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Moral Rights and Copyright Liability in the Era of Artificial Intelligence

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ABSTRACT:
The phenomenal development in the field of Artificial Intelligence (hereinafter as "Al) has compelled one to surge into the legalities and challenges imposed by it. Even though Al is not a recent occurrence, its progress in the last decade has been unprecedented From generating creative works autonomously to producing results which even its programmer is unaware of Al has manifested itself as a close alternative to human artistry

Considering the extent of intellectual and financial investmen involved in developing Al there is a pressing need to determine the legal framework within which it can be protected comprehensively This would not only prevent its misuse but would also incentivize its developers to surge further on this path that is already proving beneficial to other sectors such as arts, medicine. education and Technology Copyright law protects creative and original works produced by an author. The categories of work generated by Al clearly fall within the ambit of copyright protection However the question that arises is whether such protection can be extended to a non-human author as well? Although the requirement of a human author has not been explicitly mentioned in any of the international treaties or domestic legislations fincluding the Indian legislation ie Copyright Act. 1957) yet there have been reservations in treating a machine as an author for it has no locus standi before a court of law

Moreover, it is difficult to fathom a machine exploiting the economic and moral rights borne from grant of copyright or on the other hand holding such a machine responsible for a copyright violation. As releasing a work generated by AI in public domain immediately upon its creation runs counterproductive to its development the next best alternative has been to grant authorshipto such a human who deserves to be the author of such works by virme of one provision or the other of the copyright low This paper first attempts to law down a mechanism consimum with the Indian copyright law to recognize a humconcunthor for Al generated works On this basis the paper then proceeds to highlight the relationship between artificial intelligence and moral rights which regard a work to be on extension of its author personality-un aspect crucially missing in a machine generated work Also, with machines autonomoush producing works which at times infringe copyright in another work it is essential to determine copyright labil Lastly the present paper concludes by giving some suggestions for the fair and effective protection of AI works generated

To this end both an analytical and deductive approach has been employed in in depth study of scholarly and legal texts on the issue has been conducted to not only support the author's stance but also to determine the most efficient solution to the above mentioned issues.
KEYWORDS: *Copyright Artificial Intelligence, Authorship Economic Rights Moral Rights. Copyright Liability*

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I. INTRODUCTION

It is a difficult task, if not an impossible one, to define Artificial Intelligence (hereinafter Al) with certitude. Even John McCarthy, the American computer scientist who coined this term refrained from defining it and consequently, the term has been defined differently by scholars and scientists depending upon its varied aspects110, However, for sake of simplicity and clarity, it can be most appropriately referred to as system capable of performing tasks that otherwise require human intelligence. It becomes pertinent to mention that the pace of development in the field of Al in the recent past has been so phenomenal that the threshold between man and machine is gettingthinner by the day. This trend is well manifested by works such as The Next Rembrandt, The Day A Computer Writes A Novel!2 and Wave Net to name a few.

In fact, so much so has been the impact of Al-generated works that a well-defined legal framework for its effective protection has become the need of the hour. To this effect and for the purpose of protecting the

creativity aspect of such works, copyright law seems to offer the most feasible solution. The works produced by using Al squarely fall within the categories that form the subject matter of copyright protection. Also, the economic rights emanating from such protection are wide enough to cover almost all commercial interests that would incentivize development in this field. But what still remains uncertain is the concept of authorship and ownership with respect to Al-generated works In other words, the vesting of copyright in a machine is what unleashes a bag full of obscurities.

A non-human author was never comprehended earlier as the ability to think and innovate has so long been only associated with humans. Although the requirement of a human author has not been explicitly stipulated in any of the international treaties or domestic legislations governing copyright (including the Indian legislation i.e. The Copyright Act, 1957) yet there have been reservations in treating a machine as an author for it has no locus standi in a court of law. Moreover, it is a well-known fact that copyright protection not only prevents unauthorized use by making way for infringement proceedings but also allows the creator to commercially exploit its creation. Both these benefits are of no avail to a machine that neither can initiate a copyright infringement before a court of law nor use the economic rights to its advantage

While the above-mentioned issues have received some attention in the recent past, the relationship between Al and moral rights and copyright liability a machine-generated work are matters that have not been discussed to a

comparable extent. The rationale behind grant of moral rights is in complete contradistinction to that of economic nights While the former protects the personal interests of a creator the latter safeguards the commercial gains. Also, the belief that a work is an extension of its creator's personality is substantially missing in the case of a machine generated work. Likewise, a machine programmed to do certain tasks might autonomously create a work which infringes the copyright in another work. The machine for obvious reasons cannot be held liable for such infringement. Hence while considering the grant of copyright to Al generated works it is also significant to address the above-mentioned issues within the existing framework of copyright law

It is in this background that the article attempts to determine whether moral nights can be granted to Al generated works and if not then in whom would such rights vest. Also, an attempt has been made to resolve the issue of copyright hability when an Al machine produces works autonomously. Further, for the sake of completion, the article begins with addressing the authorship/ownership issues related to Al generated works. Broad Classification of Al and Copyright Law

At the outset it is important to distinguish Al's code from the work that it produces using that code. While the code or algorithm that enables a machine to generate an output is a computer programme, the work so produced may be a literary, musical or artistic work. For the purposes of copyright protection, the Copyright Act, 1957 (hereinafter the Act) defines a 'work' to include literary, dramatic, artistic and musical work amongst others"". Further 2 (0) of the Act, includes a computer programme as a form of literary work. Thus, both the code as well as its output so produced fall within the ambit of copyright protection.

For a better understanding of Al and works created by it. the same has been classified into two broad categories. The first one is the category of Al which creates work using programmes authored by humans. A classic example ofsuch works would be a computer programme created by a human to perform certain predefined tasks. Although the author of the computer programme may not be aware of the exact output but would have some idea or defined limits within which the result would manifest itself Human intervention in this category would be required at two stages the mitial stage when the program is authored and at every later stage when certain inputs are required to be given to attain the desired output. For instance, a language translator which is made to perform the task of translating text in the desired language upon being fed with information by its end users.

The second category comprises of the kind of Al which is more recent in time and has created more of a stir especially when it comes to granting any kind of legal protection to the works generated by it. The reason being that they are more or less autonomously generated works. Human intervention in this category is limited to the initial stages of authoring the Al system. Apart from this initial human intervention, the machine uses its own superficial intelligence to create an output less known or rather unknown to its author. The work is created in an independent and autonomous manner by exercising free choice amongst alternatives by the machine itself In this kind of Al system the machine/software emulates the configuration of human neural networks to create varying results, each distinct from the previous ones. The function that it performs is akin to the human mind and intelligence. Recent examples of it are a painting robot named 'e-David', developed by the University of

Konstanz. Germany takes pictures through a camera embedded in its system and makes original paintings 16 and the painting titled 'Next Rembrandt was created by a 3-D printer after analyzing 346 of the 17th-century Dutch painter Rembrandt Harmen zoon van Rijn.

II. AUTHORSHIP IN AI-GENERATED WORKS

Determining the author of Al's generated works is of fundamental importance for this in turn would ascertain ownership of copyright with its necessary incidents of financial benefits in the form of economic rights as wellcopyright liability in case of a copyright infringement. Most copyright legislations define an author in terms of the work created rather than in terms of its legal personality. The reason is that intellectual creativity is presumed to be an attribute of mankind alone. However, the upsurge in autonomous and creative works produced by Al has diluted the certitude of the above-mentioned premise In fact, so much so has been the impact of this technological advent that many scholars have already vehemently begun to argue in favor of non-human authors as stakeholders in IP laws.

III. CAN NON-HUMAN CREATORS BE HUMANS?

The traditionally non-controversial concept of authorship in copyright law, has become one of obscurity and ambiguity in the wake of Al related developments. It has introduced the possibility of having a non-human' author which in the past could not be fathomed. Although, as already mentioned the law does not explicitly state the requirement of a human author but the concept of ownership which is intertwined with authorship leans in favour of such a supposition. It is the owner of a work that reaps the benefit of economic rights borne from the grant of copyright. The basis for such rights is to allow the owner to commercially exploit its work which in turn encourages to produce more such work. A machine needs no incentive to create more works rather it is the programmer behind AI systems who needs to be rewarded so that the society gets more of such creations. Even if one argues that machines do have bills to pay for electricity, maintenance and to obtain resources for its inputs, etc. their dependency on humans for maintenance and adequate functioning cannot be overlooked. It is here that the grant of copyright to a non-human author becomes dubitable.

IV. MONKEY SELFIE CASE ON HUMAN AUTHOR

The recent Monkey Selfie case is an authority which dispels the existence of a non-human author. In this case, a macaque on the Indonesian island of Sulawesi, took a series of photographs from the camera of nature photographer David Slater The British photographer had placed the camera on the tripod. adjusted its settings to accommodate the surrounding and intentionally left the shutter button accessible to the macaques One female macaque jumped to the opportunity and clicked many photographs most of which were blur. The few that were usable became widely popular and the nature photographer began licensing it upon the belief that he owned the copyright in them. This was challenged by PETA in a US court on behalf of the macaque, alleging that since the photographs were taken by the female macaque the copyright in the same vested in her. The court dismissed the claim stating that even if the macaque had taken the photographs independently, copyright cannot vest in her as animals have no standing in a court of law and so cannot sue for copyright infringement"". Consequently, the photographs were released in public domain, denying authorship to both David Slater as well as the female macaque.

V. DOES RELEASE OF AI GENERATED IN PUBLIC DOMAIN RESOLVE THE ISSUE?

Considering the dicta of the monkey selfie case can it be said that releasing Al-generated works in the public domain would resolve the issue of ownership in such works since allwould equally benefit from exploiting it? The answer would be in negative. Complex Al programs require the investment of a whole lot of time and money on the part of programmers as well as the companies for which they are working Releasing works in the public domain would prevent them from enjoying the financial benefits that accrue from grants of copyright protection This, in turn, would dissuade developers as well as companies from investing in Al related research which would not only be detrimental to Al but would also hamper growth in sectors like education, medicine, technology,etc where the impact of Al research is 474 proving very beneficial Thus, grant of copyright protection to Al generated works is imperative as it has the twin advantage of giving incentive to creativity and increasing the number of works that would be in public domain once the term of copyright expires.

VI. HUMAN AUTHORSHIP FOR AI GENERATED WORKS

Having already discussed that a 'non-human author needs no incentive to create new works and that release of AI generated works in public domain would decelerate the development in this field, it becomes pertinent to lay a mechanism whereby authorship in such works can be determined keeping in mind the fundamentals of copyright law While doing so it is of essence to protect the interests of those who toil to create

a system that is capable of autonomously creative results. This would encompass within its ambit not only the programmer of an Al code but also companies and other organizations thatinvest huge sums to develop Al systems.

The Indian copyright regime has two provisions that provide a viable solution in this regard. The first one is the provisiongoverning computer-generated works and the second is the exception of work-made-for-hire.

VII. AUTHORSHIP OF COMPUTER-GENERATED WORKS

The provision for computer-generated works in the Act allows authorship to vest in the person that causes the work to be created. Hence, it is the programmer of such computer programmes who is considered to be the author A similar provision is found in the domestic legislations of countries like UK. Ireland and New Zealand. Such a provision rests on the assumption that authorship vests in the person who started the process It brings forth the fact that generating works using Al is not about just pressing a button rather it involves a process on the part of the programmer which is both lengthy and full of intellectual creativity In this sense it seems fair to reward the programmer who initiated the whole process giving Al the capability to produce an output

However, it is doubtful if this provision also includes works that have been generated automatically and independently by Al and where the end result is created very far down the line when the programmer is not even present" Such works were not even envisaged when the provision was made and its applicability may be contested. Nevertheless, the provision can always be interpreted to mean granting of authorship to the one who initially enabled Al to generate any result.

VIII. THE DOCTRINE OF WORK-MADE-FOR-HIRE

The work-made-for-hire doctrine is an exception to general rule that the author is the first owner of copyright. It is a legal fiction wherein the employer in the absence of a contract to the contrary is considered to be the owner of a work of which it is not the author. Section 17 of the Act, states that in case of a work made in the course of the ownership of it shall vest in the employer.

It has been suggested by many scholars that this doctrinecan be reinterpreted to provide a possible solution to authorship issues of Al generated works Kalin Hristov for instance, has argued that the terms employer and employee should be interpreted in a manner that it fulfils the newly arising requirements In that sense, an employer should mean someone who employs another to complete a task Such a definition would include a programmer or owner of an Al machine to be an employer who hires the services of the machine (employee) to generate new works" would allow both programmers as well companies that invest in developing Al systems to recoup their finances by exploiting Al generated works as copyright owners and to have a legal standing in courts in case of any copyright violation. Further, such a system would prevent considering the programmer as the author-in-fact of works that have been actually created by a code or the possibility of vesting copyright in a machine.

IX. MORAL RIGHTS AND COPYRIGHT

In contrast to economic rights under copyright that mostimportantly protect the financial interests of an owner. moral rights seek to protect the personhood of a creator In other words, it is often believed that when individuals create works they bestow it with their personality and individuality. That intellectual creativity is personal reflection of an individual, their infancy, their childhood, recent experiencesetc." "In fact, such is the intimate bond between the creator and its creations that a work is often known not by its own name but that of its creator. For instance, most of Picasso's work is referred to as Picasso and that of Miro's as Miro.

Moreover, one of the strongest justifications for initial ownership of a creative work to remain with its creator is that developing such works fosters not only the intellectual components of human personality but also the emotional ones. Hence, creators have a natural right to control theirintellectual property that forms an integral part of their personhood The continental European law even moves a step further to describe intellectual works as 'personal spiritual creations' such that the copyright legislations here not only claim to protect the author's financial interests but also the spiritual connections that authors have with their respective works In India as well, moral rights are I considered to be an intrinsic part of the copyright regime. Both the night of attribution and integrity are granted to an author which prevail even after a work has been assigned' It is in this background that one needs to assess the rationality of the grant of such rights to Al generated works.

X. MORAL RIGHTS DILEMMA IN AI

The personal interests of an author that are protected by moral rights are conceptually different from the commercial ones. It is to incentivize a creator and to allow him to financially gain from his creation that economic rights are granted. This aspect is to a large extent justified when such nights are granted to programmers or companies that foster the development of Al. However, since a 'personal bond with work' is considered to be a sine qua non for grant of moral rights it becomes difficult to assess in whom would such

rights vest. For this purpose. two situations are analyzed First, whether such rights could vest in a non-human author Le the Al machine itself and secondly if creators of Al (programmers or companies can be granted moral rights in works that are Al generated.

XI. MORAL RIGHTS TO AI

With human intervention reducing like never before and Al becoming not merely an automatic but also an autonomous system, it seems in the first instance that Al in can be the owner of moral rights. The recent 'black box problem' that emphasizes on the inability of humans to comprehend why a machine produces certain results especially when machine-learning algorithms are used to train Al. further adds weight to the claim that machines reflect attributes ofindividual decision making and autonomy

However, can we still with conviction state that human creativity and machine creativity are indistinguishable? In other words, can we accord a personality sphere which is a prerequisite for grant of moral rights to machine produced works? The answer to both the questions would be in the negative for individual personality of a human and its impact on his creations does not stem from any artificial algorithm learning process but is a natural characteristic amount of sophistication in technology would ever be able to replicate the creativity of a human which is vitally inborn Al is unable to impart deeper meaning to their works and elements of human creativity are still to a large extent anthropogenic Humans are driven by intrinsic motivations to express themselves through their work as also connect with others by revealing it to them. Such self-awareness is essentially lacking in robots.

Hence, it becomes difficult to justify grant of moral rights to machines which aim to protect the author's personality as a primary objective. It is this personality is indeed protected when any modification or distortion of work is considered to be a violation of moral rights. Such interests in a work are missing in a machine so grant of moral rights to Al itself would require an additional justification in law.

XII. MORAL RIGHTS TO HUMANS BEHIND AI

An alternative approach to grant moral rights to Al-generated works could be to grant such rights to those humans who interact with Al then be it the creator or user of Al. In the case of an AI program, theprogrammer is accorded copyright in such program, it being copyrightable. For a better understanding of the discourse that would follow, such a program is referred to as 'first-generation work' as it has a direct connection with its creator.

When this program is used by Al to further create another work without the intervention of its programmer such work may be referred to as second-generation work" for it only has an indirect connection with its initial creator For the grant of moral rights in the 'second generation work' it needs to be assessed if the programmer (of the first generation work) can be said to have an intimate connection with such work in a way that it reflects the personhood of the programmer

Although some connections may be traced in the second-generation work as well yet it cannot be said to carry the personal traits of the programmer to the same extent as does the first-generation work In the second-generation work' the contribution of the programmer is akin to that of parents who aid in the conception of the entity that creates a work instead of themselves creating it. Hence granting the initial programmer with moral rights for 'second generation works' as well would amount to granting such nights to parents for the works of their children. A step further in this line of thought would be a situation wherein Al itself generates another Al that produces creative works. The personality connection with the initial programmer in this completely new category of work generated would be even lesser or in many instances untraceable. Similar would be the approach for users and operators of Al, for their creative contribution would be nil in many instances i.e. they may not be even creatively contributing to programming the 'first generation work" In contrast, if Al is merely used as a tool to enable the creator to attain its creative objective the claim for moral rights in such works would be well founded.

Thus, since the grant of moral rights is inevitably connected with the creative input of the creator as extending a personality trait to its work, it becomes imperative to trace that intimate connection between a work and its creator. A practical solution to determining the ownership of moral rights in Al-generated works, if at all they need to be extended tocreators of Al, would be to shift the burden of proof on such creators to establish that the work in question originates from a process that was undertaken by them and that it reflects their personality trait in one way or the other. Although the task might seem burdensome initially experience might allow stakeholders to prove their contribution with ease and efficacy over time. This would not only protect a rightful claim but would also distill instances for the grant of moral rights, wherein the generation of a work by Almerely manifests a mechanical process

XIII. COPYRIGHT LIABILITY IN AI-GENERATED WORKS

Having discussed in detail who would inhere the rights arising from the grant of copyright, it now seems appropriate to also gauge the liability aspect of copyright law Considering the rate at which Al is autonomously generating works there is every possibility for it to infringe the copyright in any other work In such a situation it becomes pertinent to determine who would be held responsible for such infringement as an Al machine is devoid of a legal personality. It is therefore suggested that copyright liability can be imposed either on the programmer which may also include a company employing many programmers to develop Al or on an end user, depending upon the facts and circumstances of a particular case.

XIV. COPYRIGHT LIABILITY OF PROGRAMMER OR COMPANY OWNING AI

Earlier in the article, for the purposes of determining authorship of Al-generated works the legal fiction of work made for hire was interpreted in a manner to include an 'employer's programmer or company that develops Al at its cost and the term 'employee' to include Al program or machine that creates a work. In the same vein, it is suggested that the employer (1.e. the programmer or company) should be held responsible for the acts of infringement caused by its employee. The principle of respondent superior that holds an employer responsible for all acts of its employee if the same were done within thecourse of its employment, is the justification for applying this principle. The basis for this liability is also the fact thatthe employer controls how and what is to be produced by Al and in case of any undesired result the employer is expected to modify the programme accordingly. Further, needless to mention it is the employer which is benefitting from Al both economically and otherwise in terms of saving of time and effort in performing a particular task. While the employer is the owner of all rights inhering in a work produced by Al. it seems reasonable to also hold him responsible in case of any infringement as well.

XV. COPYRIGHT LIABILITY OF END-USERS

The liability of a programmer or a company investing in AI cannot be endless especially when they lose control over the Al with the benefits from Al spreading in all directions and the relative ease that they have provided to complete a task. Al often has also become a consumer product sold in markets. It has taken the shape of a consumer product that is being used by consumers to fulfill their individual pursuits. In such a case the ownership of AI and consequent liability in case of any infringement will shift from the creator to the controller (i.e.. the consumer) who uses Al to attain his ends. A classic 140 example would be the Al product Orb Composer developed by a company called Hexachords that assists musicians, composers, and orchestrators to create musical themes and music mock-ups on the basis of the information fed into by the end user. It is the first Al for music creation and the output is completely based on the teaching and training offered by the one using it to compose music. Thus, in case the output infringes the copyright in any other work it is the end user who is to be held responsible and not the company which although created it but lost subsequent control over the AI. Such a company can also not secondarily be liable for infringing acts of its consumers if the former is able to establish that a majority of its consumers have been using the product for non-infringing purposes and that Al has substantial lawful uses as well.

The companies in such a case only provide the underlying code which is then use by consumers as per their needs. It is virtually impossible for companies providing such codes to keep a record of how their Al product is being used by consumers nor would the consumers want the companies to spy on the use that they put the Al product to. Therefore, as the companies providing the Al product to consumers are so far removed from the creative, they should not be held responsible for any infringing acts of their consumers.

XVI. CONCLUSION

Having traversed through the ambiguities that arise when copyright is granted to Al-generated works it seems that the present regime is incompetent to deal adequately with all issues concerning Al. As the rate of development in this field is unprecedented the best course of action would be to revamp the law in a manner that would efficiently cater to the needs of Al within a well-defined legal framework.

However, till the time such an initiative is taken by the legislators the alternative lies in looking for solutions within the existing regime. The importance of this statement is borne by the fact that not granting any protection to Al-generated works and releasing them in the public domain immediately upon their creation, runs counterproductive to their further development. Such a repercussion is undesired as the benefits accruing from its development are not restricted to technology but have spread to medicine, art, education, and communication to name a few.

For the purpose of conferring any benefit in the form of rights (both economic as well as moral) as also to determine liability in the event of a copyright infringement, it is important to ascertain ownership of Al-generated works The provision for computer-generated works is also the legal fiction created by work made for hire doctrine within the Indian copyright regime and in other legislations provides a feasible solution to the own concerns of Al generated works. Once ownership is determined it becomespertinent to award such an owner

with benefits to incentivize him to develop more such works. Economic nights that allow an owner of the copyright to exploit its creation for financial gains fulfill this aspect. However, the rationale for the grant of moral rights does not stem from the obligation to encourage such creators but rather to protect their personal interests. Since it is believed that every creator of a work has an intimate connection with its work, any modification or distortion of it would prejudicially affect the creator's reputation. As a machine that works mechanically to produce certain results is devoid of expressing such concerns for its work, it becomes difficult to suppose it is the owner of moral rights. Consequently, it is again a human creator who is able toestablish personality connection with work produced by using Al, who may be awarded moral rights

Lastly, as regards copyright liability the analysis is again narrowed down to ownership of Al. If the ownership of Al vests with the programmer or a company that develops it under the work-made-for-hire doctrine, then it would be such programmer or company that would be held responsible for copyright infringement since the employer is not only in control of the Al but is also deriving benefits from its use. On the other hand, if the ownership vests in a consumer due to the Al product or code has become a consumer product, it is such consumer that shall be held responsible for copyright infringement, for the output produced by Al is completely in control and based upon the inputs provided by the consumer.

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