Determination of Tort Liability in the Deployment of Artificial Intelligence Technology

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Abstract
Technology inventions have been able to impact positively on our society in a number of ways. Irrespective of the positive impacts recorded there are attendant challenges often created by these technologies inclusive of questioning established traditional laws. National legislatures have tried to live up to their responsibilities of amending existing laws or enacting new ones where necessary to address such challenges. Artificial intelligence (AI) brings about special challenges to the extant law on liability, contractual and non-contractual, due the special feature of ability to learn from data from its environment and act autonomously even outside the pre-existing algorithms created by its maker. The opacity, autonomy and self-learning abilities complicate the challenges created by AI particularly to the law. This paper takes a critical look at the regimes of regulation of Artificial Intelligence under the European Union and the United States of America, which are the frontline occupiers in responding to technology developments through laws, regulations and policies. This is in a bid to establishing reasonable bases of apportioning blames in torts committed by AI driven devices. The paper suggests, as a general rule, strict liability for torts committed by AI devices to compensate the wronged parties as such devices cannot assume legal personhood to be liable under the traditional tort law.
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1. Introduction

One of the aspects of law that help to regulate interrelationship of man in society is the law of tort. This genre of law helps to protect certain interests and rights of persons as they conduct their affairs in space and time. Tortious liability results from the violation of a legal obligation that is owed to all people and which can be remedied through an action for unliquidated damages. Tort allows the victim of tort actions to claim damages and also to get restrictive order from court to forestall further wrong to his person or property. A tort occurs when a legally imposed duty is violated. In some recognized tort that can be committed under the law there is a requirement that the defendant must be at fault- this means that in order for a defendant to be held accountable, they must have either acted improperly on purpose or have had a reasonable opportunity to take action to stop the injury they caused but did not. The requirement of fault encourages people to take precautions to avoid culpability, as opposed to strict liability, which would be outside of their control and provide little incentive to take care, it is claimed that the requirement of fault encourages prudent behavior. On the other hand, in strict liability torts there is no need for the plaintiff to prove that the defendant is at fault. The requirement that a claimant establish fault typically reduces the number of tort proceedings filed, which helps keep the courts from becoming overworked and possible defendants from being subject to extremely broad and unpredictably liable obligations.(Catherine Elliott and Frances Quinn , 2017) Where fault is required as a condition for tort action been taken against a tortfeasor in court there may be a need to prove either an intention on the part of the tortfeasor or his agent in certain circumstances, or that the wrong was as a result of his negligence or that of his agent. It is obvious from the foregoing that the state of mind of the tortfeasor serves as a consideration in determining his liability which indicates his ability to predetermine the consequences of his action or inaction. In other words, establishing the guilty mind of the tortfeasor serves as consideration in an action for tort where fault on the part of the tortfeasor is a consideration for finding him culpable.

The law has dealt with IT-based systems for a while, but up until now, they have typically been on a rather

modest level of sophistication. They have therefore not necessitated any special modification or adaption of conventional legal reasoning. Introduction of new technologies have impacted the law of tort and inadvertently create a novel challenge to the existing state of traditional law of tort. This is particularly conspicuous in the usage of automated machines to perform certain tasks that are traditional of man. Technology has developed exponentially since the inventions of computer and the internet. The legal ramifications of computer technology are pervasive, and as internet technology advances, more complex legal issues will arise, including those relating to cybersecurity, cybertorts, cybercrime, invasions of privacy, electronic commerce, taxation pitfalls, jurisdictional issues, and so forth (Araromi, M. A 2020). Different technology software and algorithms are developed alongside the computer to perform certain or defined functions. Many human activities are now being carried out through the aid of computer which makes it faster and elegantly presented, and also embraces the principle of economy of scale. With the nascent development of artificial intelligence and machine learning technologies many of the functions are automated and in most cases requiring no human intervention. For the benefit of understanding the meaning of Artificial Intelligence, it is germane to mention that there is no generally acceptable definition of this concept but different writers and experts have tried to describe the concept in mild terms. According to the Organisation for Economic Co-operation and Development (OECD) has defined AI and according to them, "AI is defined as the ability of machines and systems to acquire and apply knowledge and to carry out intelligent behaviour. This means performing a broad variety of cognitive tasks, e.g. sensing, processing oral language, reasoning, learning, making decisions and demonstrating an ability to move and manipulate objects accordingly. Intelligent systems use a combination of big data analytics, cloud computing, machine-to-machine communication and the [IoT] to operate d learn" (OECD, 2020). No doubt this digital transformation is developed to optimize decision making and operational performance, however, the legal consideration of this development presents unique challenges to traditional laws which are designed to regulate interrelationships between men in society. Robots acquire knowledge and skills that may enable them to operate in ways that are completely unanticipated to a human operator as they learn to solve issues with answers that are completely unknown to a human operator while also increasing their independence in decision-making and mobility. However, if this were the case, who would bear responsibility if or when injuries to people or property occurred, especially if any human involved was unaware of the robot's activities or was unaware of how the algorithms governing the robot's behaviour functioned? The current status of the law and the various jurisdictional approaches to artificial intelligence show that the risks and rewards that can be realized through artificial intelligence may be significantly impacted by how these legal difficulties are handled. The liability system will be put under more stress as a result of AI's growing ubiquity, which is characterized by self-learning, opacity, and autonomy (Stefan Heiss 2021). The institutions tasked with legislating, regulating, and applying the law to Artificial Intelligence-related issues may be less successful given the rapid advancement of artificial intelligence and its complexity (Thomas O'Leary and Taylor Armfield 2020). This article is particularly going to focus on the legal implications of using artificial intelligence technology to perform the functions naturally meant for human beings to do using machine intelligence and the tortuous wrongs thus committed.

The majority of nations' present legal frameworks won't be adequate to address the liability issues brought on by an AI system's acts and decisions. The influence of accelerated globalization efforts makes it clear that the AI problem is not local or restricted to a region and its customary legal procedures. For the international community, including common law and civil law governments, the lack of a regulatory framework in the field of AI poses a problem. As AI stands today there is yet to be a specific comprehensive legislation in any known country to address the legal issues raised by its operation. The best that could be done in most cases is to apply the traditional law designed for civil wrongs committed in real time to manmade errors to AI which may not bring about desirable results.

2. Artificial Intelligence and the legal obligations in tort

Of particular relevance in this article is the idea of automated machines in performing some tasks which could have attendant legal impliations. Automation refers to technological applications where the amount of human input is reduced. This includes personal applications like home automation, business process automation (BPA), and IT automation. Automation is the use of machines to perform tasks previously performed by humans or, to perform tasks that would be impossible for man to do. Although the term "mechanization" is frequently used to describe the straightforward substitution of machines for human labour, automation typically connotes the incorporation of machines into a self-governing system. There is hardly a part of modern life that has not been impacted by automation, which has revolutionized the fields in which technology has been used. Modern day innovations have brought about self-driving vehicles without the aid of human driver; there is the concept of robotic surgery or robot-assisted surgery; the use of Artificial Intelligence robots to carry goods in hospitals, factories, and warehouses, and so on. Adopting AI in performing activities naturally designed for human beings is not full proof that it will be error free. Injury and damage may be done to persons or properties by the usage. Does this create novel challenges to the extant traditional law of tort, or is there a need to enact a special law to

take care of the challenges created by the use of Artificial Intelligence or can the traditional tort law be stretched to accommodate the new challenges?

In a general term tort may be defined as "a civil wrong involving a breach of duty by the law, such being owed to persons generally and its breach being redressible primarily by an action for damages (Kodilinye Gilbert 1982)." Compensation for people hurt by other people's wrongdoing is the fundamental goal of tort law (Araromi, Marcus Ayodeji 2018). The wrongs or harms done could be in the form of physical injury to persons; physical damage to property; injury to reputation; and damage to economic interests((Kodilinye Gilbert 1982)." Intentional wrongdoing, which is defined as deliberate wrongdoing, and negligent behaviour, which is non-intentional behaviour that results in unintended harm to others, are two separate categories of fault. Moreover, different levels of blame intent, severe or egregious fault or negligence, medium, and finally slight fault or negligence can be utilized to more precisely differentiate between fault liability (Busnelli, Francesco D et al. 2005). Under the common law tort is fault-based except in defined circumstances where liability for tort may be strict without establishing the guilty state of mind of the tortfeasor (*Rylands v Fletcher* (1868) LR 3 HL 330). One may conveniently say that it is easy to determine whether a person intends the consequences of his actions by analyzing his state of mind while so acting, or that he acts negligently or recklessly.

With the introduction of artificial intelligence which has taken over some of the functionalities that can be ascribed to man it may be difficult to input to it the ability to act in a way as to establish the guilt of a machine that operates based on this technology. Can machine think or act in a particular way to the extent of establishing its fault independent of its maker or user? If the above is answered in the negative who then is responsible for the wrong committed by an artificial intelligence driven machine? The extant law is formulated in such a way as to govern the activities of man and what is in his control. In the alternative can the principle of strict liability be applicable to machine driven by artificial intelligence? Can the liability for tort committed by artificial intelligence be anchored on enterprise risk rationale? In other words, if you participate in an enterprise for your own gain that has an inherent potential to cause harm to others, you must make up for that injury by making restitution to the other parties. It is only right that you bear the costs associated with running your enterprise if you expect to continue reaping its rewards (Nicholas j. McBride and Roderick Bagshaw 2018).

It is peculiar of artificial intelligence to act on its without necessarily obtaining instructions from someone. In other words, artificial intelligence deals with the ability of objects that are not human to 'think' and sometimes take independent decisions working on already programmed software and learned data. The opacity, dependency on data, complexity and autonomous behavior of AI can cause damage to people and adversely affect their fundamental rights. The self-learning and autonomous decision-making capabilities of AI systems work against the traditional legal doctrine of "foreseeability" as a ground for liability. Many jurisdictions have been taking steps in responding to some basic legal challenges created through computer operations and programmed software. Software are set of instructions given to computer to perform specific tasks (Araromi, Marcus Ayodeji 2017). This indicates that there is a pre-programmed activity to be carried out by the computer which if functioning properly will be working based on a set of instructions. Therefore, if there are some legal consequences elicited through the operation the person putting the programmed device to use will be complicit as it would be assumed that he intended the outcome of the functioning of the device. The punctiliousness of a programmed device may not be ascribed to a device which reprogrammed itself by learning from its environment, typical of artificial intelligence and machine learning. Where an artificial humanoid or a golem is created it is more often than not designed to act on its own having processed data from its environment. If applied unaltered in this case, the usual rule of negligence that states there is no accountability unless a person should have known something was wrong produces significantly skewed outcomes. In such a situation the claimant would likely go uncompensated if, for instance, an AI robot that caused injury to him could not be taken as negligent except a strict liability claim is brought against the user/owner. Also, there is a chance that even if a mistake would result to a damage if made by a person, the same mistake with the same consequence could result in no culpability if made by a sophisticated computer or algorithm.

Most torts require the defendant's invasion of the rights of the plaintiff which could be intentional or by negligence. An act is intentional when one desires the consequence of one's action, whereas in negligence the defendant does not desire the consequence of his action but is indifferent or careless as to the consequence (Kodilinye Gilbert 1982). Since to know the mind of man, and thus his intention, is difficult it behooves the court to determine this by looking at the statements made by the defendant or what he did or the surrounding circumstances. It is a difficult thing to ascribe a mind to a machine or any inanimate object to the extent of determining whether it is guilty of an act or not. The concept of culpability in negligence law assumes an act or omission, and a human mental state that falls short of a certain standard. But the mental elements required to make a man culpable of his action will be overly artificial to ascribe same to machine or inanimate objects (Araromi, Marcus Ayodeji 2016). Even while an employer will be held accountable for the actions of his employees or other persons in a comparable position, it will not be sufficient if a computer system under his control fails to monitor safety, identify hazards, or perform any other similar task. A person directing or

programming it must demonstrate personal guilt (Baris Soyer and Andrew Tettenborn 2020). When an error is made using AI and it cannot be proven that a human was at fault, an employer who is held accountable for an employee's mistake should not be exempt from liability for the exact same error. When a computer is configured based on certain algorithms whatever activity carried out by the computer should be ascribed to the person who sets it in motion. In such a circumstance, since one cannot input fault on the machine which in this case is not a legal person it is apt to categorise such machine as the agent of the person that set it in motion. In certain cases the user of the machine may have open to him some protection under the law of product liability in which case he may claim against the person that developed the faulty algorithms upon which the machine functions. Article 6(1) of the EU Product Liability Directive states that a product is defective when it does not provide the safety expected having taken all circumstances into account. Since Artificial Intelligence is a self-learning system, it is practically impossible for a human to tell the difference between damage caused by a product defect and damage resulting from an act performed by AI system during its processing. This makes it extremely difficult for the plaintiff to demonstrate that there was a defect in the AI system when it was supplied by the original equipment manufacturer (Gyandeep Chaudhary 2020). The opacity of AI systems, the multiplicity of people who might be involved, that might be located in different jurisdictions, and the possibility that some people might not be aware that their work would later be used in an AI system make determining the appropriate person to whom liability can be extended a difficult task (CCBE 2020).

The current status of the law and the various jurisdictional approaches to AI show that the risks and rewards that can be realized through AI may be significantly impacted by how these legal difficulties are handled. There is no one solution that works for all liability and regulatory challenges related to the new, developing technology. The answer is to strike the right balance between fostering creativity and entrepreneurship and while addressing legitimate privacy and safety concerns. The quick development of AI and its complexity may make it more difficult for societal institutions to effectively legislate, regulate, and apply the law to AI-related issues (Thomas O'Leary and Taylor Armfield 2020). There have been attempt to respond in the best possible way to the technology innovations which often change the face of traditional legal system. Sometimes there may be cases where countries develop laws and regulations to tackle those challenges and in some cases response may come at regional, and sub-regional levels. In relation to robotics and AI, a number of foreign jurisdictions, including the US, Japan, China, and South Korea, are considering taking regulatory action and have already done so to some level. At this juncture, it is desirable to consider the attempts made under the European Union and the United States to create liability regime for Artificial Intelligence usage. These two regions are chosen because of their leading roles in quickly adapting their laws to new technologies.

Ordinarily, countries are meant to respond to technological innovations from time to time to keep pace with the speedy development in this area. This is to avoid legal crisis that may ensue if nothing is done in this respect and to fill up the lacuna created in the law by these innovations (Araromi, Marcus Ayodeji 2018). The legislature has the responsibility of being proactive in enacting adequate law to take care of foreseeable situations and make the law flexible enough to handle the avalanche of developments currently being witnessed in the information technology sector. In the past, specific technology developments have resulted in the creation of unique laws in the US and several EU member states. Such laws have replaced the typical requirement of negligence with strict liability (Paul Opitz 2019). Will that pattern be seen with totally self-sufficient robots? If household robots or other autonomous systems result in injuries, who will be held legally responsible? Due to the challenges thus created by this rapidly expanding technology attempts have been made in several quarters to address these problems which may vary from identifying and proving the defect which caused a damage and determining the liability among different players.

3. Analysis of the European Union attempts at regulating AI

About 2010, the European Union's member states began a global discussion on robotics. Many projects and frameworks addressing legal challenges in robotics have been developed as a result of this discussion with the motive of developing a harmonized rules for AI usage and deployment. In the European Parliament's report on civil law rules on robotics of 2017 it submitted that the existing law was not sufficient to handle every aspect of autonomous systems which are beyond the physical control of the users. To ensure an equal and open legal system among all member states, the Parliament stressed the need for new legislation at the European level. Based on the recommendation of the European Parliament to adopt both legislative and non-legislative approaches to solve the problems created by artificial intelligence and robotics, the European Commission came up with certain initiatives. They developed certain principles relating to general usage of artificial intelligence and robotics in most areas of life. The need to evaluate the sufficiency of civil law liability rules in light of new technological advancements like the Internet of Things (IoT), sophisticated robotics, and autonomous systems was already acknowledged in January 2017 in the Communication on Building a European Data Economy and the accompanying Staff Working Document. Among other things, the Commission launched a structured stakeholder engagement and a public consultation on responsibility for autonomous robotics and systems. The

Commission took the campaign to considering liability for defective products which would definitely weave in the manufacturers. It considered whether the existing Directive (Directive 85/374/EEC on Liability for Defective Products) on product liability would be sufficient for autonomous machine or there would be a need to review it. The Commission further considered opportunity of devising risk-based liability regimes like allocating liability to the producers who have opened up the people to the risk of injury or damage by the use of his manufactured devices and liability assigned to market actor who has the responsibility to minimize or avoid risks (European Parliament resolution oncivil law rules on robotics, 2015/2103 (INL) 2017).

The European Parliament acknowledge the fact that the trend toward automation necessitates that people engaged in the creation and commercialisation of AI applications incorporate security and ethics from the outset, acknowledging that they must be ready to assume legal responsibility for the caliber of the technology they create ((European Parliament resolution oncivil law rules on robotics, 2015/2103 (INL) 2017). It however expressed that rules governing liability should not affect the process of research, innovation and development in robotic. It has been observed that under the present legal framework, robots cannot be held directly responsible for actions or inactions that harm third parties. The current rules on liability cover situations where the manufacturer, operator, owner, or user of the robot can be identified as the cause of the robot's act or omission and where that agent could have foreseen and avoided the robot's harmful behaviour. The manufacturers, operators, owners and users may be held strictly liable for the acts or omissions of a robot in these situations. Technology advancement has also in the past resulted in a number of unique statutes in distinct European Union member states. In specific situations involving cutting-edge technologies, such statutes substituted the common standard of negligence with a kind of strict responsibility. There have been different regimes of liability created under the European civil liability laws, which may be hinged on negligent action or inaction and sometimes liability may be strict without the need to prove a fault as required under negligence as basis of liability. In precise term the liability law of European countries require the existence of human actor therefore making robots and other artificial intelligence machines mere tools deployed by human. However, the more sophisticated and autonomous a robot or artificial intelligence machine is the less likely it would be considered as a mere tool for the user. Autonomous systems differ from "regular" machines in a number of ways, and these differences present unique liability issues. Deep learning, particularly reinforcement learning, interconnectivity, and the (un)predictability of intelligent machines are the most important variables.

Deep learning can run entirely on algorithmic training with no human involvement. The software, which is processing information-data through a deep learning activity, has reached a technological limit beyond which not even the creator can comprehend how the program has arrived at a certain answer. This lack of control is referred to as the "black-box problem" or "the human out of the loop" phenomena (Benedetta Cappiello 2019). Also, when machines become more networked, it can complicate the isolated treatment of individual systems because they have the capacity to simultaneously construct a connected infrastructure. Finally, the unpredictable behaviour of autonomous systems may provide the biggest problem for conventional liability systems. It can be more challenging for a human user to predict robot behaviour as intelligent systems become more capable of learning independently and from other connected systems. Thus, attributing legal or electronic personhood to artificial intelligence machines due to their autonomy may not be technically, philosophically or legally sensible, and at best artificial with no sound logic. It therefore sounds illogical to attribute some legal rights and duties to robots or artificial intelligence machines as done for natural persons. According to various legal standards, it is always feasible to pinpoint a specific human who can be held legally liable for harms caused by the creation, maintenance, or usage of a machine or artificial intelligence system (Artificial Intelligence 2019). In the Singaporean case of *B2C2 v Quoine Pte Ltd* (2019) SGHC it was decided by the court that algorithms can only take the decisions which they are programmed to take. Thus, the manufacturer should take responsibility of defective product or unpalatable decisions taken by an AI device. Although corporations and companies have the legal status of independent legal entities, they are nonetheless equally liable to the stakeholders for any obligation that may arise from the transactions that these corporations and companies have entered into. According to an EU study, the people who have the thing in their care or custody are typically responsible for any damages the object causes (European Commission 2017). The European Economic and Social Committee in its 2017 Opinion similarly believed that ascribing personhood to AI robots would stultify the traditional responsibility created by the law against erring persons and thus parry away the responsibility for the risk or moral hazards emanating from the development and use of artificial intelligence, which may lead to abuse of the system (European Economic and Social Committee 2017). Similarly, the Expert Group on Liability and New Technologies appointed by the European Commission in its 2019 report denied the notion of assigning electronic personhood to artificial intelligence. It stated thus:

> there is currently no need to give a legal personality to emerging digital technologies. Harm caused by even fully autonomous technologies is generally reducible to risks attributable to natural persons or existing categories of legal persons, and where this is not the case, new laws directed at individuals are a better response than creating a new category of legal person. Any

sort of legal personality for emerging digital technologies may raise a number of ethical issues (Techno Report 2017).

The European Committee established the Expert Group on Liability and New Technologies and in 2019 it came out with a published report which stipulates that it is not ideal to ascribe legal personality to AI rather the operator who puts an AI machine to use and as such benefited from it ought to be strictly liable for the injuries caused and the manufacturers are also held strictly liable for the defectiveness of their products (Expert Group on Liability and New Technologies 2019). In order to ensure the same level of effectiveness, transparency, and consistency in the implementation of legal certainty throughout the European Union for the benefit of citizens, consumers, and businesses alike, it was believed that the civil liability for damage caused by robots is a crucial issue that also needs to be examined and addressed at the Union level (European Parliament Resolution 2017). The European Parliament examined that future legislation should be based on two potential strategies in its report from February 16, 2017: (1) a strict liability regime and (2) a risk management strategy. The Commission also pointed out that strict liability simply needed to show that harm has been done and that there is a connection between the harm caused by the robot's harmful operation and the harm the injured party experiences. However, the risk management strategy focuses on the person who is capable of minimizing risks and dealing with negative effects in specific situations rather than the person "who acted irresponsibly" as being personally culpable. Generally, the party at fault should only be held accountable "proportional to the real level of instructions given to the robot"; the more capable or prolonged the robot's training, the greater the user's or owner's liability. Such a responsibility scheme would not only guarantee recompense for future victims, but it would also foster legal stability. The manufacturer's culpability alone is no longer sufficient or appropriate for always-learning robots because the user's influence becomes more significant. The user chooses his robots and reaps the rewards of their use. Additionally, if the owner is actively involved in the learning processes, he may even be in the best position to comprehend the robot. Thus, where an automated machine is designed to work independently of human supervision the general rule in negligence predicating liability on reasonableness and foreseeability of wrong or fault by human being will be greatly distorted if applied unaltered to artificial intelligence driven equipment. According to a writer, even though an employer will be held responsible for the actions of its employee or anyone else in a comparable situation, the failure of a simple machine under its control such as a computer set up to monitor safety, identify risks, or perform some other similar function will not be sufficient. A person directing or programming it must demonstrate personal guilt (Baris Soyer and Andrew Tettenborn 2020). Certain AI systems, according to the European Parliament, pose significant legal challenges to the current liability framework and may result in circumstances where it is very difficult or even impossible to determine who was in charge of the risk associated with the AI system or which code, input, or data ultimately resulted in the harmful operation. This factor may also make it more difficult to establish a causal relationship between harm or damage and the behaviour causing it (European Union Resolution 2020). In another breadth, it can be said that whereas human beings are completely in charge of their actions same cannot completely be said about autonomous robot which is a creation of man and acts based on the directions of the program or algorithms embedded in it to perform specific tasks, howbeit autonomously (Gyandeep Chaudhary 2020). Same can also be said of corporations that are conferred with the status of legal personality separate from the individuals that direct its affairs; the stakeholders are still remotely liable for any wrong supposedly committed by the corporations. Being in charge of an AI system entails accepting responsibility for any harm the system may bring to both users and bystanders from a legal standpoint; otherwise, there would be a liability gap that might only be closed by a *fictio iuris* (Benedetta Cappiello 2022).

In as much as it is desirous to protect third parties from damage or injury the need not to stifle technology development is equally rife. Striking a balance between these two variables should be the interest of the legislature and policy makers (Araromi, Marcus Ayodeji, 2016). The risk of users being less eager to accept developing technology can be eliminated by addressing those legal concerns with high ethical standards for AI-systems and sound and fair compensation procedures (European Union Resolution 2020). The EU Parliament encouraged member states to adjust their liability rules for certain actors or make it stricter for certain activities. One of the objectives of the EU Commission in its quest to develop a legal framework for the member states is to ensure a balanced approach in protecting human rights and at the same time encourage people to embrace AI-based solutions and reassure its further development (European Commission Proposal). The legal framework is aimed to be robust and flexible enough to be adapted to evolving technologies and new challenges they may present. Aside this certain proposal for regulation of AI, particularly the high-risk ones, were made and to set mandatory standards that should be met by such category of AI before finding its way into the Union's market. Additionally, during the whole lifecycle of AI systems, providers and users of those systems are subject to predictable, reasonable, and explicit requirements to ensure safety and adherence to current laws protecting fundamental rights. High quality data, documentation and traceability, transparency, human oversight, accuracy, and robustness requirements for high-risk AI systems are strictly required to mitigate the risks to fundamental rights and safety posed by AI and that are not covered by other existing legal frameworks. For the other AI

systems which are not high-risk only limited transparency obligations are imposed. The EU Commission proposed Regulation 2021 suggests in article 9 that a risk management system shall be set up for high-risk AI systems and lists the procedure for such management forthwith (European Commssion Proposal 2021). The Regulations provides for high-risk systems to be designed in such a way that they can be effectively overseen or monitored by human beings during the time they are been put to use. The oversight function shall be aimed at preventing or minimising danger to health, safety and fundamental rights of people. It is further provided that high-risk AI systems that continue to learn must be constructed in such a way that any potential biased outputs caused by outputs utilised as inputs for subsequent operations (also known as "feedback loops") is properly addressed with appropriate mitigation mechanisms. For the purposes of accuracy and assurance of cybersecurity it is provided that High-risk AI systems must be resilient to unauthorised third parties' attempts to change their functionality or output by taking advantage of system flaws.

The report does acknowledge the diversity and heterogeneity of AI-based applications as well as the various legal, societal, and economic issues they raise. Therefore, it proposes that these applications be categorised in accordance with what it sees as a fundamental dichotomy, namely, that between low- and high-risk activities, to support the operator's strict liability in the event that emerging digital technologies are used in public settings and may typically cause significant harm due to the interaction of its potential frequency and severity (Artificial Intelligence and Civil Liability 2020). It has been suggested that removing strict liability for lesser claims that come under the category of low-risk causes inefficiencies and results in justice being denied to many parties, especially those that may be related to the regular use of new technologies. Similarly, whether a technology is used in a public or private setting is not the major factor in determining the level of danger the application poses and, consequently, the necessity to control it through strict liability laws.

Having considered and reviewed various comments on the suggested approached to resolving the problems associated with AI in relation to tortous acts, various suggested approaches to be adopted are based on different factors as there is no on-size-fits all solution to every case. Thus, different types of liability regimes have been designed to address AI enabled tort. It has been opined that the autonomous nature of some AI devices fault-based liability regime becomes impracticable, therefore leaving some victims without compensation (Bernhard A Koch, Jean-Sébastien Borghetti et al 2022). In situations where fault can be established on the part of the users and the manufacturers, liability could be founded on fault, otherwise liability could be based on other considerations. Strict liability regime has been proposed for the usage of AI that involves high-risk activities. The black box characteristic of AI and Machine Learning may make it difficult for the victim of a wrong to establish a breach of duty of care on the part of the user or manufacturer of the device bearing such technologies; thus, a liability regime based on the presumed breach of objective duty of care can be deployed to the evolution of technologies, such as AI/Machine Learning. The idea of vicarious liability may be expanded (either directly or by way of analogy) to functionally equivalent situations where use of AI is made rather than using a human auxiliary as a separate option to address the risks presented by AI, while maintaining the respective national regime of liability for others.

4. Analysis of the United States Approach

In as much as it is generally believed that AI driven vehicles would reduce the number of accidents on US roads basically caused by human frailty and avoidable errors, therefore the need to further promote technology innovations in this respect, the technology itself is not totally immune from errors or failure of the technology (Eno Center for Transportation 2013). The very conspicuous intervention in the US concerning AI driven equipment is in the deployment of Automated Vehicle (AV) otherwise known as self-driving vehicle. The stance taken by the government of the United States of America regarding AI is to promote its growth and utilization in order not to stifle the innovation thereby discouraging technology initiatives and development (The US Report on AI 2016). The White House Office of Science and Technology Policy (OSTP) emphasises the necessity for fundamental and extensive research for the advancement and usage of AI as a recommendation in the report. The fact that the US is inclined towards promoting technology innovations does not prevent it from taking steps to regulate the creation and regulation of AI. United States response to technology innovation to ensure safety of products and prevent injuries spans over two decades with effort being taken at federal, state and local government level using both judicial and legislative/regulatory mechanisms (Ville Rautanen 2023). Undoubtedly, there may be conflict where more than one regulation is put in place to control technology activities at various levels of government. This can be nipped in the bud where the federal government take the big brother stance of overly taking charge of the regulatory ecosystem. The instance of this is the National Highway Transportation and Safety Administration's voluntary guidance published in 2017 known as "Automated Driving System: A Vision for Safety 2.0" intend to regulate manufacturing, testing and deployment of automated vehicles and preventing states from implementing their own regulations in order to prevent conflicts. The Guidance, which applies to all vehicles under the agency's control, focuses on automation Levels 3 to 5 (Conditional, High, and Full Automation). This offers a flexible and non-regulatory approach automated vehicle technology safety and

prior to this initiative the Federal Automated Vehicles Policy, which was released in September 2016 by the National Highway Traffic Safety Administration (NHTSA) and the U.S. Department of Transportation (USDOT), introduced a proactive strategy in providing safety assurance and promoting innovation (Autonomous Vehicles 2023). States are in charge of regulating human drivers and vehicle operations, whereas NHTSA is solely in charge of overseeing the safety, design, and performance elements of motor vehicles.

There have been attempts to create a federal statutory framework, but these initiatives have not been effective. The Safely Ensuring Lives Future Deployment and Research in Vehicle Evolution (SAFE DRIVE) Act was passed by the U.S. House of Representatives in September 2017 with strong bipartisan support. Similarly, the American Vision for Safer Transportation through the Advancement of Revolutionary Technologies Act (AV Start Act) was introduced by members of the Senate of the 115th Congress in 2018. The act would have provided a framework for the federal government to regulate, test, deploy, and ensure the safety of autonomous vehicles. However, the Act's advancement was delayed in the Senate, partially as a result of worries over AV implementation and safety. The Senate and House bills offer the federal government a framework for creating AV rules, despite the discrepancies between them. They would preserve the states' historic right to control licencing, insurance, law enforcement, and traffic laws while superseding state laws in the NHTSA-regulated sectors. The preemption clause is regarded as being especially crucial because adopting AVs will become more challenging if additional states pass their own legislation (Torts of the future 2018). However, twenty one US states have already passed their own AV laws, and more than forty US states have examined their own legislation over the past few years. Nevada was the first state to enact legislation governing autonomous vehicles at the state level, and its plan serves as a helpful illustration of how to manage experimental vehicles. A bill defining AVs was passed by the Nevada Legislature in 2011 along with instructions for the Department of Motor Vehicles to create regulations covering, among other things, the licencing of AV drivers, their use on state highways, the specifications and safety standards for the vehicles, and insurance for drivers. Injuries could be decreased and innovation could be advanced by well-made safety rules that eliminate ambiguities about what is required. Due to these factors, the National Institution of Safety and Standards has a responsibility to develop a project to create the performance metrics and safety standards that will allow humans and robots to coexist in the same environment.

Though so much economic and social benefits can be gained from the usage of AI driven vehicles the technology, like any other technology, has potential to fail at any point due to programming errors, the algorithm reprogramming itself, human interference, or environmental corruption of data. It has been opined that excessive litigation can have chilling effect on AV technology particularly at the early development and deployment stage (Torts of the future 2018). Like in other cases of tort liabilities it is important to determine before the roads are saturated with automated vehicles at whose door step liability lies. More importantly that the roads will be shared by human drivers and automated vehicles. Some states have already taken step to determine liability issues in AI driven vehicles. For instance, Nevada and California place liability for any accident in automated driving on the operator of the vehicle, whereby operator is defined as the "person who causes the autonomous technology to engage (Cal. Vehicle Code §38750 Nev. Rev. Stat. §482A.030) ." Car accidents are often analysed in terms of the driver's fault, with product liability only being a possibility where a car flaw is claimed to have contributed to the accident or made the injuries worse. In a report published in February 2017, the American Association for Justice (AAJ), a group of plaintiffs' attorneys, argued that automated vehicle manufacturers should be responsible for car accidents thus suggesting strict liability regime as the most appropriate application (American Association for Justice, 2017). This is particularly true where it cannot be established that the operator that sets the machine in motion has not been negligent or at a fault. On the other hand, according to the RAND Corporation, it would be better for drivers to have no-fault liability insurance rather than transfer responsibility from the driver to the auto manufacturer, as AAJ proposes (James M. Anderson et al 2016). In the alternative it has been suggested that the states or federal government should establish a fund to compensate injured persons thereby preventing excessive liability to stifle the development of automated technology. These approaches are considered as alternatives to traditional tort liability by legal scholars.

5. Conclusion

Intelligent machine can definitely bring about positive changes in society which may include economic gains and assurance of safety in certain respects by avoiding errors that could be made by humans. Without conceding the fact that the AI driven machines are not perfect the technology has done great service to society. Errors are inevitable in the usage of AI devices as nothing is absolutely perfect. Where injuries occur as a result of the operation of AI driven equipment the esoteric nature of AI itself sometimes makes it difficult to determine at whose door's step a blame is to be put as the technology sometimes makes it incongruent to apply traditional tort liability law to it. Nationally, the domestic laws of various counties ought to make provisions for the adoption of AI enabled equipment into their systems in order to create a leeway for smooth operation of the technology, especially in the areas of civil liabilities, contract and criminal law. Further steps at the supranational level may

not be unnecessary with a bid to harmonise the laws or establish a model law that will accommodate all the interests concerned from a well discussed draft law.

Machines that are operated by AI may have to take decisions that may impact human beings and the responsibility of their actions may depend on some factors which may be based on the level of human involvement in the operations. AI incorporation into devices may range from semi-autonomous to fully autonomous functionality. For instance, in AI driven vehicles the Society of Automobile Engineers have identified six automation levels from 0 to 5 (SAE Int'l, Automated Driving 2014). Whereas Level 0 requires no automation Level 1 requires major control of the vehicle by human driver only to be assisted by some features built with the car. Levels 2 and 3 which are respectively partially and conditionally automated require considerable human involvement. The level of involvement demanded of human driver on these two levels will surely have much to contribute in determining liability for tort in this regard. Since partial automation would involve human driver being responsible for monitoring the environment and performing the driving tasks he should be held liable if any accident occurs as a result of his negligence or where imputation of intent can be established on his part. It is apt to conclude that the traditional tort laws designed for non-AI committed torts and the extant regulations on motor car driving in most jurisdictions will be sufficient to determine the liability of parties in tort matters in levels 0-3. This submission is not far-fetched from the fact that human driver is required to be in charge of the vehicle as appropriate. For the purpose of levels 4-5 the high level of automation may likely result in looking beyond the tort law and regulations traditionally designed for non-automated vehicles. The traditional tort law is modelled on fault or negligence on the part of human driver which cannot be ascribed to a machine. The exception to this is where strict liability can be used as the basis of liability without necessarily finding fault or negligence (*Rylands v Fletcher* (1868) LR 3 HL 330).

Since AI presents a new dimensional challenge to the corpus of existing traditional tort liability regime it is imperative to develop a liability regime that will take care of AI, especially where it takes a full swing on automation. Automated machines that are self-driven without active involvement of an operator cannot be under the same category of tools that are humanly manipulated in which case human being can be directly responsible for the errors or injuries committed. This latter case presents a situation where fault can be traced to a natural, or in some cases artificial person, which forms the basis of liability in traditional tort. The Black-box syndrome or the unpredictability of autonomous systems provides the biggest problems for conventional liability regime. Product liability law determines who is at fault where a defective product causes a damage to another party and it is entrenched in the common law and statutory laws based on theories of negligence, breach of warranty and strict liability. It is difficult, if not impossible, to establish the fault requirement in an autonomous machine particularly because of its ability to learn from external data and carry out activities independent of the originally installed program by the manufacturer. Placing faults at the door step of a manufacturer of AI enabled devices at the slightest injury or damage has the ability of discouraging innovations and production of technologies and thus has stifling effects on technological development. There should be a level of complacency on the part of the manufacturer in the process that AI algorithms learn new things which they act upon to cause an injury or a damage. The manufacturer should therefore be conscientious and be mindful of the nature of data the algorithms are receptive of in the process of learning. Since it is not ideal to ascribe legal personhood to AI devices and therefore cannot make them negligent the fault liability can be owned by the manufacturer where he develops faulty algorithms or he does not tame the algorithms to prevent them from learning from unwholesome data (Expert Group on Liability and New Technologies 2019). Where however a damage is caused by the AI device without a glaring fault on the part of the manufacturer strict liability approach should be adopted else the victim may go without being compensated for the damage.

Many legal issues may also crop up in the usage of AI in the sectors of the society which may come under different genres of law aside tort liabilities. One particular instance is hacking into devices with the purpose of committing a crime or altering the software composition of AI devices which may result in malfunctioning of the devices. Since many jurisdictions have enacted laws in response to cybercrime such a hacker, or cracker as the case may be, can be brought to justice under such legal provisions. The spiral effect of this crime may also create a legal problem for the manufacturer who has the responsibility of ensuring the security of the device to avoid infiltration by cybercriminals. Where the purchaser of the device is required by the manufacturer to engage in regular updates of the device to prevent intrusions, any negligent on his part should ordinarily make him legally liable for the wrong done to another party by the AI device.

Bye and large, it is important to create a legal regime for the adoption of AI in order to mitigate the sufferings that may be experienced by third parties who ought to be protected by law from wrongs committed by others. As observed above, the traditional legal regime for compensating tort victims may not be adequate for wrongs committed through AI-driven equipment. There have been terse resources available to justify the position of the law as regard AI committed tort, this may not be unconnected to the fact that there have been no adequately established laws to address this concern. Enactment of laws or court's pronouncements on these issues will really help the jurisprudence of AI-tort and makes it more engaging for scholars.

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