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Determining Authorship & Ownership of Ai-Generated Work Under Indian Copyright Law

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ABSTRACT

The judicial decision in DABUS case have stirred up an international debate over AI authorship. This article analyses the judicial decisions determining the legal status under intellectual property laws of the work generated by an artificial intelligence. Since the traditional concept of intellectual property protects the work generated by humans, proliferation of artificial Intelligence raises the need to re- define the status of personhood, inventorship, authorship and subject matter eligibility. The research is non- empirical, based on the judicial decisions on DABUS and *Dreamwriter* along with the international conventions. The paper explores the question whether the existing laws are sufficient to address the technological advancements, and if not, then what might be the possible outcome.

Keywords: Artificial Intelligence, Authorship, Copyright Law, DABUS, India

I. INTRODUCTION

Development of artificial intelligence have raised many questions before the regulatory bodies and one of these questions is about the legal status of the work created by an AI.[3] The traditional and more anthropocentric view supports the view that the authorship of a work must lie with a human creator, however, a more progressive and dynamic view suggests that the scope of law should be wide and inclusive when determining the authorship over an original work.[4]

Through this article, the authors have tried to understand the legal trend specific to AI in reference to the intellectual property created by them. The authors have compared and analyzed the latest judgements on the status of inventorship of AI, more specifically, DABUS[5]. In the light of these decisions, the article also analyses the Indian legal position on AI and IP protection and assess the extent to which the recent rulings can assist in reframing the legal policy on copyright protection of AI-generated work. Furthermore, the article also explores the protection that can be provided to an AI- generated work.

In 2020, the European Patent Office delivered two landmark judgements on AI inventorship, denying them the rights over the claimed invention. *Aquivalenter Aortendruck*[6], an artificial neural network was an AI modelled on human brain with trainable interconnected layers of algorithm. The subject matter for patent application was an artificial neural network, measuring the blood pressure curve by learning.[7]

The patent application was refused since it failed to meet the legislative criteria of European Patent Convention.[8] Since the artificial neural network is made up of layers of interconnected variables, it was impossible to identify the parameter combinations done by the AI to produce the desired result, even after the programmer had access to the parameters. Since the

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[3] "The WIPO Conversation on Intellectual Property and Artificial Intelligence", WIPO, accessed October 13, 2022, https://www.wipo.int/about-ip/en/artificial_intelligence/conversation.html

[4] Annemarie Bridy, "Coding Creativity: Copyright and the Artificially Intelligent Author", *Stanford Technology Law* Review 5, no.1 (2012): 4, http://stlr.stanford.edu/pdf/bridy-coding-creativity.pdf.

[5] Device for the Autonomous Bootstrapping of Unified Sentience

[6] Case T 0161/18 (equivalent aortic pressure/ARC SEIBERSDORF) of 12.5.2020

[7] Case T 0161/18 (equivalent aortic pressure/ARC SEIBERSDORF) of 12.5.2020

[8] Art.83, European Patent Convention, 1973.

parameters cannot be traced, the results cannot be produced by a PHOSITA because of non-disclosure of the invention[9]. Moreover, since there was no detail in the patent application regarding the training and development of the neural network, it was rejected by the court on the grounds of lacking inventive step.[10]

In its second case, DABUS, an AI system, was listed as an inventor before the European Patent Office.[11] The claimed invention improved the shipping safety measure based on fractal geometry and consisted of a beacon which flickered in patter mimicking neural activity to attract attention. Based on artificial neural networks, the invention was developed by DABUS to generate and analyze ideas and their novelty and utility. The application listing DABUS as an inventor was rejected by EPO for non compliance of the legislative requirements laid down in European Patent Convention.[12] It was held that, to be named as an inventor, an inventor has to be either a natural or a legal person. DABUS, being an AI, is neither of them and therefore cannot be named as an inventor.[13] The primary purpose of naming a person as an inventor is to create their identity and enable them to exercise their patent rights. Since AI do not have any legal personality as of now, it cannot enjoy the rights and liabilities provided under law. Moreover, there is a general perspective that only a natural person can be listed as an inventor.[14]

The same application was filed before UKIPO[15] and was rejected on the same ground, as law does not extend beyond human inventors[16] and machines do not have the legal capacity of ownership.[17]This decision was upheld by the UK High Court in 2020[18].

The patent application for DABUS was also filed with the USPTO in 2019, claiming DABUS as an inventor. The application was rejected on the similar grounds to that observed by UKIPO and EPO- failure to disclose any natural person as an inventor. The US Patent Office highlighted that the law requires an inventor to be a *person*, preferably a natural person[19]. The Court, while handing down the decision, referred to the Univ. of *Utah* v. *Max-Planck-Gesellschafl zur Forderung der Wissenschaflen e.V*[20]. The Federal Circuit in this case had held that a State cannot be named as an inventor because inventors are individuals who conceives the invention. Conception of an idea is *formation of the mind of the inventor* and *a mental act*. This conception is the fundamental act of any invention and must be performed by a natural person.[21]

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[9] Art. 83 requires sufficiently clear and complete information about the invention so that a person of ordinary skill in the art can apply it in practice.

[10] Article 56, European Patent Convention, 1973.

[11] Case J 0008/20 (Designation of inventor/DABUS) of 21.12.2021

[12] Art 81 and 19(1) European Patent Convention, 1973.

[13] The designation of the inventor does not comply with Article 81, first sentence, European Patent Convention, 1973. Under the European Patent Convention, the designated inventor has to be a person with legal capacity.

[14] Case J 0008/20 (Designation of inventor/DABUS) of 21.12.2021

[15] UKIPO Decision: BL O/741/19

[16] Section 7(1) of the UK Patents Act 1977 provides that " [a]ny person may make an application for a patent either alone or jointly with another". In this case DABUS was not the applicant: Dr Thaler was. As per the Court, the requirements of section 7(1) were, therefore, met.

[17] Sec.13, UK Patents Act, 1977: Mention of inventor.

(1)The inventor or joint inventors of an invention shall have a right to be mentioned as such in any patent granted for the invention and shall also have a right to be so mentioned if possible in any published application for a patent for the invention and, if not so mentioned, a right to be so mentioned in accordance with rules in a prescribed document.

(2)Unless he has already given the Patent Office the information hereinafter mentioned, an applicant for a patent shall within the prescribed period file with the Patent Office a statement—

(a)identifying the person or persons whom he believes to be the inventor or inventors…

[18] Thaler v The Comptroller-General of Patents, Designs And Trade Marks [2020] EWHC 2412 (Pat).

[19] 35 United States CODE § 100 (a), § 115 (b), § 115 (1) (a) & (h).

[20] 734 F.3d 1315 (2013)

[21] 35 United States Code § 100(f)

II. INDIAN COPYRIGHT LAW

Section 13 of the Indian Copyright Act[22] outlines the subject matter of copyright protection with a pre-requisite that the work needs to be original. However, what constitutes an original work has no where been defined in the Act. The Courts have developed various theories over the time to decide originality of a work, such as, whether the idea and expression are interconnected. Similarly, the court would look if the author has put in his skill and labor to create the work and the threshold of originality for copyright was reduced.[23] The court however, moved to another doctrine, *modicum of creativity* to determine the originality of a work. This doctrine stipulates that author should create the work with intellectual creativity and judgement.[24]

Copyright provides an incentive to the authors to create more original work and if the law acknowledges the work created by an AI, it would place machines at the level of humans. The European position on AI indicates that they should have a legal personality to own any type of right. [25]Therefore, the issue of granting authorship to AI also raises the issue of personality attached with it. Apart from this, another issue which connects to the personality of an AI its ability to sue and be sued under the law for any possible violations. Another issue which needs to be highlighted is that European Parliament has suggested for protecting the autonomous robots as *electric person* under the Copyright law.

Artificial intelligence virtual artist technologies (AVIVA) has been granted the status of a composer by Society of Authors, Composers and Publishers of Music making it the first AI to be recognized as a composer.[26].

However, the Copyright law does not extend only the economic rights but also the moral rights to its owners.[27] The aim of moral right is to protect the right of paternity and the right of integrity of the author. The paternity right protects the author's right to be associated with his work and the right of integrity enables the author to protect their work from any distortion or mutilation. An original work is considered as an extension of author's personality and a part of his soul. Moral rights aim to protect this soul and therefore are an integral part of author's personality and reputation.[28] If we are discussing extending copyright protection to an AI-generated work, we cannot ignore the moral rights but it also cannot be ignored that extending moral rights for AI would not serve its purpose.[29]

Exclusive right of Intellectual property is granted for a limited period of time. Copyright, for example, extends beyond the lifetime of the author, depending upon the laws of the country. Therefore, it becomes crucial to decide upon the term of protection for an AI- generated work since an AI does not come to an end like a human life does.[30]

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[22] Works in which copyright subsists.— (1) Subject to the provisions of this section and the other provisions of this Act, copyright shall subsist throughout India in the following classes of works, that is to say,—
(a) original literary, dramatic, musical and artistic works;
(b) cinematograph films; and
(c) sound recording.

[23] Sweat of the brow doctrine

[24] Eastern Book Company v. D.B. Modak, ((2008) 1 SCC 1)

[25] András Hárs, "AI and international law – Legal personality and avenues for regulation" , *Hungarian Journal of Legal Studies* 62 no. 4 (2022): 320-344, https://doi.org/10.1556/2052.2022.00352.

[26] "AI that composes complex instrumental music for movies, games, advertising and other types of digital media" last updated on July 3, 2020, https://cordis.europa.eu/article/id/421438-ai-composers-create-music-for-video-games

[27] Trade Related Aspects of Intellectual Property Rights, Art 9.

[28] Amarnath Sehgal v. Union of India 2005 (30) PTC 253 (Del).

[29] Martin Miernicki, Irene Ng (Huang Ying), " Artificial intelligence and moral rights" *AI & Society* 36, (2021): 319–329, https://doi.org/10.1007/s00146-020-01027-6.

[30] Sik Cheng Peng, " Artificial Intelligence and Copyright : The Author's Conundrum", WIPO- WTO Colloquium Papers: Research Papers from the WIPO- WTO Colloquium for Teachers of Intellectual Property Law 2018, 166-178, https://www.wto.org/english/tratop_e/trips_e/wipo_wto_colloquium_2018_e.pdf

Since protecting the work generated by an AI under the copyright law involves a lot of uncertainty and legal challenges, there is a parallel view that the work so generated should fall in the *public domain*, devoid of any form of protection.[31] One of the primary reasons for this view is that an AI does not incur any cost for generating the work and is capable of creating any number of iteration for no extra cost.[32] Yet another reason for this argument can be that an AI does not require any economic or moral motivation to create, which forms as one of the fundamentals of copyright jurisprudence.[33] The entire discussion of giving copyright protection to AI generated work is to create an exception to the requirement of human authorship to provide due recognition to the work and efforts that goes into creating a program capable of independently generating work.

The UK Copyright, Designs and Patents Act of 1988 (CDPA) defines *computer-generated work* as ' the work generated by a computer in circumstances such that there is no human author of the work'[34]. As per the section 9(3) of the CDPA, authorship vests in the person who makes the necessary arrangements for the creation of original, copyrightable computer-generated work[35] i.e., authorship will not be attributed to the user but the programmer of the computer. However, there are various scholars who have a different interpretation of this provision. However contrary to this, it is the user of the AI which decides upon the usage of the system and takes part in the selection of the data that is used by the AI. In such a case, it should be the user who makes the necessary arrangements for creation of the copyrightable work and not the programmer or the company owning AI. Therefore, it should be the user of AI who should be considered as an author and not the programmer.[36] Microsoft's 'Word' is used to write this paper but the authorship of the work is vested in the person who uses the program and not the company owning the software Word.[37] The Courts however have been taking a different view in matter similar to this issue i.e. when the author is not a human. As long as the AI is used as a tool or medium of creation, the authorship will vest in the person using the AI.[38] Similarly, in *Naruto* v. *Slater*[39], the court decided that a monkey cannot be considered as an author of a self- clicked photograph. The court also observed that for a copyright to vest, law requires a human authorship and not an animal or machines.[40] However, the situation of an AI algorithm is different since they have the potential of learning and developing themselves. In such a situation, where an AI can develop itself, whoever makes the arrangements for the work to be generated should be legally presumed to be a programmer.[41]

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[31] Daniel J. Gervais, " The Machine as Author", *Iowa Law Review* 105, 2053 (2020): 2053- 2106, https://ilr.law.uiowa.edu/print/volume-105-issue-5/the-machine-as-author/.

[32] Victor M. Palace, " What if Artificial Intelligence Wrote This: Artificial Intelligence and Copyright Law" *Florida Law Review* 71, no. 1 (2019): 217, https://scholarship.law.ufl.edu/flr/vol71/iss1/5

[33] Amir H. Khoury, " Intellectual Property Rights For ' Hubots' : On The Legal Implications Of Human-Like Robots As Innovators And Creators " *Cardozo Arts & Entertainment Law Journal* 35, (2016): 635.

[34] The Copyright, Designs and Patents Act, 1988, s.178 : "computer-generated", in relation to a work, means that the work is generated by computer in circumstances such that there is no human author of the work;

[35] Authorship of work.
(1)In this Part "author", in relation to a work, means the person who creates it….
(3)In the case of a literary, dramatic, musical or artistic work which is computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken.

[36] Sik Cheng Peng, " Artificial Intelligence and Copyright : The Author's Conundrum", WIPO- WTO Colloquium Papers: Research Papers from the WIPO- WTO Colloquium for Teachers of Intellectual Property Law 2018, 166-178, https://www.wto.org/english/tratop_e/trips_e/wipo_wto_colloquium_2018_e.pdf

[37] Andres Guadamuz, " Artificial Intelligence and Copyright", WIPO Magazine, accessed December 12, 2022, https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html

[38] Kalin Hristov, " Artificial Intelligence and the Copyright Dilemma", *IDEA- The Journal of the Franklin Pierce Centre for Intellectual Property* 57, no.3 (2017): 431-454, https://ipmall.law.unh.edu/sites/default/files/hosted_resources/IDEA/hristov_formatted.pdf.

[39]888 F. 3d 418 (9th Cir. 2018)

[40] Shyamkrishna Balganesh, " Do We Need a New Conception of Authorship?" *Columbia Journal of Law & Arts* 43, no.3 (2020): 371-374, https://doi.org/10.7916/jla.v43i3.5880.

[41] Bostrom, Nick, and Eliezer Yudkowsky. "The Ethics of Artificial Intelligence." Chapter. In The Cambridge Handbook of Artificial Intelligence, edited by Keith Frankish and William M. Ramsey, 316–34. Cambridge: Cambridge University Press, 2014. doi:10.1017/CBO9781139046855.020.

In reference to this, the Indian Copyright Act, 1957 does not define *computer generated work* like CDPA does, but it does define *author* of any computer generated literary, artistic, musical or dramatic work, as the person who results in creation of the work.[42] However, any work which is generated by a machine or is mechanically reproduced cannot be a subject matter of copyright protection. Since it is not possible to determine the authorship of a mechanically reproduced work, the subject matter cannot be copyrighted. In the opinion of the Delhi High Court, a copyright can only be conferred in favor of a natural person who has created the work.[43]Similarly, in *Tech Plus Media Private Ltd* v. *Jyoti Janda*[44], the Delhi High Court was of the view that a legal entity is incapable of holding a copyright. However, the court did give an alternate that a juristic person can hold a copyright under a contract with its author.[45]

The reason why AI is posing a challenge before legal world is that a non-human authorship was never contemplated before this technology was developed. Berne Convention, 1886, the parent convention on copyright, does not provide for protecting non human creations and since it has been incorporated by TRIPS, neither does the later. Similar position was adopted under WIPO Copyright Treaty of 1996 and WIPO Performance and Phonograms Treaty of 1996. However, the conventions did give the member countries an option to provide for legal protection beyond what has been laid down in the treaties.[46]

Table 1: Comparison of international agreements in reference to regulating AI[47]

Treaty	**Copyright subject matter**	**Defining Author**	**Authorship**	**Recognition of AI/ Computer Generated work**	**Originality & Creativity**	**Reproduction of work**
Berne Convention	Literary &artistic work	Not defined	Not defined	None	Minimum requirement/ Domestic regulations	Any medium of fixation/ Domestic regulations

[42] Sec 2(d) "author" means, —
…(vi) 'in relation to any literary, dramatic, musical or artistic work which is computer-generated, the person who causes the work to be created'
[43]1986 (1) ARBLR 86 Delhi.
[44] (2014) 60 PTC 121.
[45] (2014) 60 PTC 121.
[46] Dilan Thampapillai, "The Gatekeeper Doctrines: Originality and Authorship in Australia in the Age of Artificial Intelligence", WIPO- WTO Colloquium Papers: Research Papers from the WIPO- WTO Colloquium for Teachers of Intellectual Property Law, Vol 10 (2019): 1-10, https://www.wto.org/english/tratop_e/trips_e/colloquium_papers_e/2019/2019_complete_file_e.pdf
[47] Prof. Javiera Cáceres B. & Prof. Felipe Muñoz N.,"Artificial Intelligence, A New Frontier For Intellectual Property Policy Making", *NTUT Journal of Intellectual Property Law and Management* 9, no.2 (2020): 118.

UCC	Literary, scientific &artistic work	Not defined	Not defined	None	None	Fixation in tangible medium
TRIPS	Refers Berne Convention	Not defined (Refers to Berne Convention)	Not defined (Ref to Berne Convention)	None	Not defined (Ref to Berne Convention)	Tangible form of expression
WIPO Copyright Treaty	Computer Programs, compilation of databases	Ref to Berne Convention	Ref to Berne Convention	None	Ref to Berne Convention	Work can be expressed in any form
CPTPP	Performance/ Phonograms	Not defined	Not defined	None	Ref to Berne Convention	Ref to Berne Convention

III. ARTIFICIAL INTELLIGENCE AS AN AUTHOR

There have been various instances of AI creating a painting or a literary work which leads to the dilemma that can they be copyrighted? The subject matter of copyright protection are original works fixed in a tangible medium. However, the primary issue that remains before us is the requirement of human authorship in the work. This requirement of human authorship was discussed at length in *Urantia Foundation v. Maaherra*[48] where the question was on the authorship of a religious book with an unknown author, believed to be written by celestial beings, delivering their teachings through a 'medium'. A copyright issue was raised when the defendants wrote an aid to the Urania book, including its entire text and circulated for free. The question raised was can a work be copyrighted if it lacks human creativity. Interestingly, the court was of the opinion that since the work in question was a compilation, it can be copyrighted. However, a divine creation, like the Urania book itself, will not be copyrighted because even though the law does not mandate human authorship, it does not aim at protecting divine creations.[49]

[48] 895 F.Supp. 1347 (D.Ariz.1995)
[49] 895 F.Supp. 1347 (D.Ariz.1995)

There have been a lot of discussion on the issue of extending personality rights to an AI and to give them the authorship/ ownership right over the work that they create.[50] However, the traditional notion of copyright believes in protecting and recognizing the work created by humans. This approach is jurisprudentially justified by theories like labor theory and personality right theories, where the skill, judgement, and labor of the author are rewarded by granting copyright. Similarly, the personality right theory believes that the work is an extension of author's personality and will. It forms as one the core principles of law that authorship is necessarily a human process wherein a work is created with an object and humans should be able to reap pecuniary benefits from the labor put in by him. The Berne Convention also recognizes this concept when it grants authors the right to have both economic and moral right over their work.[51] Taking this concept a step ahead, the Universal Declaration of Human Rights (UDHR) protects the interest, both economic and moral, of everyone who creates scientific, literary, or artistic work.[52] This notion of human authorship have been upheld in judicial decisions in various countries[53] which recognizes human input for a creative output, making it eligible for a copyright protection. Upon facing the question on creative ability of AI and animals, the Courts have decided that the legislative intent implies that *humans* are eligible for copyright protection.[54] This anthropocentric view on authorship if shared by European Union as well, where an original work, entitled for a copyright protection is an '*author's own intellectual creation'*.[55] The Report on Intellectual Property Rights for the Development of Artificial Intelligence Technologies, released by EU in 2020[56], stated '…the principle of originality… is liked to a natural person' and a work is representative of the creative ability of a human's personality.[57]

Contrary to this, there are various scholars who have questioned this human- centered notion of authorship under the copyright law and advocates for the advancement of law.[58] The law should be in a constant state of development to address the latest issues. The advancement in technology questioned the suitability of the copyright law to protect an AI- generated work. The scholars argue that laws should change according to the changing need of the society, keeping in mind, the changing technologies and therefore, copyright law should be interpreted in such manner which may protect AI-generated work.[59] Labor theory should be applied equally to AI, making them entitled over the work they generate, just like a natural human creator. Preclusion of AI and their work from the copyright protection would ignore not only the creative output of AI but also the contributions of the programmer while developing the AI.[60] Due to the technological developments, the copyright laws were amended to protect the *computer- generated work*, attributing the copyright over the work to the

[50]Novelli, Claudio, Giorgio Bongiovanni, and Giovanni Sartor, " A Conceptual Framework For Legal Personality and its Application to AI", *Jurisprudence* 13, no. 2 (2022): 194-219, doi: 10.1080/20403313.2021.2010936

[51] Article 6 *bis.*

[52] UDHR, Article 27:… (2) Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.

[53]The US Supreme Court, for example, have decided that the *person* who fixes an idea into a tangible medium is entitled for copyright protection.

[54] Naruto v. Slater 2016 U.S. Dist. Lexis 11041 (N. D. Cal. Jan. 23, 2016).

[55] P. Bernt Hugenholtz & João Pedro Quintais, " Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?" *IIC- International Review of Intellectual Property and Competition Law* 52, (2021): 1190–1216, https://doi.org/10.1007/s40319-021-01115-0

[56] Report - A9-0176/2020 (REPORT on Intellectual Property Rights for the Development of Artificial Intelligence Technologies), European Parliament, https://www.europarl.europa.eu/doceo/document/A-9-2020-0176_EN.html

[57] Report - A9-0176/2020 (REPORT on Intellectual Property Rights for the Development of Artificial Intelligence Technologies), European Parliament, https://www.europarl.europa.eu/doceo/document/A-9-2020-0176_EN.html

[58] Ryan Abbott and Elizabeth Shubov, " The Revolution Has Arrived: AI Authorship and Copyright Law" (August 8, 2022). Available at SSRN: http://dx.doi.org/10.2139/ssrn.4185327.

[59] Bingbin Lu, "A theory of 'authorship transfer' and its application to the context of Artificial Intelligence creations", *Queen Mary Journal of Intellectual Property* 11, no. 1 (2021): 2-24, doi: https://doi.org/10.4337/qmjip.2021.01.01.

[60] Laetitia Coguic, " Forward Thinking or Right on Time?: A Proposal to Recognize Authorship and Inventorship to Artificial Intelligence" , *Indonesian Journal of International & Comparative Law* 8 (2021): 223.

person who had provided for the necessary arrangements for creation of the work. This amendment protected the work created by a non- human entity and addressed the issue of identifying the author in such situation.[61]

There have been various propositions and suggestions for creating a new category under copyright laws to protect AI-generated work. The European Parliament Committee on Legal Affairs released a report on Intellectual Property for the Development of Artificial Intelligence Technologies[62], recommending a neutral, forward looking copyright protection for AI-generated work. It further proposes for the protection to be extended to the *autonomous artificial creation* for 15 years. The justification behind this proposal is to incentivize the creation and dissemination of new inventions.[63]

The European Parliament's Committee on Legal Affairs is deliberating on the issue whether the copyright over AI generated work should be attributed to the owner of AI in the same manner as provided to a natural author.[64] Going by the justifications of labor theory and personality theory, the programmer of AI should be rewarded with the proprietary right over the creative output of the AI. Machines are the creation of human intellect, controlled by humans, making them an *agent* of their creator.[65] However, a copyright in favor of an AI developer could be justified only if the input by the developer generates the expected creative AI output. If there exists no relation between the input and the creative output, the copyright claim of the author would be difficult to justify.[66]

Even though there have been lot of discussion going on round this topic, the judicial interpretations to that effect are not many. The requirement of human agency in copyright law was discussed in *Naruto v. Slater*[67] where the court had declared that a copyright cannot vest in an animal simply because they are not humans. In 2019, Chinese court was faced with the question about human requirement for copyright ability of a work generated by an AI. In the case of S*henzhen Tencent Computer System Co., Ltd. v. Shanghai Yingxun Technology Co., Ltd.*[68] it was decided that an AI-generated literary work is eligible for copyright protection. This decision came at a time when the legal world was troubled with regulatory issues of AI. Also known as the *Dreamwriter* ruling, the decision gives an important insight in determining the authorship and ownership of AI- generated work. *Dreamwriter*, an AI technology developed by Tencent, is capable of writing articles with lightning speed and accuracy on its own. While deciding upon the copyrightability of the work created by the AI, the Court observed that Tencent had employed an entire team of creative professionals to handle the data input and format of article written by the AI. The Court held that even though the AI was able to generate the article on its own in couple of minutes, it was the creative team which controls its articulation and therefore it is the human input which is resulting in creation of the article. Moreover, since it was the creative team which had the complete authority over the material published and that it was published on the website of Tencent, Tencent was decided to be the deemed owner of copyright over the work generated by *Dreamwriter*.

Interestingly, this case is built upon another case decided by Chinese court in early 2019, *Feilin v. Baidu*[69]. The issue was again on the copyrightability of the report generated by an autonomous AI software. The court however recognized the

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[61] Section 2 (o) of the Copyright Act, 1957 "literary work" includes …computer programs, tables and compilations, including computer databases…

[62] Report - A9-0176/2020, REPORT on Intellectual Property Rights for the Development of Artificial Intelligence Technologies, European Parliament, https://www.europarl.europa.eu/doceo/document/A-9-2020-0176_EN.html

[63] Haochen Sun, " Redesigning Copyright Protection in the Era of Artificial Intelligence", *Iowa Law Review* 107, no.3 (2022): 1213.

[64] Report - A9-0176/2020, REPORT on Intellectual Property Rights for the Development of Artificial Intelligence Technologies, European Parliament, https://www.europarl.europa.eu/doceo/document/A-9-2020-0176_EN.html

[65] Jiahong Chen & Paul Burgess, " The Boundaries of Legal Personhood: How Spontaneous Intelligence Can Problematize Differences Between Humans, Artificial Intelligence, Companies and Animals" *Artificial Intelligence and Law* 27, no.1 (2019): 73-92, https://doi.org/10.1007/s10506-018-9229-x.

[66] Jiahong Chen & Paul Burgess, " The Boundaries of Legal Personhood: How Spontaneous Intelligence Can Problematize Differences Between Humans, Artificial Intelligence, Companies and Animals" *Artificial Intelligence and Law* 27, no.1 (2019): 73-92, https://doi.org/10.1007/s10506-018-9229-x.

[67] Naruto v. Slater, 888 F.3d 418, 426 (9th Cir. 2018).

[68] (2019 Yue 0305 Min Chu 14010)

[69] Feilin Law Firm v. Beijing Baidu Netcom Technology Co., Ltd. (2018) Beijing 0491 Min Chu No. 239

originality of the work and the human involvement but refused to recognize it as a copyrightable 'work'. The *Dreamwriter* case is probably a course-correction move by the Chinese court, recognizing the work generated by AI. Even though the judicial decision of *Dreamwriter* has opened a new arena on the legal dilemma over authorship and ownership of work generated by an AI, it fails to address the creations by an autonomous AI i.e. without any human interference. [70]

A forward looking approach is the need of the hour. In WIPO Conversation on Intellectual Property and Artificial Intelligence, many countries have suggested creation of a *sui- generic* system to protect work generated by AI. This would not only protect the work created by human assistance but also those created by autonomous AI, by providing with an alternate protection mechanism. In case an AI evolves itself, based on the data provided and creates something which was not intended by the developer, such work would be protected under the *sui generis* system[71] , similar to the one conferred to databases under European Union Database Directive.[72] The right so granted may prevent unfair exploitation of the work.

As reviewed, both national and international regulations have set a framework for protecting original work but they have a left out on defining fundamentals like author and authorship. The following table summarizes the comparison between United States, United Kingdome, European Union, and Indian law.

Table 2: Comparison of domestic regulations on copyrightable work and recognition of AI[73]

Domestic Legislation	**Law**	**Scope of Copyright**	**Author**	**Authorship**	**Recognition of AI/ Computer Generated work**	**Originality of work**	**Creativity as a prerequisite**	**Medium of expression**
USA	US Copyright Act, 1976	Literary, musical, artistic, dramatic works, audio-visual recordings, sound recordings and architectural work	Not defined	Requirement of human as an author	Yes (computer generate work)	Minimum requirement of original content	Author's creative discretion	Any form of tangible medium

[70] Niloufer Selvadurai & Rita Matulionyte, " Reconsidering Creativity: Copyright Protection for Works Generated Using Artificial Intelligence", *Journal of Intellectual Property Law & Practice*, 15, no 7, (2020), Pages 536–543, https://doi.org/10.1093/jiplp/jpaa062

[71] Brigitte Vezina and Brent Moran, "Artificial Intelligence and Creativity: Why we're Against Copyright Protection for AI-Generated Output", *Creative Commons*, August 10, 2020, https://creativecommons.org/2020/08/10/no-copyright-protection-for-ai-generated-output/.

[72] Directive 96/9/EC, of the European Parliament and of the Council of March 11, 1996 on the Legal Protection of Databases, 1996 O.J. (L 77) 20.

[73] Javiera Cáceres B. & Felipe Muñoz N., "Artificial Intelligence, A New Frontier For Intellectual Property Policy Making" *NTUT Journal of Intellectual Property Law and Management*,9, no.2, (2020) 116-139, https://iip.ntut.edu.tw/var/file/92/1092/img/2036/766536337.pdf#page=116.

UK	Copyright, Designs and Patent Act, 1988	Literary, dramatic, musical or artistic work	Creator	Programmers	Yes (computer generate work)	Depends on Judicial decisions	Depends on judicial decisions	Fixation not recognized as an element of authorship
EU	Directives & regulations	As defined under each directive	Not defined	Not defined	Adapt copyright laws according to the technological developments	Not defined	Member countries' discretion	Member countries' discretion
India	Indian Copyright act, 1957	Literary, Dramatic, musical and artistic work and cinematograph films and sound recordings	Creator	Not defined	Yes (computer generate work)	Minimum threshold	Author's creative discretion	Any tangible form

IV. CONCLUSION & SUGGESTIONS

The primary aim of IP law is to promote invention and creation of work which helps in development of the society at large. AI is a revolutionary technology which is growing everyday, impacting our lives. The traditional approach of IP protection should not hinder the protection of original AI generated work. Rather, the issue should be regarding attribution and ownership of copyright over such work. Since AI is not yet a legal person in the eyes of law, it cannot posses any rights or liability and therefore, the courts are reluctant in recognizing any rights in favor of AI. The current legal system priorities human requirement in granting the copyright, and rightly so, however the system can deliberate upon striking a balance between human creativity and technological development.

With revolutionary judicial decisions like discussed, it might be possible to extend the definition of authorship beyond its traditional notion and include AI- generated work. However, it might be difficult to determine the status of autonomous AI creations i.e. without human involvement. Incorporating an AI- generated work under copyright law is a matter of policy consideration and in a world where AI is becoming a part of our daily lives, it is imperative for Indian government to deliberate on the legal status of work generated by AI.

The purpose of this article was to analyze the suitability of the existing laws in regulating the AI- generated work, and in doing so, the article took into the consideration the concept of property ownership. On the basis of the above discussion, the authors have come up with the following suggestions. Machines like DABUS and Dreamwriter should be credited for the original work done by them. The courts and legislations are ill- equipped to decide upon issues arising out of technological revolution and are anthropocentric in their approach. With the developing technology, AI generated work would soon compete with man made work. From a legal perspective, a work created by an AI without human intervention would

not be protected for policy reasons, as discussed above. However, to what extend such human involvement will be required is an open question, as of now.

- Subjected to legislature and judicial recognition, a right similar to neighboring right might be relevant and helpful for protection of work generated purely by an AI.

- If the legislature grants protection to AI generated work, it would be a major shift in legal philosophy requiring major reforms necessary for not only legal but also moral protection to the work so generated. However, if a protection is granted in the nature of a *sui generis* protection or resembling the neighboring rights, the legal concept of authorship will remain unchanged.

Not recognizing a work as protectable under law merely because it is created by a AI is not a satisfactory answer. Similarly, the patent laws will face challenges from the evolving technologies, like DABUS.

- However, in order for an AI to be recognized as an author/ inventor, they need to have a legal capacity to own that right. Various non- human entities have been recognized by law as a juristic person where their rights and duties are conferred and enforced through a human agency. This type of protection can also be extended to an AI in order to protect the work created by them.
- This would not only give the AI the status of a legal person but would also make them accountable and represented through a human. However, the question of legal personhood has its own challenges and even if attribution is done, it would lead to more legal challenges.
- Any legal attribution should not enable the developer or employer of artificial intelligence as their agents to outsource and escape the liabilities and risk. These risks can be avoided by using financial autonomy of the entity to bind its actions.
- Another possible solution to ensuring liability of AI is to provide for mandatory insurance on AI activity which would depend upon the failure rate of the AI.
- Apart from this, attributing liability for AI failure on those legally obligated to maintain can be another solution.
- In the author's opinion, it would be reasonable if AI are granted rights according to the practical needs and granting rights and duties that are adequate, advantageous, and safe.

For example, if an AI creates an original content, on its own, capable of copyright protection, then the law should acknowledge the AI as an author but in a narrow, limited, and conditionally adjusted right. Although we cannot expect the legislature to overnight change the existing legal system, recognizing DABUS and similar AI as a legal person and an inventor would dramatically change the entire landscape of IP laws.

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