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Ownership of Copyrighted Material Created by Artificial Intelligence: An Indian Law Perspective

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ABSTRACT

The rationale behind Indian copyright law is utilitarian: writers are given a little monopoly to encourage the creation of unique, expressive works that will benefit society as a whole. In the very near future, this philosophy may need to be applied to non-human, machine writers. As more and more literary, musical, and artistic works are produced by software programmes, it seems that machine-authored works may soon become the norm rather than the exception. The proliferation of computer-generated works creates intriguing and innovative copyrightability issues, but the literature yet ignores a fundamental query: Does granting copyright protection to machine-authored works advance or undermine the goal of copyright law? This Comment adds a number of new insights to the field of copyright law. First, it raises basic concerns about how the current copyright regime would be applied to the numerous contributors to machine-authored works and highlights the difficulties in doing so, especially in determining the true author of the work. Second, it assesses whether the economic incentive theory should be used to determine if the human author of machine-authored works should be given rights. It contends that rigid implementation of copyright law results in a contribution/rights contradiction since the one who made the greatest contribution to the development of the work—its author—is not the person to whom copyright protection should be granted. The Comment concludes by arguing that it would be improper from a social policy viewpoint to extend protection to totally autonomous computer-generated works since copyrights provide nothing in the way of financial incentives to the actors engaged in producing machine-authored works.

Keywords: Artificial Intelligence, Author, Machine Author, Copyright, Computer generated.

I. INTRODUCTION

A "machine-authored work" is a wholly autonomous computer-generated work. Like Quakebot, the "machine author" is a piece of software that can produce literary works at will. Doing the software programming produces the "work" as a by-product. Works created by machines are

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clearly different from those that have previously been regarded as "machine-aided" works. An example of a machine-aided but not a machine-authored product would be a movie created with the video editing programme "Final Cut Pro". The final result was calculated and constructed by the machine, but it was only able to do so under the creative guidance of its human operator. The main distinction between a machine-authored work and one that was assisted by a computer is that a machine-authored work lacks a clear human author who would have guided the creative process via composition, organisation, selection, or direction[2].

The rise of computer-generated works poses unique and intriguing copyrightability problems. Some queries are easier to understand than others. For instance, legal experts have discussed the fundamental issue of whether machine-authored works are legally eligible to copyright protection as far back as the 1980s. Several legal academics have come to the conclusion that machine-authored works should be eligible to full copyright protection by applying the fundamental questions of originality and authorship. The present research, however, ignores a far more important query i.e Does extending copyright protection to automatically generated works advance or undermine the goal of copyright law? The rationale behind Indian copyright law is utilitarian: writers are given a little monopoly to encourage the creation of unique, expressive works that will benefit society as a whole. The justification for these measures has been obvious and thorough; without them, writers would lack the desire to continue producing works, and the general public would suffer as a result of this lack of innovation. The economic incentive argument has acquired more momentum since writers are significantly outmatched by possible copycats as a result of technology advancement. Imitators have a considerable advantage over creators, especially in the digital age when the marginal costs and sometimes even the fixed costs of replication are almost negligible. As a result, content creators are in a better position to seek more copyright protection since they incur considerable fixed expenses during creation and suffer unpredictable payments[3].

Yet, machine-authored works nonetheless offer significant distinctions from conventional works, even within the paradigm of economic reasoning. For instance, the constant and variable costs of generating each copyrightable piece using machine-authored content are almost nil, enabling creators to compete with copycats even in the absence of legal protection. The software programme that creates the article is also not able to be financially or legally motivated to

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[2] Will Oremus, The First News Report on the L.A. Earthquake Was Written by a Robot, SLATE (Mar. 17, 2023, 5:30 PM), http://www.slate.com/blogs/future_tense/2014/03/17/quakebot_los_angeles_robot_journalist_writes_article_on_la_earthquake.html [https://perma.cc/28Q6-C336].

[3] Pamela Samuelson, "Allocating Ownership Rights in Computer-Generated Works," University of Pittsburgh Law Review 47 (1986) p. 1222

generate more or fewer works, unlike a human author. For instance, an online sports writer who learns that his copyrighted pieces might bring in steady revenue is financially motivated to produce more content. On the other hand, a computer programme will run according to its instructions and produce articles independent of such monetary benefits[4].

To such a claim, there are two possible responses: first, that copyright protection is intended to encourage software developers to produce more software and, consequently, more creative works; and second, that copyright protection is intended to encourage individuals using software licenced under their names to produce more creative works. These arguments, nevertheless, don't hold up when applied to news stories that were generated automatically. On the first point, copyrightability may be expanded to include software without also expanding to include the content of articles produced by the programme. For the second, copyrightability offers no incentive to the software end-user since control and revenue for contemporary electronic news relies on being first to market. Particularly, the value of electronic news rises in the first six hours before drastically declining after that. After copyright protection is established, the article's residual value is negligible[5].

So, applying the current copyright system rigidly to works created by machines will result in a significant increase in the expense of copyright protection but nothing in the way of benefits. A single person might acquire an infinite number of copyrights, for instance, if machine-authored works are de facto copyrightable and there are no contractual workarounds. Such a person might easily act in ways that discourage rather than encourage future creative endeavours[6].

This Comment adds a number of new insights to the field of copyright law. First, it raises basic concerns about how the current copyright regime should be applied to the many parties engaged in producing machine-authored works—particularly with regard to determining who the true author of the work is. Second, it assesses whether the economic incentive theory should be used to determine if the human author or machine-authored works should be granted rights. It claims that rigid copyright enforcement results in a contribution/rights dilemma since the person who contributed to the development of the work—its author—is not the person to whom copyright protection should be granted. Lastly, the Comment makes the argument that it would be improper from a social policy aspect to extend protection to such entirely autonomous

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[4]Information Infrastructure Task Force (Bruce Lehman, Chair), Intellectual Property and the Na- tional Information Infrastructure: Report of the Working Group on Intellectual Property Rights (Washington, D.C.: United States Department of Commerce, 1995) p. 103.

[5]Is Artificial Intelligence Set to Become Art's Next Medium?, Christie's (Dec. 12, 2022), https://www.christies.com/features/A-collaboration-between-two-artists-one-humanone-a-machine-9332-1.aspx [https://perma.cc/R6NB-RU5F].

[6] Christopher Buccafusco, A Theory of Copyright Authorship, 102 Va. L. Rev. 1229 (2016)

computer-generated works since copyrights provide nothing in the way of financial incentives to the persons engaged in producing machine-authored works.

The goal of copyright law and its fundamental conditions are briefly covered in Part I, with an emphasis on the conventional view that the incentives offered to content creators are intended to intentionally, if indirectly, benefit the public. The legal status of machine-authored works is covered in Part II, with a focus on those that are entirely and independently produced by computers. The technological foundations of machine-authored works are briefly described in Part II, along with how they differ from later human-authored derivative works and how the law has been applied in countries that have addressed the matter. The main issues that result from providing machine-authored works with complete copyright protection are covered in Part III. This debate, in part, revaluates our level of assurance that computer-generated works adhere to the legal standards for copyright protection. Part IV comes to the conclusion that adopting the current copyright structure would be improper and explores potential other types of protection especially aimed at machine-authored works. It suggests the following three alternatives: Machine-authored works should be immediately placed in the public domain, (2) protected by a two-tier system resembling quasi-property rights, or (3) given to the programmer with restrictions on infringement, such as one-to-one identical copying[7].

II. MACHINE-AUTHORED WORKS

A. Machine-Authored Works Defined

In the past, courts have struggled with the question of copyright protection and new technologies. For instance, the famous case of *Burrow-Giles Lithographic Co. v. Sarony* considered whether an image may be protected by copyright even when it was really generated by a camera rather than a human. Burrow-Giles effectively demonstrates the growing conflict between copyright protection and technology since, at the time of the case, pictures were a new technology and had not yet been taken into account by the U.S Copyright Act. According to this case the Court held that the person who took the shot was the genuine author and had the "sole right to use, publish, and sell" it since he was the one who put the picture together. Writing on behalf of the Court, Justice Miller determined that Sarony had exerted sufficient control over the photographic output for it to qualify as an original work of art by having Oscar Wilde pose in a certain manner, wearing a specific outfit, and in a specific lighting environment. In this instance, the camera only served as a tool to aid with the author's creative focus. This logic has

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[7] William M. Landes & Richard A. Posner, The Economic Structure of Intellectual Property Law (2003) (articulating and defending an economic understanding of the aims of intellectual property law)

held true even in situations when a machine does the majority of the labour. In *Stern Electronics, Inc. v. Kaufman*, the Second Circuit determined that video games were copyrightable even if computer programmes produced the audiovisual displays, providing a more recent example. According to the court, which broke down the analysis by element, someone had to come up with ideas for how the audiovisual presentation would appear and sound. That's when originality started. The software was then created. Ultimately, the software was written into the memory storage systems so that when the game's components were used, the sounds and images could be experienced. The display that results meets the criteria for an original work[8].

A machine-authored piece of writing seems to be the next natural step in some senses. But, machine-authored works are distinctive in at least one significant way: the creation of the work in issue had no human involvement. The programme itself creates text using a natural language system, a kind of coding that emphasises judgement (rather than a language in and of itself). It takes decisions on the content, structure, organisation, style, packaging, and syntax at every stage of the development process. While it seems complex, the procedure may be divided into two basic steps: text planning and sentence planning. The first part of the program's process is deciding what information should be sent and how to organise that information into a language that makes sense. The software decides which structures to utilise after passing through potential lexical options in the second stage. The software simulates human thought during the creation of a work in many ways[9].

Consider the whole process of producing a machine-authored work in order to put the ambiguous legal connections involved in doing so into context. Let's say for the sake of simplicity that Pawan, a single individual, created the computer software "XDT." XDT creates news articles that summarise the score and key plays of any Cricket game using data from Cricbuzz.com and a natural language algorithm that Pawan programmed. Amit receives a licence from Pawan after which he publishes a dozen articles about recent Cricket games that XDT created.

Pawan will be able to copyright the source code for XDT thanks to existing legal precedent. According to Burrow-Giles' logic, Pawan is the author since he utilised a device, his computer, to focus his creative efforts and produce a protectable work, a software programme, which is fixed in a physical medium on his hard drive. Pawan has the right to provide Amit a licence to

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[8] Lenses, Methods, and Approaches in Intellectual Property Research, 2021 By Irene Calboli and Maria Lillà Montagnani

[9] Ferkiss, Technolocical Man 227 (1969); Miller, The National Data Center and Personal Privacy, TLIE ATLANTIC, Nov. 1967, at 53; cf. Osborn v United lStatesJ 385 U.S. 323, 353 (1966) (Justice Douglas, dissenting); Lopez v. United States, 373 U.S. 427, 450 (1963) (Justice Brennan, dissenting). See a

use his software since he is the creator and owner. The copyrightability of the dozen articles that XDT created for Amit raises issues not yet addressed by law, such as whether Amit should be regarded as the creator of these works given that he gave the order for XDT to create the articles. Would these pieces be regarded as copies of the original XDT software, in which case Pawan would be the author? Could Amit and Pawan write together? Could XDT be a writer by itself?[10]

B. Copyrightability of Machine-Authored Works

The government of India did not make a determination on the copyrightability of machine-authored works when the Copyright Act, 1957 was originally being enacted. The essential issue seems to be whether the "work" is really one of human authorship, with the computer only serving as a helping tool or if the conventional aspects of authorship were truly planned and carried out not by a man but by a machine. Machine-authored works were noted as being too far in the future to address and that there were too many ambiguities to resolve at that time. As per section 2(d)(vi)[11] says that the author of the work will the person who causes the work to be created in case the literary, dramatic, musical or artistic work which is computer generated. But this act is silent about the work which is automatically created by the Artificial Intelligence.

Legal analysts have continued to examine how machine-authored works should be handled notwithstanding the government's hesitation. As experts pointed out, machine-authored works cannot be covered under the current copyright structure. After all, the same essential standards of uniqueness, focus, and a minimal amount of inventiveness do not apply whether works are written by people or robots[12].

In considering originality, it's crucial to keep in mind that courts have consistently declined to decide what constitutes "unique enough" to qualify for copyright protection, highlighting the fact that it is not their job to assess the creative aspects of the work. That being said, the simple and mostly factual character of machine-authored works may not matter in determining originality, particularly given how similar many of these works are to those produced by humans. As a result, many observers have come to the conclusion that the machine-specific author's presentation of the facts is sufficient to prove originality."

The prerequisite for some creativity is to extend from uniqueness. Courts are extremely likely

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[10] Global Intellectual Property Protection and New Constitutionalism: Hedging Exclusive Rights, 2021 By Jonathan Griffiths (ed.), Tuomas Mylly (ed.)

[11] Copyright Act, 1957

[12] Artificial Intelligence Key Technologies and Opportunities, Published by Cambridge University Press 28 October 2022 By Wolfram Burgard

to find the bare minimum of innovation required for copyright protection given that computer programmes employ natural language algorithms to produce distinctive representations of the same set of facts. While the fixation requirement would easily be met, it is unclear who corrected the job. Although the majority of situations indicate that the user corrected the work by starting the application, there is a chance that the work was mended by the computer programmer[13].

C. Problems of Applying Traditional Copyright Framework

The problem of copyrighted material created by the Artificial Intelligence leads to the bigger and more contentious problem of authorship. Applying the usual copyright structure to machine-authored works creates substantial authorship issues. Several academicians have suggested that the machine author, the programmer, the end user, and combined variations (programmer and machine, end-user and machine, programmer and end-user) be regarded as the author who should be afforded copyright protection. Each suggestion has a logical justification that seems to be based on conventional copyright principles. Yet upon closer examination, each violates copyright regulations of India[14].

III. AUTHORSHIP AND OWNERSHIP

A. Machine as Author

One alternative is to provide authorship to the device or piece of software. Such a distribution would be in line with the U.S court's previous policy of giving authorship to the organisation that really exerted the creative power behind the copyrightable work. Although it is clear that the machine produced the final output in question, attributing ownership to the machine poses a serious legal problem since software and equipment are not considered to be separate legal persons. Therefore the obvious logic behind such a distribution, it is evident that a copyright would be granted to a body that lacks legal personality[15].

B. Programmer as Author

Unquestionably, the programmer has contributed most to the uniqueness and inventiveness of the machine-authored work. The programmer came up with the idea of building a programme that creates literary works, came up with a strategy for doing so, produced the required code, and fixed all of the flaws that prevented the programme from working correctly. So, one may

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[13] Kaur, Dr. (2019, March 1). *Right to Privacy and Right of Personality: Legal Discourse in India*. http://ijrar.com/. Retrieved October 20, 2022, from http://ijrar.com/upload_issue/ijrar_issue_20543247.pdf
[14] *Copyright In Works Created By Artificial Intelligence: Issues And Perspectives*. (n.d.). https://assets.website-files.com/. Retrieved March 5, 2023, from https://assets.website-files.com/5fc51cac262596a73b3d4753/603ea0682a4a376ec83c4023_Bharucha%20%26%20Partners%20Copyright%20AI.pdf
[15] Infra Note 3.

argue that any machine-authored work output is only possible thanks to the creativity of the programmer. This intuition suggests that the programmer should be given the copyright for a work that was created by a computer. Yet, it is uncertain whether the programmer should have any legal claims on anything other than the original software since the work was finally produced without any direct involvement from the programmer. Of course, it's possible to counter that the works the software produces are in fact derivative works derived from the original code. Nevertheless, the customary use of derivative works necessitates that the work be predicated upon, or constructed off of, the prior work, in addition to satisfying the intuitive notion of "based on" (i.e., but-for causation). Since they are not based on a "recognisable chunk of language from the programme," machine-authored works cannot be legally classified as derivative works[16].

The most logical economic choice would seem to be to provide rights to the end user. Interestingly, this evaluation was based on the assumption that the user would have a significant role in determining the final product. Due to the fact that anybody claiming authorship rights must have altered the subject matter to make it undeniably his own, this stance is difficult to justify when the participation of the user is almost nonexistent.

One may flimsily argue the fact that the user must interact with the software in order for it to create an output (by entering "start" or clicking a button, for example) provides the amount of participation required to justify protection. The software may be compared to a camera or other mechanical equipment, and the people who use these items are often seen as the creators of the artistic output as per provisions of Copyright Act, 1957. This argument, however, ignores the fact that the creative choices available when making works by machines are significantly more constrained than those available when creating works by using a camera or recording device. The end-user of a computer programme has no actual say in the composition or organisation. So, it is challenging to claim that the programme fosters human creativity[17].

C. Mutual Authorship

At first look, it would seem that granting shared authorship (in any combination) would be a good way to get around the issue of determining authorship of the copyrighted material created by the Artificial Intelligence. It appears reasonable to provide copyright protection to all contributors as each author contributed to the production of the final output. Allocating shared

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[16] *Artificial Intelligence and Copyright. - Ownership* https://europeancopyrightsocietydotorg.files.wordpress.com/. Retrieved March 1, 2023, from https://europeancopyrightsocietydotorg.files.wordpress.com/2018/06/rognstad-ai-ownership-brussels.pdf
[17] Ibid

authorship, however, causes more issues than it fixes. The main issue is the current legal definition of a "joint work," Section 2(z) of the Indian Copyright Act, 1957 as "a work produced by the collaboration of two or more authors in which the contribution of one author is not distinct from the contribution of the other author or authors"[18].

The elements of the legal criteria for a collaborative work would probably be failed by the machine-authored work. It is unclear what the programmer added to the machine-authored work on the first component. Software programming may represent his contribution, but because his code can be individually copyrighted, this setup would allow for double dipping. The programmer would not have made any contributions to the plan if the code could not be regarded as his work. The act of pushing a button or entering a phrase is not likely to be unique or include even a little amount of creativity; hence it is doubtful that the end user's input will be independently copyrightable. The parties that would later utilise the software were not known at the time the programme was produced, making it challenging to demonstrate that the programmer intended for all of his licensees to work with him on a joint venture. It is thus improbable that the requirement for joint works—that the parties had to have intended for their efforts to be combined—will be met. As a result, even if assigning shared authorship first seems appealing, it is an extremely unworkable option[19].

IV. THE CONTRIBUTION /RIGHTS PARADOX

Let's suppose that the machine-authored work was generated with assignable authorship rights; thanks to the copyright contributions of several human entities. The second issue is that, no alteration of copyright attribution and ownership distribution fulfils the requirements of the Act and continues to be in line with public policy.

Assuming for the time being that the actual software itself is not a legal person capable of holding a copyright, we shall think about giving one of the two remaining parties—the programmer or the end user—the authority to get the protection. On the one hand, the foundation of copyright law is to reward the creative author. The programmer has made the biggest creative contribution to the final product in the case of machine-authored works and is thus likely to be granted the copyright. We may easily draw the conclusion that the programmer should be given copyright protection on all machine-authored works by using the framework of conventional copyright law. On the other hand, giving the programmer the ability to copyright his software and any future outputs overpays him for his work and encourages copyright

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[18] Infra Note 8.

[19] (n.d.). Ownership of Copyright in Works of Artificial Intelligence: Need for A Legal Framework. Retrieved January 30, 2023 from https://ezenwaohaetorc.org/journals/index.php/UNIZIKJPPL/article/download/1060/1062

hoarding. A machine-author who writes about breaking news may create a few dozen pieces per day, each with copyright protection granted to the programmer. In contrast, software like Quakebot could only produce a few dozen articles per year since its job is restricted to natural catastrophes. While it is possible for other creators to express themselves on the underlying facts through their own works, this allocation regime would lead to more copyright infringement lawsuits, which would not be in the public's best interests given the volume of copyright takedown requests[20].

From an economic and social policy perspective, it seems more logical to give the end user the copyright. Economic incentives should link the end-interests user's with the interests of the general public as the end-user selects the quantity and calibre of articles that fill the market since the end-user is ultimately the one who decides whether a machine-authored work is generated. Since the programmer's code already has the right to copyright protection, they are motivated to write the software regardless of financial incentives to produce machine-authored works. It appears preferable to provide copyright protection to the end-user, who is far more likely to have a significant part in creating than the programmer, if we are concerned with encouraging the creation of more creative works. In news production, for instance, an end-user, plays a larger role in pushing news into the public sphere than would the software company that created the machine author since it chooses which news articles are publication-worthy and what details should be highlighted within a particular article. The end-user has made very few creative contributions and has the weakest claim to any copyrightable contributions, therefore it would be challenging for him to get a copyright under standard copyright theory. The simple act of clicking a button would probably not meet the minimal creative requirement set out in the Indian Copyright law[21].

The more general question of whether machine-authored works need copyright protection at all is still up for discussion. Remember that copyright protection is given to creative works for the benefit of the public; the temporary grant of an intellectual property monopoly acts as a financial incentive for creators to make works for the public. I am now evaluating whether copyright allocation for the programmer or the end-user in the case of machine-authored works will achieve the public benefit goal of the Copyright Act. Even at first glance, it's not obvious how granting the programmer the power to copyright works created by its software will further the goals of copyright law. In terms of financial incentives, the copyright protection that his code

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[20] (n.d.). What is artificial intelligence jonand why does it matter for Copyright. Retrieved January 22, 2023, from https://www.4ipcouncil.com/application/files/6815/4876/6908/What_is_artificial_intelligence_and_why_does_it _matter_for_Copyright.pdf

[21] Ibid

enjoys encourages the programmer to create works. It is challenging to provide a convincing case for how extending further protection will encourage this innovative conduct. Some sectors of intellectual property do not provide this extra protection. The issue of derivative works is one that may be raised, but as was already said, the machine-authored work does not depend on the code in the same way that, for instance, a movie would employ a copyrighted character (e.g., Mickey Mouse). Maybe purchasing a digital camera and then taking some images would be a better comparison. The software code that makes the camera work may be protected by copyright, but it does not give the copyright holder the right to assert ownership over the images taken by the photographer. At most, giving the programmer their own copyright would provide little extra motivation to develop programmes that produce machine-authored works. In the worst case scenario, such a system would allow for the broad monopolisation of all future works produced by a single piece of software, tilting the playing field excessively in favour of content creators at the expense of the general public[22].

The claim that copyright protection could encourage the end-user to create more innovative works is a little more persuasive. Yet in terms of the economic equation, offering machine-authored works copyright protection should, in principle, neither increase nor decrease incentives for the end user. After all, there is no manufacturing expense incurred by the consumer. While the cost of licencing the software from the programmer would be borne by the end-user, it is unlikely that the cost would be covered by the copyright protection provided to the articles produced. In reality, a strong first-to-market economic incentive exists in the digital market, irrespective of any copyright protection, due to the tremendous demand for instantly consumable information. Website traffic, or the overall number of visits to a website, has become the main indicator of economic success since the majority of websites make money via advertising. Increasing traffic in the world of internet news refers to publishing fresh content as soon as feasible. The time it would take the Copyright Office to award copyright protection for a certain piece would probably much outlast its usefulness. Giving the end-user copyright protection does not, however, really provide any further societal benefits.

With digital media, the first-mover economic incentive persists regardless of whether the work is protected by copyright. Copyright does neither increase nor decrease the likelihood that an end user would produce since none of the typical advantages of copyright protection apply to works created by machines. Extending copyright protection for online material would not be sensible from a social policy perspective since the procedure for doing so moves too slowly to

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[22] Infra Note 5

genuinely give a public economic benefit[23].

V. PROTECTION PROPOSALS DESIGNED FOR MACHINE-AUTHORED WORKS

In light of how machine-authored works fit within the current legal framework, a different protection system should be developed to promote advantageous social policies. This section considers three prospective plans and analyses each one's flaws.

1. Immediate Entry into the Public Domain

One remedy would be for all machine-authored works to instantly become part of the public domain. This idea looks severe on the surface since it would seem to deny the speculative legal author of rights that were usually his. Yet, closer examination reveals that this procedure has a number of useful advantages and just a few disadvantages.

In this case, the programme is the real "author" of the machine-authored piece. The programme would not lose any rights as a result of this treatment since it is not a legal person and does not have any legal rights in the first place. The copyrightability of the programmer's code would also provide enough pay and legal protection. However, even if the end user is not permitted to copyright the original machine-authored work, she is nevertheless permitted to do so for any derivative works that she produces using the original work as inspiration. In fact, in the instance of the Los Angeles Times and Quakebot, the article's final revision and publication on the L.A. Times website would probably still be protected by copyright under this system. The human-created works built on the base of machine writers would continue to be entitled to copyright protection, if the work of the journalists and editors in fleshing out the piece was adequate to fulfil the requirements of originality and creativity. Therefore in a way, making all machine-authored works publicly accessible would support the public's goal in having access to creative works without unreasonably limiting the incentives for content creators to be creative[24].

The difficulty in putting this concept into practise is the main critique. Proving to the Copyright Office that the work is human-generated rather than machine-created will prove to be ever more difficult given how challenging it may be to discern between human works and machine-authored works. At the moment, machines can only write rather straightforward articles that are mostly made up of facts and figures. Nonetheless, it is conceivable to envision a far more advanced machine author who can write elegant books in the not-too-distant future. There are

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[23]Artificial intelligence as producer and consumer of copyright works: evaluating the consequences of algorithmic creativity. Retrieved February 3, 2023, from https://eprints.lse.ac.uk/105272/1/Bonadio_McDonagh_IPQ_2020.pdf

[24] (2020). Artificial Intelligence and Copyright: Issues and Challenges. Retrieved February 14, 2023, from https://ili.ac.in/pdf/vka.pdf

undoubtedly realistic solutions, but one option may be to instruct programmers to include a watermark of some kind in the output produced by machines.

Nonetheless, it should be noted that this argument fails to acknowledge the dual nature of copyright protection. If such a framework were implemented, accused infringers would have to prove that the work in issue was machine-authored and that the copyright protection is invalid in order for it to have any real teeth. So, this public domain approach would actually make it more difficult to enforce erroneous copyrights and discourage legal action[25].

2. End-User: The Quasi-Property Treatment

A quasi-property right that grants the end-user complete rights against direct rivals inside the industry but not against members of the public would be one feasible allocation if copyright protection were to be provided to the end-user in some way. *International News Services v. Associated Press* is a great illustration of such a quasi-property right. In this instance, two rival news organisations that covered World War 1 were involved. The Allied Powers practically forbade International News Services (INS) from reporting on the news, although the Associated Press (AP) reported live from the front. As a workaround, INS used the AP news bulletin to get AP news, modified it, and then released it as their own in the West hours later. As a result, AP accuses INS of violating the law. INS argued that AP's news stories' fundamental facts were not protected and that its rewrites did not violate the specific expression of AP's copyrighted works. The Supreme Court ruled that since AP generated the content as a consequence of investing time, effort, and money, a quasi-property right may be established against INS. The acts of INS amounted to theft since they denied AP the full fruits of its efforts.

It's true that using a quasi-property framework in the context of machine-authored works could demand more finesse than it did for their forerunners. The claim might be made that the quasi-property right essentially creates a first-to-market problem by granting the quasi-property right to the party who can do it first, making everyone else infringers. In the case of a machine author, this would be problematic since several parties may be granted licences to use the same software at the same time to create works, making it theoretically difficult to identify who should be in possession of the right. Also, because robots will always be quicker than people, most journalism may be seen to violate quasi-property rights[26].

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[25] (2018). Artificial Intelligence and Intellectual Property Laws in India: Is It Time For Renaissance? Retrieved January 12, 2023, from https://www.ijlmh.com/wp-content/uploads/2019/03/Artificial-Intelligence-And-Intellectual-Property-Laws-In-India-Is-It-Time-For-Renaissance.pdf

[26] (2020). Artificial Intelligence Generated Works under Copyright Law. Retrieved March 3, 2023, from http://www.nlujlawreview.in/wp-content/uploads/2020/04/62-NLUJ-Law-Review-93-2020.pdf

VI. PROGRAMMER ALLOCATION: ONE-FOR-ONE MATCHING

The breadth of protection should be very limited if copyright protection is given to the programmer directly due to the possibility of copyright hoarding. For instance, the programmer's right may be restricted to just preventing one-to-one copies of the underlying source, with infringement only occurring if a reasonable person using current standards would identify the work as a direct duplicate. A threshold that leaves leeway for judicial discretion is not new, despite the fact that this may raise some worries about judicial activism. Enabling courts to determine whether there has been infringement using the reasonable person standard will enable those who have really been injured to file claims while discouraging pointless lawsuits[27].

Any harsher treatment, particularly a wide universal grant of copyright protection like that which has traditionally been seen in other media, would give the programmer an excessive amount of negotiating leverage, similar to a monopoly. This is particularly true since, in reality, the programmer is probably a business. These organisations are significantly more likely to litigate to preserve their intellectual property since they have much more financial resources than any one person. Because to the for-profit nature of coders in application, the risks of providing copyright protection to a single programmer are therefore significantly increased, making it imperative that the copyright, should it be provided to the programmer, be as thin as possible[28].

VII. CONCLUSION

The Copyright Act of 1970 was enacted by government of India in response to a comparable need it saw in the other parts of the world. Since then, every alteration and extension has been approved under the justification that doing so will foster innovation and advance society. We must once again consider whether it is in the interests of the general public to provide copyright protection to a new category of works—those written by automated processes. Comparable software is being developed in a variety of disciplines, including fractal analysis and music production. If the law is to fulfil its commitment to furthering the public interest, it must adapt to new technologies as these computer-generated programmes become a prevalent form of creative expression. Before granting copyright protection to machine-authored works, there are important concerns to examine given the technical nature of the work and the incentive interest

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[27] Ibid

[28] (2022). Moral Rights and Copyright Liability in the Era of Artificial Intelligence. Retrieved March 13, 2023, from https://www.ijhssi.org/papers/vol11(12)/F11123642.pdf

of the many participants. The programmer already has the ability to copyright their work, on the one hand. It is unclear if giving copyright rights to the programmes' output will further encourage them to create software that doesn't adversely impede public access. On the other hand, the end user has business interests that encourage utilising programmes to publish copyrighted materials whether or not these pieces are copyrightable in the digital era. A compelling case may be made that machine-authored works should not be protected by copyright as a matter of public policy in light of these incentive systems. The basic issues of authorship, distribution, and public benefit still need to be resolved, even though these works would probably fulfil the established legal standards of the Copyright Act and later interpretations. Financial incentives and legal justification do not encourage the next generation of mechanical writers; they are not compelled to produce creative works by them. Even while current copyright laws protect machine authorship, it would still happen even in the absence of extra legal safeguards. Programs will go on processing, calculating, and generating with each passing second whether or not the law provides copyright protection. Attempting to include machine-authored works within present copyright legislation would be pointless and, in fact, against public policy.

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