights holder.

One of the most prominent legal challenges today is determining who owns the intellectual property rights for works generated by artificial intelligence algorithms. In the traditional system, rights are granted to the human author. However, the emergence of AI capable of independent production raises questions about who is entitled to claim rights to these works.

1.1 Determining the rights holder for works generated by artificial intelligence

Determining the rights holder for works produced by artificial intelligence is one of the most significant legal challenges posed by modern technology. In traditional legal systems, intellectual property rights are granted to the human author of the work. However, the emergence of artificial intelligence and the advancement of its technologies have raised serious questions about who owns the rights to works generated by intelligent systems.

In this context, the law struggles to identify the true creator of these works and the entity to which rights should be granted. Should rights be granted to the developers who designed and programmed the intelligent systems? Or should they be granted to the users who employed these systems to create content? Or should the rights remain unowned if works are produced independently by artificial intelligence without direct human intervention? These questions reveal the shortcomings of current legislation.

Furthermore, this issue gives rise to complex questions regarding joint ownership, particularly in cases where the work is the result of collaboration between humans and artificial intelligence. Such collaboration can make it difficult to determine the ownership shares of the parties involved and necessitates a re-evaluation of the laws governing ownership of intellectual works³.

1- Noura Meriay and Fatima Al-Zahra Belbadj, 'Artificial Intelligence in Newsrooms... Industrial Innovation versus Journalistic Creativity: A Reading in Applications of Artificial Intelligence, Journalism and Its Stakes'. In *Artificial Intelligence: Multidisciplinary Visions*, The Arab Democratic Centre, Berlin, Germany, 2024, p. 199.

2- Radford, A., Wu, J., Amodei, D. et al. op. cit., p. 6.

3- Lee J. Tiedrich, Gregory S. Discher, Fredericka Argent and Daniel Rios, '10 Best Practices for Artificial Intelligence Related Intellectual Property'. '10 Best Practices for Artificial Intelligence Related Intellectual Property.' *Intellectual Property & Technology Law Journal*, Vol. 32, No. 7, July–August 2020, p. 3.

1.2. The Position of Positive Law on the Status of the Author in Works Resulting from Artificial Intelligence

As artificial intelligence technologies continue to expand, legal issues have arisen concerning whether these outputs can be considered creative works deserving of protection. This is because positive law currently recognises only humans as rightful authors, since they are capable of creativity and possess legal agency.

1.2.1 Non-recognition of artificial intelligence as a 'legal author':

Despite significant advancements in AI technologies and their ability to produce creative works, traditional legal systems do not recognise AI as a legal author. This is likely because traditional legal concepts of copyright are based on the notion of human creativity, whereby the author is considered an individual capable of expressing their thoughts in an artistic or literary manner¹. These characteristics are difficult to apply to intelligent systems that operate based on algorithms and lack consciousness and emotions. This fundamental difference raises questions about how to grant intellectual property rights for works generated by artificial intelligence, especially in the absence of a direct 'human author'. Consequently, current legislation limits the granting of rights to developers or users who direct intelligent systems. This leaves the issue of intellectual property for works produced independently by artificial intelligence without a definitive solution, thereby highlighting the need to review the laws governing these matters².

1.2.2. Impact on Traditional Authors' Rights:

The creative outputs of artificial intelligence algorithms raise numerous questions about their impact on the rights of human authors, particularly given the intense competition between human and artificial intelligence-produced creativity. The increasing use of these technologies is expected to reduce creative incentives for traditional authors, who may find themselves competing with intelligent systems capable of producing similar works, or even surpassing their own creations in terms of efficiency and speed. This fundamental shift will undoubtedly have a negative impact on the value of human creative work in the market and the significance of individual works in certain fields³.

1.3. The Position of Islamic Jurisprudence on Attributing Creativity to Humans and Technological Means

In Islamic jurisprudence, creativity is considered an inherent human trait linked to the ability to think and reflect, which distinguishes humans from other creatures. There are verses that encourage thinking and contemplation, including Allah's saying: 'Have they not travelled through the land so that they may reflect in their hearts, or so that they may listen with their ears?' (Quran 22:46) and "And He taught Adam the names — all of them" (Quran 2:31). These verses indicate the honour bestowed upon humans and their ability to innovate.

However, with the advancement of artificial intelligence technologies, jurisprudential issues have arisen concerning the attribution of creative works to these technologies, particularly with regard to intellectual property rights. Scholars have unanimously agreed that legal capacity and responsibility are limited to humans, as they are the ones addressed by Allah's words, capable of understanding His rulings, and accountable for them. This is reflected in His statement in Surah Al-Ahzab: 'Indeed, We offered the Trust to the heavens, the earth, and the mountains, but they declined to bear it and feared it. But man undertook it. Indeed, he was unjust and ignorant' (Quran 33:72). This trust entrusted to humanity represents the capacity

1- Daniel Cohen. *Homo Numericus: The Digital Human and the New Twofold Revolution*, translated by Ali Youssef Asaad, Dar Safa Sab'ah for Publishing and Distribution, Saudi Arabia, 2024, p. 39.

2- Lee J. Tiedrich, Gregory S. Discher, Fredericka Argent and Daniel Rios. *Op. cit.*, p. 3.

3- Syed Wajdan Rafay Bukhari. 'Impact of Artificial Intelligence on Copyright Law: Challenges and Prospects'. *Journal of Law & Social Studies (JLSS)*, Vol. 5, No. 4, 2023, pp. 648–649. Available from: https://www.researchgate.net/publication/377334695_Impact_Of_Artificial_Intelligence_on_Copyright_Law_Challenges_and_Prospects.

for obligation and performance, distinguishing humans by their ability to bear responsibility and fulfil religious duties.

Consequently, artificial intelligence technologies and the advancements achieved by humans remain tools at their service, and innovation or creativity cannot be attributed to them. Regardless of the quality or perfection of these outputs, the legal and religious attribution ultimately belongs to humans, as they direct and design the processes¹.

1.4 Issues of plagiarism, imitation and originality

In the modern era, plagiarism, imitation and originality are among the foremost challenges facing intellectual property rights, especially in light of the rapid advancements in artificial intelligence technologies. These systems can produce works that resemble previous human creations, giving rise to complex legal issues concerning plagiarism and infringement of intellectual property rights. It becomes difficult to determine whether artificial intelligence has violated the intellectual property rights of original authors, particularly since these systems may be capable of mimicking the style or ideas in human creative works. Consequently, there are growing concerns about how to define legal responsibility in this context, necessitating a re-evaluation of current legislation to address this new challenge².

2. Challenges related to patents in content generated by artificial intelligence

2.1 Can artificial intelligence be an inventor?

One of the legal issues concerning AI-generated content is the matter of patents and inventions contributed to by artificial intelligence. Traditional legal systems require an inventor to be a natural person with the ability to create and think critically — qualities that are difficult to attribute to digital systems. However, advancements in AI technology mean that it is now possible for AI systems to contribute to the creation of new solutions or inventions without direct human intervention. Examples include analysing complex data, designing new models and developing innovative tools in fields such as engineering and medicine. This could also accelerate scientific discoveries or the development of new products.

This raises questions about who should receive the patent. Is it the person who developed or trained the intelligent system? Or should the patent be attributed to the AI itself, which is not recognised as a legal entity in most countries? ³

Furthermore, this issue presents legal challenges regarding the protection of innovations without a direct human inventor, necessitating the development of new legislation to keep pace with these technological advancements. Such legislation must establish clear and effective legal mechanisms for determining intellectual property responsibilities for works and inventions involving artificial intelligence, thereby clarifying who holds the economic and moral rights to these innovations⁴.

2.2 Distinguishing Between Original Innovations and Derived or Composite Innovations

Distinguishing between original and derived innovations is a key challenge in patent protection, especially given the rapid growth of artificial intelligence in technical creativity. An original innovation is presumed to

¹- Shawqi Ibrahim Alam. 'Artificial Intelligence: Its Rules, Regulations and Ethics'. Paper presented at the 26th International Islamic Fiqh Academy Conference, Ministry of Awqaf and Islamic Affairs, Qatar, May 2025, p. 29.

²- Syed Wajdan Rafay Bukhari. Op. cit., p. 651.

³- Anna Ubaydullaeva. 'Intellectual Property in the Era of Artificial Intelligence: Challenges and Solutions'. *Irshad Uzbek Journal of Law and Digital Policy*, Vol. 1, Issue 3, 2023, p. 7.

⁴- Adv. Aparna N. Chorge, Suman Surendra Gupta et al., 'Intellectual Property Challenges in the Age of Artificial Intelligence (AI) and Machine Learning', *International Journal of Emerging Technologies and Innovative Research (IJETIR)*, Vol. 3, No. 11, November 2023, p. 76. *International Journal of Emerging Technologies and Innovative Research (IJETIR)*, Vol. 3, No. 11, November 2023, p. 76.

contain an element of novelty and to express unprecedented human creativity that meets the condition of 'inventive activity'. In contrast, a derived innovation does not reach the same level of originality as it results from the combination of previous data without any genuine innovative contribution.

This has raised legal questions about granting patents to outputs generated by artificial intelligence, given the inadequacy and lack of clarity in the definition of the legal status of these outputs within traditional legal frameworks. The patentability criteria of originality, novelty and inventive activity were designed to evaluate human creations, making their application to AI-generated innovations exceedingly difficult. The World Intellectual Property Organization (WIPO) has indicated that the persistence of this conceptual gap could cause imbalances in the patent system. Therefore, there is a need to reconsider traditional legal frameworks and formulate fundamental innovation concepts that align with the new technological context imposed by artificial intelligence technologies¹.

3. Responsibility and protection of intellectual property rights

Another challenge posed by works generated by artificial intelligence is establishing legal liability for violations of intellectual property rights. When artificial intelligence uses protected content without permission or produces works that infringe original rights, it becomes difficult to determine who is responsible.

3.1 Responsibility in Positive Law

3.1.1 Who is responsible? Who is responsible?

Violations of intellectual property rights relating to works generated by artificial intelligence give rise to complex legal issues, particularly with regard to the determination of criminal and civil liability, due to the current legislation's lack of effective mechanisms for holding artificial entities or their overseers accountable for illegal activities. The following parties may therefore bear responsibility:

Developers are the individuals responsible for designing, programming and operating artificial intelligence systems. They are legally responsible if the violation is the result of an inaccurate design or development of the system, or if they program the AI technologies unlawfully, for example by allowing the use of protected content without permission. They must also anticipate potential violations and implement technical and legal mechanisms to mitigate them. In cases of such violations, it is the developers who bear legal responsibility, not the machines.

Users have a responsibility to comply with the law when using artificial intelligence to generate content that infringes intellectual property rights, particularly if they issue requests or commands that lead to violations of others' rights. The individual is responsible for their actions and decisions in this case, and liability does not rest with the machine².

- Artificial intelligence itself: Although artificial intelligence is not considered a legal entity that can be directly held accountable, this issue may be subject to future discussion regarding the amendment and development of legislation to enable the independent accountability of intelligent systems³.

¹- Samuelson, Pamela. 'Allocating Ownership Rights in Computer-Generated Works.' *University of Pittsburgh Law Review*, 47(6), 1989, p. 1197.

²- Abu Al-Ma'ati, Wafa Muhammad. 'Criminal Responsibility for Artificial Intelligence Crimes.' *The Spirit of Laws Journal*, Issue 96, October 2021, pp. 86–87.

³- Op. cit., pp. 90–91.

- Owner or company: The company that owns the artificial intelligence bears legal responsibility for violations of intellectual property rights if it fails to establish adequate controls to regulate the system's use, or if it benefits commercially from infringement¹.

3.1.2. Responsible Distribution Among Parties

In the event of an intellectual property violation, it is essential to identify the party responsible for any resulting damages or penalties. Responsibility may lie with the developers who trained the AI using potentially protected data, the owning companies or the users².

3.2 Responsibility in Islamic Jurisprudence

In Islamic jurisprudence, responsibility for actions is the obligation of those who are accountable. Only humans are responsible for their actions and decisions regarding the use of technology and artificial intelligence, including the creation of works produced through technology, particularly in cases of intellectual property rights infringement. Machines do not possess the will or consciousness that would make them accountable under Sharia law. Therefore, if artificial intelligence is used to produce content that infringes intellectual property rights, the individual responsible — whether a developer, user or owner — bears full liability under the principle of Islamic law that requires individuals to compensate for harm caused while adhering to principles of justice and preserving the rights of others³.

It is evident from the above that Islamic jurisprudence aligns with international laws in protecting intellectual rights and preventing encroachment on the efforts of creators. The difference lies in the source of legislation: Islamic jurisprudence is based on the Quran, the Sunnah, consensus and analogy, and has an ethical and spiritual dimension; international laws, on the other hand, rely on agreements and treaties.

3.3. Protection of Intellectual Property Rights in the Digital Environment and Technological Platforms

The protection of intellectual property rights in the digital space is a contemporary challenge for creators and legal entities, given the nature of digital content and how easily it can be transferred, copied and used. This threatens the rights of authors and creators, and increases the risk of infringement. It is therefore crucial to develop modern protection mechanisms that respond to rapid technological advancements. These mechanisms should include legal and technical measures to ensure creators maintain control over their work. These measures include digital tracking of content, digital licensing systems and technological systems to prevent unauthorised copying. Furthermore, users and technological platforms must be educated about the legal and Sharia aspects to promote respect for intellectual property rights and strike a balance between technological advancement and innovation⁴.

Conclusion:

In this study, we examined the relationship between artificial intelligence and intellectual property rights from jurisprudential and legal perspectives. We examined the legal and jurisprudential dimensions of intellectual property rights and works generated automatically. Our findings revealed that artificial intelligence presents legal and Sharia challenges to intellectual property rights, particularly in relation to ownership and liability for infringements. Reconciliation of Islamic jurisprudence principles with international legislation could lead to the formulation of a balanced system to protect intellectual property

1- Saad Al-Waheeb and Lulwa Tawfiq. 'Intellectual Property Rights in Light of Artificial Intelligence: A Jurisprudential and Legal Study'. Sharia and Law Sector Journal, No. 17, February 2025, p. 2318.

2- Robert Patrick Merges and John Fitzgerald Duffy. Patent Law and Policy: Cases and Materials, LexisNexis Law School Publishing Advisory Board, 6th edition, 2013, p. 370.

3- Al-Najjar, Abdullah Mabrouk. 'Artificial Intelligence: Its Rules, Regulations, and Ethics', pp. 88–89.

4- Awad, Amal Fawzi. 'Digital Ownership in the Age of Artificial Intelligence: Challenges of Reality and the Future'. The Arab Democratic Centre, Berlin, Germany, 2021, pp. 68–69.

and the rights of creators in the context of works produced by artificial intelligence. The study concluded with the following findings and recommendations:

First: Findings:

1. The study demonstrated that artificial intelligence does not have legal or Sharia personality as an author. Humans remain the rightful holders of rights and must adhere to the originality of content, avoiding imitation and plagiarism.
2. Current legislation assumes that inventors or authors are human, which makes the protection of works generated by artificial intelligence insufficient.
3. Automatically generated content may resemble existing works, raising issues of plagiarism and imitation. This highlights the need for legal and Sharia oversight to protect intellectual property rights.
4. Positive law aligns with Islamic jurisprudence in protecting intellectual rights and preventing encroachment on creators' efforts.
5. Both positive law and Islamic jurisprudence agree that humans are responsible for violating intellectual property rights.

Second: Recommendations

The study recommends:

1. Amending national legislation and copyright and patent systems to include works generated by artificial intelligence;
2. Specifying the legal responsibilities of developers and users to ensure rights protection and keep pace with technological advancements.
2. Organising training courses and workshops to raise awareness of intellectual property rights and the legal and Sharia responsibilities involved in using artificial intelligence technologies.
3. Intelligent systems will be adopted to monitor intellectual property rights and ensure their protection, with violators being held accountable in the digital space.
4. Conducting comparative studies of international legislation and Islamic jurisprudence to provide innovative solutions for protecting the rights of creators and authors in the era of artificial intelligence.

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