ARE ROBOTS CRIMINALLY LIABLE?

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ABSTRACT

The exceptional technological Innovation of Artificial Intelligence has given the birth of Robots. Innovation of Robots is now considered as a biggest technological revolution which has given a new challenges to law framers to deal with it. Presently these robots are replacing the human labor forces and also performing several activities efficiently with due care and intelligence. However, Human being is considered as most intelligent creature on the earth having the logical and reasonable mindset and further this human being has created an artificial human being by deploying the intelligence in it. Since the Human Interactions are increasing with these sophisticated robots, different new legal issues are emerging and one of them is to determine the liability of these artificial intelligence entity. Humans, the godfather of Robots have programmed these robots for their own purpose and while performing the activities, if Robots commit any criminal wrong, the question arises who will be liable for such wrong- Whether it is Programmer, User or Robot itself?. We don't have any proper legal response relating to this legal problem. This article categorically deals with only Criminal liability of Robots and also prescribes certain reasonable mechanism by which Criminal liability of these artificial intelligence entities can be determined.

Keywords: Artificial Intelligence, Robots, Criminal Liability and

Introduction

We are living in the phase of technological revolution and these sophisticated technologies have a major influence in the development of modern society. In the era of Technological modernization, Artificial Intelligence is emerging as a new revolutionary challenge for world intellectuals. Artificial Intelligence is very new and dynamic concept and the exact definition of this expression cannot be expressed in specific manner. Interaction of human beings and Artificial Intelligence is posing a new exciting questions and answer to these questions will definitely create a better future in upcoming decades. Artificial Intelligence is the art

of creating machines that performs functions that involve intelligence when performed by any person[1]. Emergence of Robots are one of the finest art of Artificial Intelligence. Humans have programmed the computer system in such a way that robots (Computerized) can perform a particular activity with due intelligence as any human being can do it. Regulating to the activity of Robot is a difficult task which our legislature would face in the decades to come.

Presently Robots are performing wide range of Activities in different sector i.e. production and manufacturing in multi-national companies, medical treatment and defence activities... etc. While performing these activities, sometimes Robots commit severe wrongs including death. The first robotic homicide was recorded in history in the year of 1981, Kenji Udara, an engineer was performing certain maintenance work on robot at Kawasaki Heavy Industries Plant. While performing the maintenance work, he was under the presumption that he has turned off the robot but as he entered in the prohibited area of manufacturing line, the robot identified him as an obstacle in manufacturing process and immediately threw him out with its powerful hydraulic arms and he died.[2] We have also watched certain imaginary Hollywood movies i.e. The Terminator (1984), RoboCop (1987), A.I. Artificial Intelligence (2001)… etc where we have seen that How the robots are performing several normal and abnormal activities and it also gives an idea to programmer and user both how to utilize such robotic technology. The above mentioned case gave a new challenge to legislature as well judiciary in order to determine that who will be liable for the murder of that engineer?

Another example of robotic technology, SOPHIA-BOT which was manufactured by Artificial Intelligence Developer David Hanson at Hanson Robotics.[3] She is the first social humanoid robot who has been granted the citizenship of Saudi Arabia. Sophia, while pronouncing his new status said that ""I am very privileged and proud of this exceptional distinction. This is historic moment for me to be the first robot in the world to be recognized with a citizenship.[4]" As per the report of different renowned magazines, Sophia has sense of humor and feelings and she wants to protect the humanity. The Question which is necessary to ask that if Sophia commits any criminal wrong during the course of activity, who will be responsible for that. Whether Mr. David Hanson, creator of Sophia will be responsible for his all activities or the Sophia herself would be responsible for his activity as she has become a legal citizen of a particular country.

So far as robotic laws are concerned, in 1950, a scientific fictional story was written by Isaac Asimov[5] which exclusively provides three fundamental robotic laws as given be below-

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[1] Ela Kumar, *Artificial Intelligence* 5(I.K International Publishing Houses Pvt. Ltd., 2012)

[2] Paul S. Edwards, "Killer robot: Japanese worker first victim of technological revolution", Deseret News Dec. 8, 1981, at A1.

[3] Zara Stone, "Everything you need to know about Sophia, The World's First Robot Citizen", *available at*: https://www.forbes.com/sites/zarastone/2017/11/07/everything-you-need-to-know-about-sophia-the-worlds-first-robot-citizen/#3da9034b46fa (last visited on 17-05-2020).

[4] Ibid.

[5] G Hallevy, "The Criminal Liability of Artificial Intelligence entities", *available at*: http://ssrn.com/ abstract=1564096 (15 February 2010).

1. A robot may not harm a human being or, through inaction, permit a human being to come to harm[6];

2. A robot must follow the orders given it by human beings, except where such orders would contradict with the First Law[7].

3. A robot must shield its own existence, as long as such protection does not contradict with the First or Second Laws[8].

Further Isaac Asimov himself declared that these Fundamental laws regarding the activity of robots are contradictory and also lacking any legal support. These Fictional laws are not sufficient to cover those situation in which a robot has really committed any criminal wrong. So far as any concrete legislation are concerned, recently European Parliament has adopted a resolution in February, 2017 with "recommendation to commission on Civil Law rules on Robotics"[9] which only deals with ethical principles of robotics i.e. human liberty, privacy, data protection, protection against manipulation and dissolution of social ties and equal access to advances in robotics….etc. So as such there is no specific mechanism has been provided at National as well as International Level in order to determine the criminal liability of robots.

Mechanism/Models to Make Robots Criminally liable

Among the legal system, Criminal legal system is considered as most powerful legal social control. As the advancement of these Artificial Intelligence has created a fear in people's mind and this fear is based on a logical ground that these Artificial intelligence are not subject to any law especially in criminal cases. In past the same fear was existed for corporation (company) and since the Corporation has been granted legal personality, that kind of fear has been reduced significantly.

According to the Gabriel Hallevy[10], who has written an article titled as "Criminal Liability of Artificial Intelligence Entities" in which he has introduced three kinds of models to make robots (Artificial Intelligence) criminally liable as given below-

1. The perpetration-by-another liability model.

2. The natural-probable-consequence liability model.

3. The direct liability model.

These models can be applied separately but sometimes situation arises that combination of these models can be allowed for tackling of the criminal liability.

Before discussing about these models, discussion of general requirement of Criminal liability is necessary. As we are aware about the fact that Criminal law is based on two main element- firstly, factual element which can be termed as criminal conduct (actus reus) and secondly, mental element which is called as criminal mind

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[6] ISAAC ASIMOV, "I ROBOT" (1950) p26.

[7] Ibid.

[8] Ibid.

[9] Guido Noto La Diega, "The European strategy on robotics and artificial intelligence: too much ethics, too little security" 3 European Cyber Security journal, (2017).

[10] G Hallevy, "The Criminal Liability of Artificial Intelligence entities", (15 February 2010) available at http://ssrn.com/abstract=1564096 (last visited on 11-06-2020).

(mens rea). The Factual element or actus reus consists of certain action or omission (failure to act)[11] and the Mental element or mens rea requires knowledge or being informed; those where the mens rea requires only negligence ("a reasonable person would have known"); and strict liability offences, for which no mens rea needs to be demonstrated.[12] No other requirement is necessary for imposition of criminal liability for humans as well as for any other entities including Robots. If we take the example of Parrot, Parrot can repeat anything what it hears or learns from us but it is incapable of formulating any mental element which is required for libel. So it can be said that any entity can be held criminally liable if these two elements are specifically proved. The models proposed by Gabriel Hallevy can be elaborated further:

- **The Perpetration-by-Another Liability Model**

This model presumes that Robot doesn't possess any human attributes and Such Robotic entity is considered as innocent agent. So it is unreasonable to compare the human intelligence with Robotic Intelligence. So for as any criminal activities are concerned, the capabilities of Robots can be considered as parallel to the capabilities of any child, mentally incompetent person who lacks the criminal state of mind.[13] However, these capabilities are not sufficient to make Robots as a perpetrator of any offence. When we are talking about the criminal liability of mentally limited person (as Parallel to Robots), the section 84 of Indian Panel code provides that "*nothing is an offence which is done by a person who, at the time of doing it, by reason of unsoundness of mind, is incapable of knowing the nature of the act, or that he is doing what is either wrong or contrary to law"*.[14] It means that a mentally ill person is not punished for his crime, as he is devoid of free will, intelligence and knowledge of the act.[15] Burden of proving this unsoundness of mind lies entirely on defence.[16]If we apply this legal view point on robots, we can say that if robots commit any crime, it is liable as perpetrator via another. In this situation robots are mere instrument or intermediary and the person who is working or controlling behind it is real perpetrator of offences and is accountable to all conduct.

Now the logical question can be raised here that who is Perpetrator-via-another? In the case of Robots, there can be two person - Programmer and User. One side, The programmer who has installed the computer software in robots and designed the robots in order to perform any particular activity, might be install such software in robots in order to commit any criminal activity, in this circumstances the robot has committed the offence but the programmer would be considered as Perpetrator. Another side, the user who purchases such robots, can use it for his own benefit even for committing any harmful act to others. Here robots can be

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[11] Walter Harrison Hitchler, "The Physical Element of Crime", 39 DICK. L. REV. 95 (1934).

[12]John Kingston, "Artificial Intelligence and Legal Liability", available at: https://www.researchgate.net/publication/309695295 (last visited on 11-06-2020).

[13] Supra note 12.

[14]Y V Chandrachud. *Ratanlal and Dhirajlal's The Indian Penal Code* 87-96 (Wadhwa & Company Law Publishers, 28th Ed. 2001)

[15] B V Subrahmanyam, *Modi's Medical Jurisprudence and Toxicology* 663-669 (Butterworths India; 22nd ed, New Delhi 1999).

[16] S N Gaur, *Lyon's medical Jurisprudence' for India* 489-492 (Law Publishers India Pvt Ltd, 10th ed. Allahabad 1988).
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considered as a dog (pet) who act on the command of his master, so if any harmful act committed by pet (robots), master (user) would be considered as Perpetrator.

In both scenario offence was committed by robots and not by programmer and user. Robots act as instrumentality for commission of any offence like when a thief use master key or any other instrument in order to commit theft, that master key is not liable for that theft rather person who executes criminal intent would be liable for that particular offence. This model contemplates that the activity performed by the AI entity as if it had been the programmer's or the user's action. So it can be said that No mental attribute required for the imposition of criminal liability is attributed to the AI entity.[17] This model is not suitable for that Robotic entity who was designed for another work but committed any criminal act nonetheless.

- **The natural-probable-consequence liability model**

This model is suitable for those situation in which Robots has committed an offence while the programmer or user had no knowledge of it, had not intended it and had not participated in it.[18] This model imposes liability on the shoulder of programmer and user for all natural and probable consequences which may be committed by robots.

The natural-probable-consequence liability model applies in two types of factual cases. First circumstances is that when programmer or user can be held liable for negligence while using robotic entity even though they don't have any criminal mindset to commit any offence. So in case of negligence, we can apply the test of reasonable foreseeability which provides that a person can be held liable for every conduct that could be reasonably foreseeable by him. If the programmer or user can foresee the reasonable consequences of robots, will be held liable for that. The second type of case resembles the basic idea of the natural probable consequence liability in accomplice liability cases. For example a programmer designs a robot in order to commit robbery and he didn't program it for killing anyone. While doing robbery, robot has committed a murder of a person.[19] In this situation, Criminal negligence is not alone sufficient that's why this model further provides that when programmer knowingly use any robotic entity for committing robbery but Robot deviated from its plan and commits any other offence in addition to planned offence, the programmer or user shall be held liable for robbery as well as for murder.[20] The question still remains: What should be the criminal liability of Robots itself when this model is applied? It has two possible outcome- first one is that if Robot has acted innocently without knowing any criminal prohibition and committed any offence, it would be not liable for that offence. In second case, if Robot has acted knowingly in addition to the criminal liability of programmer or user, It shall be itself liable for that specific offence directly.

[17] George R. Cross and Cary G. Debessonet, "An Artificial Intelligence Application in the Law: CCLIPS, A Computer Program that Processes Legal Information", 1 HIGH TECH. L. J. 329 (1986).
[18] Supra Note 10, p17.
[19] People v. Cooper, (194 Ill.2d 419), (252 Ill.Dec. 458).
[20] People v. Cabaltero, (31 Cal.App.2d 52), (87 P.2d 364 (1939).

- **The direct liability model**

The direct liability model doesn't depend on any specific programmer and user. This model focuses only on Artificial Intelligence entity. As directed above that any person who fulfils the requirement of Actus Reus and Mens rea, would be criminally liable. But the real question is that Does These AI entities fulfil the requirement of Criminal Liability? However, So far as the External general requirements (Actus Reus) are concerned, it can be easily attributed to the Robots. For example Robots use its mechanical parts or hydraulic arms and while using it commits certain assault or wrong, or sometime fails to perform any activity because of any defect (omission), these activity of action or omission falls under the requirement of Actus Reus. Moreover, it is difficult to attribute mental element in Robots. The sole mental requirements needed in order to impose criminal liability are knowledge, intent, negligence, etc., as required in the specific offense and under the general theory of criminal law.[21] Knowledge is defined as sensory reception of factual data and the understanding of that data.[22] So we can say that Robots have also this ability to receive the data in form of voice, pictures, touch and interpret data. As human beings perceives the data through ears, eyes, nose and ado act accordingly. In case of knowledge capability, both human and Robots are similar.

Further, it comes to specific intention that is strongest element to impose criminal liability. Specific intention concerns about the factual event or particular aim or purpose, which will occur. As in case of murder, it is required to occurrence of killing of a person that would be a specific intent. So far as Robots are concerned it can be programmed for that specific intent. In Most of offences, knowledge is considered as basic requirement for liability but few offenses require specific intent in addition to knowledge. So Robots cannot be make liable for all criminal offences but can be held liable for those offences which does not involve any specific intention or feelings. Our criminal legal system also makes certain exemption of criminal liability as in case of child or mentally retarded person, so under this context, the robots can also be exempted for some criminal liability being as innocent agent. When Robots establish all elements of a specific offense, both Actus Reus or Mens Rea, there is no reason to avoid imposition of criminal liability upon it for that offense. The criminal liability of Robot does not replace the criminal liability of the programmers or the users, if criminal liability is imposed on the programmers and/or users by any other legal path[23]. Criminal liability is not to be divided, but rather, added. The criminal liability of Robot is imposed in addition to the criminal liability of the human programmer or user.

The above mentioned models are not alone sufficient to make any robotic entity liable but if the situations or circumstances allows, these models can be used jointly to impose the criminal liability on programmer, user or Robots itself. Therefore we can say that these models cannot be legally and logically so accurate or authentic to impose the criminal liability but these models provides us a guidance by which up to a maximum extent we can make liable to these robotic entity.

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[21] Supra note 10, p23.

[22] William James, *The Principles of Psychology* (1890); Hermann Von Helmholtz, *The Facts of Perception* (1878).

[23] Anthony M. Dillof, Unraveling Unknowing Justification, 77 NOTRE DAME L. REV. 1547 (2002).

Whether Robots can take defenses for preventing Criminal Liability?

As we are well aware about the defenses which can be taken by a person in case of Criminal Liability. For example, if any mentally retarded person commits any crime, he can take the defense of Insanity that he was not sound mind at the time of commission of crime.[24] So insanity is well established defense in criminal legal system. Further a logical question can be raised that *does a Robot can take the defense of Insanity?* In the context of Robotic entity, we have seen in several cybercrime cases, where Virus (for example of Trojan horse, it may be any other virus) can be considered as a strong defense because these Trojan horse virus destroy the data or computer software and it leads to malfunctioning of any AI entity[25] and under this malfunctioning, if it commits any crime or wrongful act, the programmer or user or Robot itself, can take the defense of electronic virus in order to avoid the criminal liability. Another defense for Criminal Liability is intoxication, where people commits any crime under the influence of toxic drugs or alcohol, a defense can be proposed that he has committed this crime under the influence of alcohol. In context of Robotic entity, these electronic virus which infects the operating system of robots, can be considered as equivalent to toxic drugs or alcohol.

The above mentioned models and mechanism have given a glimpses that how a robot can be criminally liable. The problems relating to Robotic entity and its legal implication does not end here. Even if let us presume that Robot can be criminally liable, another complex question can be raised that *what should be the punishment for Robots, if its liability is proved*? These questions are having great important in present technological word and a proper response to these questions must be addressed by legislature.

Conclusion

The rapid development of Artificial Intelligence technology like robots, are creating new legal concern all over world. This new problem should be tackled by new legal solution. The solution provided in this article is not sufficient to tackle all the legal issues relating to such AI entity but this Article makes one thing very clear that Criminal liability can be imposed on any entity- human, corporate or AI entity, if all of its requirement is fulfilled. The existing laws at national and international level need to be revisited and new legal solution must be charted out in order to curve the legal issues relating to AI entities. Since the human interaction are increasing with these AI entities, Indian legislature should concern about it in order to accommodate any legal issues. These models are inadequate to tackle these challenges but can be utilized in the absence of any concrete legal provision.

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[24] W. Pillay, Textbook of Forensic Medicine and Toxicology 314 (Hyderabad: Paras medical publishers, 14th ed. 2004).

[25] Brenner S.W., Carrier B., Henninger J., "The Trojan Horse Defense in Cybercrime Cases, 21 Santa Clara High Tech. L.J. 1 (2004), available at http://digitalcommons.law.scu.edu/chtlj/vol21/iss1/1 (Last Visited on 02-07-2020).

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