THE LIABILITY DILEMMA IN ARTIFICIAL INTELLIGENCE

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ABSTRACT

Artificial Intelligence as a subject has taken a huge predominance in the lives of people in generality. It is one of the sectors wherein, the most work and educated manpower is being applied. As in return, it yields mammoth-like returns on the investment deployed. As a result of the same artificial intelligence is replete and ubiquitous. And the same has trickled down in the legal domain as well. The uses of AI, has been used in analyzing and finding case laws. A number of judges have also started using the same to give out judgements. But this article is not about the same. As Artificial Intelligence has become omni-present, the legal standing of the same also comes into question. If an AI software was to commit an unlawful action, the big question and dilemma of liability in cases which involve artificial intelligence as a component looms highly in the legal diaspora. With the increasing presence of Artificial Intelligence, it rather becomes a burning question to answer. And this research paper tries to answer the same by surveying scholarly articles, and cases which involved a component of Artificial Intelligence. As there is a paucity of laws and regulations in terms of Artificial Intelligence, this article tries to establish the legal nexus for the creation of the same.

Keywords: Artificial Intelligence, software, liability, nexus, uses.

History, Introduction and The Status Quo of Artificial Intelligence

John McCarthy is widely regarded as the father of Artificial Intelligence, who also consequently termed the concept. Oxford's Definition of Artificial Intelligence goes as "the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages." In this paper to ease out the sense of Artificial Intelligence, AI will be defined as a software, which can assess its surroundings and its stimuli to take actions which are prudent in accordance to the same. In terms of India and its workings towards the realization of Artificial Intelligence as a topic of esteemed importance in the status quo, the AI Task Force initiated by the ministry of Commerce and Industry was led by N. Chandrashekharan. The same evaluated the need of Artificial Intelligence in the legal, political and economic processes of India. Data Protection is a very much pertinent topic in relation to Artificial Intelligence, as data can be breached by Artificial Intelligence softwares as it aggregates information of users through algorithms. There are no specific laws in relation to data protection although it is safeguarded under Section 43A and Section 72A of the Information Technology Act. It basically gives a safeguard and a compensation to the person whose data is compromised. Russian nationals like A. Atabekov, have analyzed the working of Robotics and law, further how they interact with each other- what he suggested was a mechanism which can assess the working and the limits of the conduct that the robots can possibly carry out.

We will be mostly dealing with common law, and how problems arise in different ways with AI liability in multi-faceted ways, like civil liability as well as criminal liability.

We are well aware, that there exists a paucity of laws and regulations in reference to artificial intelligence and how the same, is creating a need of the same. As in the world, at large Artificial Intelligence is a growing an area of study and innovation. It exists, right from our laptops to the shopping marts we visit. This paper is not going to be about the benefits of Artificial Intelligence in the legal system, it is instead going to be about the question of liability when Artificial Intelligence is involved in an offence. This paper will try and provide a legal nexus required for creating laws and regulations to safeguard the rights of people when artificial intelligence is involved in an offence.

The Liability Question of Artificial Intelligence

A recent issue of a popular journal, asked and floated a question relevant to law and artificial

intelligence. That when a self-driven car, kills a pedestrian- whose liability will it be.

Questions of this kind are being tackled by legal philosophers and researchers all around the world. A lot of research is being conducted in the United States of America on the same, very actively and efficiently.

This research will take help of, whatever studies which are pre-existing, as most of them are from the States, it will consequentially refer to the same.

We will have a multi-pronged approach towards, solving or at the very least attempting to solve the liability question of artificial intelligence. We will be grappling with a) Criminal Liability b) Civil Liability c) The Knowledge Problem and at the very end d) the defenses that can be taken by the Artificial Intelligence Systems.

Criminal Liability

The authority that we will be talking about is, Gabriel Hallevy[1], who has asked the question about how and whether artificial intelligence can be held criminally liable. Criminally liability typically demands a mental element (Mens Rea) and a wrongful act (Actus Reus) to be actionable.

In terms of AI, he proposes a three-tier model and three different situations to grapple with the same.

   a) Perpetrator-via-another: If an offence is committed by a mentally deficient person, or a child, or an animal, then usually- the perpetrator of the offence is held criminally liable at most times. As the innocent agent, typically lacks the ability to form a guilty mind and intention (mens rea). So the, perpetrator who instructed the agent is usually held to be criminally liable.
   If we are to implement the same concept in lieu of artificial intelligence programs, the AI software can be held to be an innocent entity- with either the software programmer or the user being held liable through the above concept.
   b) Natural-Probable-Consequence: If an AI software is created for good purposes, and ends up doing a wrongful act in pursuance of the same. Hallevy provides an

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[1] Hallevy G.: The Criminal Liability of Artificial Intelligence entities. http://ssrn.com/ abstract=1564096 (15 February 2010).

example about the same. In which a Japanese employee is working in a motorcycle manufacturing factory. Who was eventually killed by an artificially intelligent robot. The robot, in a steadfast manner recognized the factory worker as a threat to the mission that it had undertaken. And according to it, the most probable and workable action to pacify the threat was to push him into another operating machine, it did the same with its hydraulic arm and ended up killing him gruesomely. The normal use of the doctrine, is practice in the sphere of legalities, to basically prosecute accomplices to a crime. And if no possible accomplices can be found it deduces the natural probable consequence of a criminal conspiracy hatched by a possible accomplice.

So, in order to relate it with, AIs- users or programmers who knew that it is a probable consequence that a criminal offence can happen in the tenure of the actions of the program. They can be held liable for the same, criminally. The distinction between, if a) the AI application 'knows' that a criminal scheme is underway (they have been programmed to do a criminal activity) and those who do not. The latter type of applications will not be liable in crimes which necessitate the existence of mens rea (knowledge of a guilty mind) but can be criminally liable, under those of a reasonable person.

c) Direct Liability: It is in a larger picture, easy to attribute an 'actus reus' to AI- rather than a 'mens rea'. So there are offences which do not need the element of 'mens rea' in order to constitute an offence. 'Actus Reus' alone is sufficient to prove a wrongdoing.

We focus on cases[2], wherein a pharmaceutical agency[3], was not able to administer the right medical professionals to the desired patients they were to be attributed to. Mykytyn et al[4] discusses the above cases, and says that AI developers can also be held liable of not selecting experts with sufficient competence in their domain, where the system might possibly be used. The solution provided by him was, that there should be licenses and certifications which are made compulsory for these experts. Similarly, there should be licenses and certifications which should be made compulsory for AI softwares and systems to comply to. For an example, The United States Stock Exchange Commission has been particularly keen on the same. It required

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[2] Joiner v Mitchell County Hospital Authority, 186 S.E 2d 307 G.a.Ct.App. (1971).
[3] Glavin v Rhode Island Hospital
[4] Mykytyn K., Mykytyn P.P., Lunce S.: Expert identification and selection: Legal liability concerns and directions. AI & Society, 7, 3, pp. 225-237 (1993)

a stock market recommender system to take a financial advisor certification to be able to operate[5]. As it would satisfy certain marks to prove its competence in the financial market- and how it would not practice any negligence or an offence.

The Knowledge Problem

One of the key problems, that the AI suffers from is the 'knowledge' problem. AI and humans are constantly evolving, and evolution only takes place through acquiring knowledge. Programmers are human and can only make a software and place its functions in accordance to the growing needs and new circumstances surfacing. The defects that an AI system suffers is due to the lack of commands or a misinterpretation of commands that are present in the program. So, regular updates in a software or a system is a necessity which cannot be evaded. And if the software vendor, fails to do so- the question of liability will loom again. For an example., if we again refer to the situation that we referred to at the beginning of the paper- which substantiated a self-driving car hitting a pedestrian and killing him. It can be a possibility, that the car might be designed for metropolitan roads, but was being used for treading off-roads. As it did not possess the 'knowledge' of being driven in off-roads with no proper traffic signals- it did not fare well for the car or the pedestrian. We speculate, that it indeed can be a matter of negligence if, the software is not regularly updated through the use of new 'knowledge'.

The Trojan Defense

It is a common occurrence, that users take defense- of malware or spyware entering into their computer applications in order to commit several offences that they don't have any knowledge of. We can refer to the case compendium[6], wherein one of the cases involved a United Kingdom laptop having indecent photographs of children in a compromising situation. The defense in the case was, that his computer was invaded by about 11 Trojan viruses, which procured these pictures. Another such case was present, wherein- a teenager who hacked several computers and breached data walls of many users took the defense, that his computer was approached by a malware and forced his computer application to hack into other users' databases and removed

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[5] Warner E.: Expert Systems and the Law. In Boynton and Zmud (eds) Management Information Systems, Scott Foresman/Little Brown Higher Education, Glenview Il, pp. 144-149

[6] Brenner S.W., Carrier B., Henninger J.: The Trojan Horse Defense in Cybercrime Cases, 21 Santa Clara High Tech. L.J. 1 http://digitalcommons.law.scu.edu/chtlj/vol21/iss1/1 (2004).

itself just when it was about to get forensically analyzed. So as to, pose the user as the culprit. And this whole defense was successfully proven by the defendant's counsel.

Liability in Tort Law/ Civil Law

Negligence:

Negligence can be attributed, to AI in several ways- first we would have to discuss the elements of negligence according to civil law as enshrined by Gerstner[7].

    a)　The Defendant had a Duty of Care
    b)　The Defendant had breached the Duty
    c)　That breach eventually caused an injury to the plaintiff

For point a), we are most certainly sure- that the software vendor owes a duty of care to the customer. But the real question, still remains what kind of duty of care does the vendor owe. But one thing is for sure, that if it is an 'expert system' the vendor owes an appropriate standard of care.

    b) There are a number ways in which the AI system could have breached the duty of care; one of them might be that, the developers might have spotted an error or malfunction in the code and they let it slide.

    d)　For the third requirement, it is imperative to know that whether the AI can cause an injury or not, is open to debate. There are two alternatives, one- being that the AI recommends a certain action to be taken, wherein at the very least one more agent will be involved. And on the other hand, the second kind of AI- wherein the system 'takes' an action like safety self-driven cars.

Another concern, that the legal community grapples with- is whether AI is a commodity or a service. If it is a good- it should come with a legal warranty which it typically doesn't.

In totality, we figure- that legal liability in artificial intelligence can be figured out, through a number of tenets. Which are:

    -　The limitations of the AI system; and whether or not the user is aware about the same.

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[7] Gerstner M.E.: Comment, Liability Issues with Artificial Intelligence Software, 33 Santa Clara L. Rev. 239. http://digitalcommons.law.scu.edu/lawreview/vol33/iss1/7 (1993).

- Whether an AI is a product or a service.
- Whether the offence requires mens rea or is a strict liability offence.

Conclusion

To conclude liability of AIs, we will be consolidating, whatever we have gathered till now in a phased manner. And attempt to solve the question, that is floating in the legal diaspora which we introduced in the beginning about, if a self-driving car hits a man, out of a necessary measure- that it was programmed to undertake to avert risk and ensure the safety of the passenger sitting. And many more such AI driven machine liability problems. Firstly, we will analyse the factors through which we can determine the liability of AI systems:

- Whether AI is being sold as a product or a service; as this is ill defined in law; different jurists and legal philosophers offer different perspectives in regards of the same.
- What kind of a mens rea, is required while committing an offence. As it highly unlikely, that an AI system will commit an offence which will require the knowledge that the crime is being committed by them. But it is very much possible that they might commit an act or an omission that 'a reasonable man' can commit which can be punishable by the code of law. Lastly, they can most definitely commit a crime which is a strict liability offence- which does not need the mens rea, to obviate a crime.
- Whether or not the limitations of the AI systems are communicated to the purchaser/ user. As these systems come with both general and specific limitations. Cases can be based on specific wordings of these limitations and clauses.

Secondly, we will look into as to who will be liable for an act, this will be analyzed by implementing- Hallvey's three tier proposition and observing which one would be applicable in a said case:

- In a perpetrator-by- another case, whoever has instructed the AI system to make the act or omission will be held liable. This can be either the user or the programmer of the AI system.
- In a natural-probable-offence, the liability would lie on anyone who knew about the probable consequences/ defects/ uses of the AI system. This can usually be the programmer, the vendor or the service provider. The user cannot be made liable, unless or until the limitations of the AI system were very explicitly listed in the sale of

agreement or the terms and conditions of the product/ service that they were selling. And the user, despite knowing its limitations and its uses- exploited the same.

- AI systems can also be held liable for strict liability offences- in the case of which the programmer will be held accountable.

However, in all the cases that the programmer can be held liable, there would further debate and a measure of the balance of probabilities in each case. It would be decided, whether the program designer, the programmer himself, the knowledge source or the manager who employed the program writer would be held liable[8].

In the above paper we have attempted to established a legal nexus through a thorough study of cases, theories and scholarly research papers of eminent judicial minds. Lastly, we reinstate that there is a dire need of safeguards and implementation of the solutions provided in this paper as in fast-paced growing economies the role of artificial intelligence is replete- and along with the same an urgent demand of safety.

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[8] John Kingston, Artificial Intelligence and Legal Liability, ResearchGate, November 2016
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