ARTIFICIAL INTELLIGENCE AND CRIMINAL LIABILITY

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ABSTRACT

The rise of Artificial Intelligence (AI) and its increased involvement in our daily activities has raised several legal questions. As the technology itself is in its initial phases, there have been no strict laws put in place to govern AI's activities. At its current stage, it is improbable to assume that an AI is advanced enough to committ a cyber crime let alone commit an actual criminal act. But, the pace with which the technology has been developing is a matter of concern. Thus, it is only natural to raise questions about the liability for crimes that an AI could commit in the future. The main issue while establishing liability for an AI committed crime is that the AI acts autonomously with limited human control.It is capable of learning new things by itself and therefore making the grounds of establishing liability even more challenging. The main motive of this paper is to explore the extent of criminal liability while dealing with AI related crimes. There are various common statutes within several legal systems around the world while dealing with criminal acts in general. This paper aims to analyse the existing laws in place related to commitment of criminal acts and try to devise a methodical approach that could be taken while dealing with AI related crimes and its criminal liability.

INTRODUCTION

With the recent advancements in technology, Artificial Intelligence, has become an ever-integral part of our daily lives. As per definition, artificial intelligence "refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving."[1]AI is created to mimic human behaviour and intelligence. By mimicking human intelligence, it can create, decode and apply algorithms, use any technological equipment and could work in a dynamic environment with the help of computing.[2]Its main purpose is to perform specific tasks assigned to it with the form of a hit-and-trial method. A specific task, which would take anyhuman years to complete, could be effectively completed by an AI in a matter of seconds.

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[1]Jake Frankfield, *Artificial Intelligence (AI)*, 2020
[2] OECD, *Artificial Intelligence in Society*, 2019.

AI works on the concept of binary coding. It is programmed to answer questions in the form of '0' and '1', which in simpler forms mean false or true. This code is then put on a loop till the AI has successfully performed the assigned task. The bigger goal that researchers in the field of AI aim to achieve is to teach computers to learn stuff on their own by mimicking human intelligence. Thus, the term 'Artificial Intelligence' was coined, as the intelligence of an AI is created artificially by humans.In today's world, the AI has become a concept that we interact with on a daily basis. The most common examples include the voice assistants that are present in our smartphones. Siri, Alexa and Google Assistant are some of the most basic forms of AI that we use every day.Some day-to-day tasks performed by AI include, self-driving vehicles, customer service chatbots, serving in the healthcare industry, etc. With the creation of any new concept, legalities arise. The concepts of AI are previously unexplored. But one thing can be said with assurance, AI is the technology of the future. In the coming years it is just going to be more integrated and closely knitted into our lives. So, it is important that we analyse the legalities pertaining to the same. If, for instance, any mishap or damages are caused due to an error of AI, how should we deal with that situation.Currently, there and no laws formulated specifically to deal with AI related mishaps. Even in countries like the USA, European countries and other Asian countries, including India, there are no laws to deal with the same.Supposedly, an AI was to commit a crime. It is known that at the current stages AI is not that advanced, but it can still happen. Problems arise when we have to analyse the legal liability of an AI. AI has the ability to compute information on its own, this can cause problem when deciding liabilities of AI systems. The fact that there are no laws to regulate the action of an AI, neither in India nor elsewhere in the world, is a matter of grave concern. As no new laws are specifically designed for AI yet, the liability of AI should be decided on the basis of pre-existing laws. The current legislation establishes that compensation needs to be provided in case of any damages caused to any person, or physical property/possession by any unlawful acts.This is when questions arise and criminal liability related to AI comes in. Any machine's technical failure resulting in casualties is a fairly common site. Legally, in such cases, the owner of the machine's or the corporation which sent out a defective product is held liable. But in the case of AI, the same suit cannot be followed as AI is not a product with a single owner. Rather, it is an inanimate entity. So how should one design laws related to it? And the who should be criminally be held liable for the loss caused due to an AI? The paper aims to answer such questions and carry out a thorough analysis of the subject.

MAIN CONTENT

One can derive his or her legal rights and duties from the law. If any entity follows the law and perform its duties, it is to be granted legal rights.[3] Similarly, the legal personhood of AI is to be viewed in this particular framework, whether AI should be made to carry out certain legal duties and thus, be granted rights in order to decide its liabilities.[4]

At the current stage, one way to asses AI's criminal liability is by treating it in a similar way as corporate criminal liability, which is predominantly acceptable by various legal systems. Corporate criminal liability is a construed form of liability wherein a corporation is held accountable for the actions caused by its employee.[5] Contrasting approach could be treating AI as an individual with its own behaviour, actions and thought process. Thus, if we follow this approach, the corporate would not be held liable and AI would be treated as an individual committing a crime.

When any individual commits a crime, he is subjected to punishment on the basis of criminal laws defined as per the state. However, the crime committed by artificial intelligence could not be treated in a conventional method as it is committed with the help of a program or software or robot which was created by a person and did not existed prior to that. Therefore, before determining AI's liability, it is essential to define the elements that constitute to a crime and the AI's legalidentity.

Elements constituting a crime

In order to establish the criminal liability of an AI, one must first know what is a criminal act and what are the elements that amounts to a crime. Firstly, under the Indian Penal Code, 1860, crime has been defined as *the commission of an act prohibited by the law of the land.[6]*Every crime can be defined as an act that violates the law of the land where it is committed. Although, every violation of law does not amount to a crime. There are various stages of a crime, namely: i) Intention, ii) Preparation, iii) Attempt, iv) Accomplishment. On the fulfilment of all four stages, any action amounts to a criminal act. Apart from this,there

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[3]Jessica Peng, *How Human is AI and Should AI Be Granted Rights?,*2018.
[4]*The 10 Most Well-Funded Startups Developing Core Artificial Intelligence Tech,* 2016.
[5]John Chipman Gray, *The Nature and the Sources of Law* (Cambridge University Press 1909) 27-28.
[6]Indian Penal Code, 1860.

are certain elements that must be present in order for a violation of law to amount to a criminal act:

1. Human Being

   The wrongful act must be committed by a human being in order to constitute to a crime. This means that an act committed by any non-living thing or an animal is not considered to be of criminal intent. Although in ancient times, animals were also punished for causing harm to others, these principles are no longer followed in modern criminal law. For example, if a pet dog bites someone and it results in the persons death, the dog will not be punished as per Indian Penal code, rather, the owner of the dog will be held liable for the act. Section 11 of the Indian Penal Code states that, "The word 'person' includes company, association or body of persons whether incorporated or not."[7] The word person also includes artificial and judicial persons. A person is a legal entity that has been created by law, which may or may not include natural person, for example, a corporation created under a statute is given a separate legal identity. It is a legal entity having a distinguished identity and legal rights and obligation under the law.

2. Mens Rea

   The second element is mens rea, which in Latin means "guilty mind". Under criminal law, any person must have a criminal intent or a guilty state of mind in order to commit a particular crime. Motive and Intention are both aspects that constitute of mens rea. Thus, the person must always have the knowledge and intent to cause harm inorder to constitute a crime.

3. Actus Reus

   The Latin term actus reus is used to describe criminal activity. It is defined as any criminal activity that was caused due to voluntary bodily movement or a knowingly done physical act. Any physical activity that results in harm to any person/ property constitutes of actus reus. There are two sub categories of actus reus- i) Commission: if any person commits a physical act that harms anyone such as physical assault or murder, ii) Omission: if any person fails to warn somebody that their act may cause harm to others, such actions amount to omission. For example: letting a minor drive.

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[7]Section 11, Indian Penal Code, 1860.

4. Injury

Lastly, the fourth and final requirement of a crime is injury. Injury can be in any form such as damage to a person or physical destruction of property or damaging the society at large. Section 44 of the Indian Penal Code defines injury as "any harm illegally caused to any person in body, mind, reputation or property by another person."[8]

Legal Status and Identity of Artificial Intelligence

Before discussing the legal status of AI, it is essential to bear in mind that criminal or civil liability on an entity can only be imposed if an unlawful act is committed. Whether or not the actions of AI resulted in negligence, breach of contract or any criminal offence. It is essential to point out the fact that the defendant would, in most cases, be a legal person rather then being an AI framework.

The first criminally liable act that was committed by an AI was due to a robot. The robot was deployed to carry out manufacturing work in Kawasaki industries and the actions of the robot resulted in the death of head engineer Kenji Udhara. Kenji was carrying out repair works on the robot, but he forgot to shut it down after finishing his work. The robot detected Kenji as an obstacle and pushed him towards an adjacent machine resulting in his instant death. Even at the time of that incident, the laws of the state were not able to provide any legal framework to determine the robot's liability.[9]

The Indian legal system does not have any legislations that explicitly deals with the rights attributed to an unborn child. Although some statutes[10] state an unborn child to be a legal person, however, he or she only receives the rights after taking birth. The statutes, however, remain silent on the issue of protection and duties granted to that unborn child. Similarly, AI is a very nascent technology and the Indian legal system does not recognize it yet, so providing it with rights, duties and liabilities is out of the question.

The legal status of any entity is directly related to its autonomy. This autonomous status is granted to humans as well as companies and organisations.But when it comes to AI, then it is

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[8]Section 44, Indian Penal Code, 1860.
[9]Mireille Hildebrandt, *Criminal Liability and "Smart" Environments in R.A. Duff and Stuart P Green* (eds) Philosophical Foundations of Criminal Law (OUP 2011) 506-32.
[10]Matilda Claussén-Karlsson, *Artificial Intelligence and the External Element of the Crime: An Analysis of the Liability Problem,* 2017.

not recognised as an entity anywhere in the world but Saudi Arabia wherein a robot named Sophia is recognized as an AI based humanoid and is considered as a citizen of the country with rights and duties equivalent to those of other residents residing in the country. The issue with granting such status to any AI based entity is whether it can be entrusted to perform the same. A noticeable difference between AI and a living person is that a living person is completely autonomous while carrying out his actions. AI on the other hand is created by humans but is still capable enough of working autonomously. Corporations and companies are conferred with the status of a separate legal entity but are still equally liable for any mishap in the future by its employee or product. Even though humans create AI to perform a specific task, it is very well possible that it malfunctions and commits actions or crimes undesired by the creator. The issue of attributing legal personhood to an entity has been addressed by Kelsen in his theory of personality, which states that, "legal personhood of an entity is, in general, a legal device to organise its rights and liabilities."[11]Hohfeldian states that every right has a corresponding duty associated with it.[12] As AI is still an experimental field and is in its infant stage, it is argued that grating of legal personhood to an AI to ascertain its liability is not necessary in the current stages.

Policy guidelines for creators, corporations and certain ethical and legal standards must be put in place to determine AI's legal identity and its nature as an entity. Therefore, the liability may or may not be shifted from creators to the AI system which is shown to exercise some degree of autonomy.[13]

Criminal Liability of Artificial Intelligence

Lawyer and legal researcher Gabriel Hallevy proposed that AI systems qualify the essential requirement is order to be made criminally liable,

1. Constituting *actus reus*, an act or omission;
2. Moreover, *mens rea*, requiring knowledge or information, and
3. Strict liability offences, where *mens rea* is not required.

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[11]Hallevy G., *The Criminal Liability of Artificial Intelligence entities,* 2010.
[12]Niti Aayog, *National Strategy for Artificial Intelligence*, 85-86 (June 2018).
[13] Ben Hughes, *When AI systems cause harm: the application of civil and criminal liability*, 2016.

Analysing the elements of actus reus in deciding criminal liability

The criminal liability of an AI based software or robot in the situation when a criminal act is carried out, then the general basis for the same is the requirement of law. Therefore, in the absence of actus reus, the criminal liability of any individual can not be proved, and so in the case of AI, *actus reus* can only be established if the crime which committed through such a mechanism can be prescribed to a human being so that the very condition of commission of an act can is satisfied to punish and prove the criminal liability of an individual. [14]

The elements of mens rea in deciding criminal liability

To establish *mens rea*, the prosecutor needs to prove that the act committed by AI was intentional. The highest level of *mens rea* is knowledge and intention of the user under whose administration or supervision the AI committed a particular act. The lowest level of *mens rea* is when criminal negligence is involved. It ought to be on the part of the user in charge of the AI machine, which would come under the domain of the persons strict liability.

Three legal models were proposed by Hallevy to examine offences committed by AI:[15]

1. The perpetration by another liability of AI

    In case an offence is committed by a mentally challenger person, an animal or minor, in that case, the perpetrators of the crime are innocent as they lacked the adequate mental capacity to constitute *mens rea*, this is applied even in the case of strict liability offences. However, there is an exception. If the person, or animal, or entity, acted on someone else's commands, then, the person passing out the instructions would be held criminally liable.

2. The natural Probable Consequence liability of AI

    This model accounts for the cases wherein any Bonafide acts wrongly triggered an AI which led to a criminal act. Hallevy proposed the example of Kenji Udhara as previously stated in the paper. This model was used to establish "natural or probable consequence" liability or "abetment" as defined under Chapter V of the Indian Penal Code, 1860, which deals with the liability of persons considered as abettor in the

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[14]*Ibid*
[15]*Ibid*

commission of any offence. Hallevy discussed the US criminal law where he mentioned that an accomplice could be held criminally liable even in the absence of any conspiracy involved.

In Indian criminal law, section 111 of the IPC under Chapter V deals with the principles of probable consequence. According to section 111, the abettor would be held liable for the acts of the perpetrator up to the same extent as if he carried out the acts himself. It is believed that no conviction is passed for abetment unless the act is committed. However, in some instances, if there was enough proof against the abettor, even in absence of sufficient proof against the perpetrator, the abettor was held liable and the perpetrator was acquitted.

Therefore, the people who developed the AI systems, software may be held liable for the AI's acts if they were aware about the natural or probable consequences of its acts.

3. The direct liability of AI

This model takes into account the attributes of both, *actus reus* and *mens rea* to an AI entity. It is comparatively easy to ascribe an actus reus to an AI system. If by chance the outcome of any action taken by an AI system ends up being a criminal act or its failure to act in a situation where there was a duty to act, at that point the actus reus of that offence has happened. Attributing out a *mens rea* is very hard, thus it is here that the three-level of *mens rea* becomes substantial. Whereas, in case of strict liability offences where intention need not be proven oris not required, it is maybe possible to hold an AI system liable for the criminal act. Strict liability may be understood by an example involving an autonomous self-driving car and over speeding, where over speeding is a strict liability offence. So, as per Hallevy's model, then the law regulating the criminal liability of over-speeding could be possibly applied in the very same fashion as applied to humans on an AI program which was driving the car.

Role of Judiciary in deciding the liability

The Indian legal framework provides no stringent legislation which decides the liability of AI related crime. But if such crimes are committed, it is the judiciary which decides who should be held liable. Till now, there have not been any significant landmark judgement for a crime related to AI, software or robots, which would help in dealing with similar cases, or prevent the commission of crimes pertaining to AI.

At present, the legal system is not very well equipped to deal with cybercrimes, highly advanced technological crimes and AI related crimes committed by robots and malicious software. However, with increasing pace of development and efficient legal framework, the judiciary can deal with such crimes. The judiciary may define criminal and civil liability of artificial intelligence systems which may cause harm to others through unethical practices such as hacking, data theft and phishing.

CONCLUSION AND SUGGESTIONS

Artificial intelligence at its current stages is a very nascent concept. It is perceived to be a very powerful tool for the future which would be an integral part of our society. Various man-powered jobs could supposedly be replaced by AI-powered machines. It would result in preservation of human resources and efficient working. But whenever a new concept is introduced, it is necessary to analyse its legal principles as well.

The paper discussed the criminal liability of AI in great detail. The fact that AI is so powerful at such an initial stage is enough to raise an alarm. The potential of AI should be kept in check by placing relevant laws and curbing the extent of its potential, as to, its actions does not cause any harm to anyone, be it intentional or unintentional. Currently, there exist no such laws which would decide the liability in case a crime is committed by an AI. Thus, if an AI were to commit a crime today, its liability would be decided on the basis of pre-existing laws of the particular state where the crime is committed. These laws however, were not designed while keeping AI in mind. Thus, the punishment inflicted upon AI related crimes should not be decided by them.

The researcher wants to lay emphasis on the fact that how unregulated and ungoverned the field of AI is. Restricting and effective laws to deal with AI's criminal liability must be placed with great urgency. Countries like USA and other European countries have already started looking into this problem. This problem is not restricted to one country, but rather, is a global problem that the world is going to face in the upcoming years. Henceforth, the countries and states shall start formulating laws to curb AI's powers, deciding its criminal and civil liability with immediate effect, so that any average person who has suffered damages or loss is compensated at the earliest.

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