

Tort Liability Of Humanoid Robots' Damages A Comparative Study Between Civil Law And Rulings Of Islamic Jurisprudence

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Abstract

The robot (Humanoid Robot) is most notably outstanding feature of artificial intelligence. It has been used into several areas such as civil and customer service, medicine, industry, education, home and military service, and others, which raises many legal issues and obstacles, including but not limited to defining the concept of a robot, the extent of its legal personality, legal responsibility and legitimate basis that a robot liability can be established, represented in the theory of faulty products, theory of human representative liable for damages caused by robots, theory of guarding objects liability, and the theory of legal certainty of the Master on the work of his /her subordinates (Master-slave basis), as well as evaluating these theories, and Islamic jurisprudence point of view on that liability. Finally, the study followed by a conclusion that includes key findings and proposals.

keywords : (Tort Liability - Robot – Humanoid Robot).

Introduction

All praise be to God, who created man and taught him eloquence. Allah says in chapter 10 Verse 24 " The life of this world is simply like water. We send it down from the clouds so that the produce of the earth, whereof people and cattle eat, grows with this (water) abundantly until when the earth (by means of it) receives its excellent ornaments and has decked itself fairly beautiful and its owners feel sure that they are its masters, unexpectedly We command its destruction either by night or by day, so We render it a field that is mown down as though nothing had existed there the day before. Thus do We explain in detail the signs for a people who reflect".

In the framework of marvellous advances in technology in recent times, artificial intelligence, led by robots, raises many issues, particularly in view of its development, which results in legal and ethical problems that require regulatory intervention, especially in the term of tort civil liability resulting from the operation of robots.

Therefore, this study is meant to demonstrate the appropriateness and ability of the current regulations on how to address more effectively the raising issues and problems to ensure justice.

In view of the lack of an effective legal regulation in the field of civil liability related to damages caused robots, we have no choice but to go for general rules in the present laws and regulations to know how appropriateness are they for addressing and determining the basis for that liability, as robots are no longer just a science fiction, but they have become a fact and reality.

The Robot has become the human's partner in tort liability, particularly within the independence granted to some of these types of robots. As it is expected that the robot alone may cause damage to others and their property without any human intervention. There is no great evidence of this than the warnings made by Bill Gates, Stephen Hawking, and Elon Musk with regard to the degree of dangers posed by artificial intelligence that could be easily turned against humanity, and thereby the humanity will be at risk of artificial intelligence if it exceeds human intellectual capability. (Michael - 19 August 2015).

Problematic Feature of the Study:

The study seeks to answer a number of questions on establishing an accountability for an action or damage caused by a robot.

- What is the legal features of a robot?

- What are the limits of accountability of the robot?
- What is the possibility extent of a robot to have legal personality and financial disclosure?
- How likely is it that a robot subject to the rules of tort liability?
- What is the views of Islamic jurisprudence on the issue of robots?

Objectives of the Study

The study meant to reach several results, the key important as follows:

- Explaining the views and position of Arab laws and their ability to accommodate the issues and problems resulting from the damages caused by robots?
- Identifying the articles of the tortious liability of robots, and the extent that a robot can be described as a legal personality.
- What is the possibility extent of a robot be held accountable?
- The position and opinion of Islamic jurisprudence on the damages resulting from an act committed by a robot and the legality of compensation for such damages sustained.
- Helping to create a proposed of a draft law that deals with the liability resulting from the action of the robot, after setting the basic rules for such responsibility.

Research Literature (Past Studies)

It was observed when referring to the research literature that there were studies made but dealt timidly with this issue due to the rarity of sources, for examples:

First: "The issue of the person responsible for operating the robot", (Al-Qusi, Hammam, Jil Center Journals - In-depth Legal Research, Issue 25, 2018).

This study outlined the discussion and analysis of the texts of the European civil law on robots, which was issued in 2017, as this law adopted the theory of the human representative in compensating the person affected by the damages sustained from the operation of robots.

This law specifies the parties responsible for those damages as a human representative: the factory, the operator, the owner, and the user. The responsibility of the human representative is based on evidence, so any of these people becomes liable for damages of operating the robot if the fault is proven on its part.

Second: The legal status of the robots between personality and liability. An original comparative study by Dr. Muhammad Irfan Al-Khatib, Journal of the Kuwaiti International Law School, Issue 4, Kuwait, December 2018.

In view of the lack of recognition of legal personality of robots, this study examined the extent that robots can be held accountable for the damages they caused, which natural persons are not involved or a cause when it occurred.

Moreover, the study outlined the distinction between the features of robots and the characteristics of natural and legal persons who have a legal personality, as it is clear as shown in previous studies that it needs a deeper study to complete the previous efforts made in these studies, so that everyone can learn the jurisprudence and legal rulings through defining of tort liability in legal legislation. This study is a distinguished study as it addressed at the same time the most important traditional theories as well as the modern theories. As a researcher, I sought to distinguish and weigh between these theories in order to reach the most appropriate one that might help in establishing civil liability for the damages caused by robots in view of the uniqueness that characterizes such smart machines.

Third: A PhD thesis on the objective liability resulting from the damages caused by a programmed robot according to artificial intelligence technology - a comparative study made by student Ghazwan Abdel Hamid Shweish. The thesis explained the liability sustained from the use of artificial intelligence in various areas of life, such as self-driving cars, and medical devices specialized in performing complex surgeries, unmanned aircraft, drones, smart weapons, and other smart programs and devices. However, it has been observed that the study is limited specifically to applied examples without a comprehensive study generally.

Research Methodology

This study built on two approaches: the comparative approach, and the deductive approach

First: the comparative approach:

This is made via introducing the views of comparative jurisprudence and judiciary, as well as the Islamic jurisprudence in implementing its rules, legal texts and applications of the theory of damage,

in terms of liability and indemnifying for the liability of robot action. The study also produces comparative laws, especially the Arab civil laws, French law, and English law as well as Arab laws.

Second: Deductive Method

The goals of the deductive approach are to study the problem entirely by moving from the whole to the part, as well as through proceeding from basic postulates, theories or general knowledge, then toward the particles via the concluded findings.

Research Plan:

Introduction

Chapter (1): Concept of tort liability of the robots and all of its types

First Requirement: Concept of tort liability in Islamic jurisprudence and statutory law.

Second Requirement: Definition of robot

Third Requirement: Types of robots

Chapter (2): Elements of Tort Liability of Robots' Actions

First requirement: Error occurred by the act of a robot

Second requirement: Damage sustained by the error of the robot

Third requirement: Causal relationship between the act of a robot and the damage sustained.

Chapter (3): Recognizing Legal Personality of Robots

First requirement: the extent of personal consideration of the robot

Second requirement: the implications of recognizing the personal consideration of robots

Third requirement: Assessment and interconnect between the legal personality and legal liability of the robot

A conclusion and the key findings of the research, proposals and recommendations.

Chapter (1)

Concept of Tort Liability of Robots

Introduction and Partitioning:

A definition of tort liability in Islamic and legal jurisprudence, then getting to know the types of robots.

First Requirement

Concept of Tort Liability in Islamic Jurisprudence and Law

Islamic Sharia: The Islamic law have not dealt with liability, but rather brought focus on liability through the rule of guarantee or fine. Although the concept of guarantee is more comprehensive and broader than liability, they, however, agree with the meaning of liability concept.

The guarantee in the language is an obligation on others, and it is derived from the guarantee, because the protective care and financial obligations are within the person in the meaning of the guardianship and care. It is said a person is cared by another person, it means made him attached and connected to him, as the Almighty Allah said in the Quran: "Put her in the care of Zakariyya" i.e. became responsible for her and managing her affairs. (195 Al Jaziry)

Moreover, the compensation or guarantee is defined linguistically as the liability or an obligation, and in the terminology of the jurists: it is given several meanings, including bond, guarantee, liability and commitment which will be toward a harmful act (Al-Hamwi 1985, p 311). It was also defined as a liability duty with a demand to fulfil it if the conditions are met (Al Khafif1 971).

Furthermore, it was defined in the Journal of Legal Rulings in Article 416 as (giving the like of a thing or an object if it is of things or objets and giving its value if it is of values). Al-Shawkani defined it as a fine for damage (Al-Shawkani, 1973, p 299). Al-Hamwi defined it as "a guarantee of damage arising from a harmful act" (Al-Hamwi 1985, p. 311). It was also said it is: a commitment to compensate others for damage to money or loss of benefits, or for partial or total damage (Al-Zuhaili, p. 22).

Ibn 'Umar (May Allah be pleased with them) reported:

The Prophet (ﷺ) said, "All of you are guardians and are responsible for your subjects. The ruler is a guardian of his subjects, the man is a guardian of his family, the woman is a guardian and is responsible for her husband's house and his offspring; and so all of you are guardians and are responsible for your subjects." (Bukhari 2554).

It was said that: it is an obligation of financial compensation for damage to others. (Al Zarqa 1998 P.107). The matter that Sharia scholars used liability in two senses:

First: in the sense of guarantee, which is a fine. Al-Shawkani says, "The commitment or liability is a fine for damage."

Ibn Hazm says, "It is not permissible to oblige anyone to fine money without a text or consensus." (Ibn Hazm 1352 H Islamic calendar).

Second: in the sense of guarantee, commitment or liability, and this is what the majority of Maliki, Shafi'i, and Hanbali say. The Malikis say (Al-Sawy Hashiyat Al-Sawy 3/272): A guarantee is an obligation that is costly, a debt owed by others, (Al Ansary 2000 AD). And the Hanbali say, "It is the joining of the guarantor's responsibility to the debtor on his behalf." (Ibn Qudama 313/6).

The legal experts define tort liability as: it is based on a breach of one legal obligation that does not change, which is the obligation of not to violate or breach (Al-Sanhouri, Part 1, p. 747).

Second Requirement

About the Robots

Numerous wonderful inventions arose in recent decades, among the most important in such field is a device that the inventor "Badi' al-Zaman al-Jazari" called the "Peacock Fountain". It is a machine used to wash hands. It used to automatically provide water, soap, and a towel to its users. Because of this invention, Al-Jazari was called "the father of the robot". In Europe, the concept of robots capable of facilitating life for humans emerged during the Middle Ages, particularly when both the philosophers Roger Bacon and Albertus Magnus studied self-propelled machines and manufactured some of them (Al-Qadi, 2010, pp. 20-23).

Several and various inventions followed that and the first design of a humanoid robot was the "mechanical knight" in 1495 AD, designed by the Italian painter and scientist Leonardo da Vinci. In the late thirteenth century, the invention of the automatic watch led to the supply of mechanical power to self-propelled machines, and in the eighteenth century, games makers produced many self-propelled machines in human image capable of speaking, writing, playing music, and playing chess as well.

The concept of modern robots' dates back to automatic devices that were invented in the past, and were called "self-propelled machines". In Greece, the mathematician Arkytas Ἀρχύτας invented during the fourth century BC a mechanical device in the form of a dove that was able to fly, but during the era of the ancient Egyptians about 1500 BC, a statue of a king named Memnon was created, and this statue was used to make musical sounds every morning.

The Greek Engineer Heron of Alexandria, who was specialized in the field of robotics, invented many devices such as a mechanical machine for distributing holy water, an automatic theatre, and a moving statue of the Byzantine Emperor Hercules through the flow of water inside it. Heron explained the function of his automatic devices in his book "automatopietica" (Al-Sharqawi, 1996, p. 26).

In 1913, the robot "George" was featured by the electrical engineer, "Elmer Ambrose Sperry", and it was one of the first robots. This robot named George was intended for piloting aircraft, and the first model of it was a magnetic compass linked to a "gyroscope" device that indicates the direction of the aircraft's flight, enabling human pilots to leave the flying process to George, which takes corrective actions in the event of a change in the aircraft's position.

Also, the first industrial robot was designed by the Engineer, "George Devol", and the main task of this robot was to move and pick up heavy objects, then it was developed to carry out the task of welding metals (Roport 2022)

First: Definition of the Robot:

The word *robot* means forced labour or compulsory work. It is derived from the Czech word "Robot", and the idea was put forward in a play in which a genius Engineer named Rossum manufactures a number of robots to be used in the menial work that man usually refuses to do or those that pose a threat to his life. But these robots were found to be better than the human being who accepts to assault or kill his human brother.

The Robotic Industries Association (RIA) and the American Institute of Robotics defines Robot as "a reprogrammable, multifunctional manipulator designed to move material, parts, tools or specialized devices through variable programmed

motions for the performance of a variety of tasks. (Logsdon, 1984.P.19)

The European Parliament's Research Service defines a robot as a physical machine which is aware of and able to act upon its surroundings and which can make decision (Referred, 2018, p. 13.).

As for the Japanese Robot Association, it defined industrial robots as “a multi-purposes machine equipped with limbs and a memory device to perform a predetermined sequence of movements, and it is able to rotate and replace the human factor by automatic performance of movements.”

The truth is that artificial intelligence paved the way for the appearance of the robot, giving the machine the ability to think and make decisions on its own and perform perfectly. The machine has the ability to think and make decisions on its own and performs perfectly.

(Schodt, Frederik, 1988), PP. 37. 39.

This also includes the definition of the International Federation of Robotics as: “automatically controlled, reprogrammable, multipurpose manipulator, programmable in three or more axes that enjoys a degree of independence and has mobility within its surroundings to perform the intended tasks (BALKIN, J.M 2015, p. 50). It is noted that the definition is not exhaustive.

The Robotics Institute of America (RIA) defines a robot as: A re-programmable multi-functional manipulator designed to move materials, parts, tools, or specialized devices through variable programmed motions for the performance of a variety of tasks. It is also a definition limited to a restricted number of robots

Whereas the Japan Federation of Robots defined it as “a multi-purposes machine equipped with limbs and a memory device to perform a predetermined sequence of movements, and it is able to rotate and replace the human factor by automatic performance of movements". (Salama, 2014, p. 12).

I believe that this definition is almost touch the truth, but it is still far from it, and the fact is that a robot cannot be defined far from the artificial intelligence term, so artificial intelligence can be defined generally as: “It is one of the modern computer sciences that seeks for sophisticated methods to program it in order to carry out similar actions and conclusions similar to those methods that are

attributed to human intelligence, even if within narrow limits. (British Arab Academy of Higher Education 2022)

The Czech writer Karel Capek was the first to use the term "robot", and he is the first to invent the word “robot” to denote a humanoid robot, and that was in his play written in 1920, which entitled “Global Drawings Robots.” The word “Robot” was derived from the Czech word “Robota.” which means a slave or forced labourer, (Ugo Pagallo, 2013, p.2).

As for the science fiction writer Isaac Asimov, he defines a robot in a simple way as an artificial tool or machine that mimics a human being and is equipped with a computer. He summarizes his definition in the following equation: Robot = machine + computer. (Salamah,2006, P. 10-11.).

I think that the previous definitions have not given an accurate description of robots. As I addressed them in their old concept based on being a machine that can move by order issued by a computer, while modern robots are featured by an independence and ability in making decisions by its own as a result of its ability to learn from its experiences. Hence, these definitions overlooked the features of modern robots.

Therefore, I believe that the most appropriate definition of a robot is that it is "an artificial intelligence machine capable of performing pre-programmed tasks, either with direct human control, or by self- autonomy."

Third Requirement

Types of Robots

There are various divisions of the robot in terms of its ability to control and autonomy, and in terms of the nature of its work. The liability differs according to the damage occurred by the act of the robot, as follows:

First: In terms of its autonomy and ability to control

Incompetent Traditional Robots:

The undiscerned and incompetent robot is an intelligent machine that is capable of judging human reasoning which is unable to act normally. That is, within a weak framework of perception and wisdom in processing information and facts.

It is one of the types of artificial intelligence capable of performing specific clear tasks, such as self-driving cars, chess games in smart devices, and applications of recognizing images and words. By applying the general rules, this incapacitated and undiscerned electronic person remains completely crippled and minor in the lowest level of attitudes due to the weakness of its mental abilities.

So, it is null and void to agree otherwise, such as granting the robot the legal personality to a degree of undiscerned robot which will make it similar to the status of a minor who needs a person to monitor his actions and behaviours, and this person is similar to the human representative who was present when describing the robot as a thing or object, and the weakness of the intellectual faculties of the incapacitated robot does not at all mean an exemption of civil liability; As that liability comes from the existence of an independent financial disclosure and not from the concept of perception and understanding.

Smart Robots (General)

Smart robot has a well-developed artificial brain that can arrange actions according to the purpose and also has sensors and effectors. The Smart robots can be defined as "a humanoid robots capable of performing tasks by sensing their environment and by interacting with outsources, adapting their behaviour, anticipating certain situations and adaptive sensors, which making them autonomous. All of this are within the umbrella of smart robots.

(Ray Jarvis, 2008, Vol. 5, No. 3, p. (23).

The smart robot was also defined as "a mechanical device that perceives the surround environment for itself, recognizes circumstances, and moves voluntarily" (Act No. 13744, 6 January 2016).

Such type of smart well-developed robot is able to work with a capacity similar to the human capability in terms of thinking, as the machine is able to think and plan by its own without human intervention. The approach of the artificial neural network is one of the methods to study this type of artificial intelligence. As this approach is based on the production of artificial neural network systems similar to those in the human body, and this type does not have practical examples, but rather it is just studies that require a lot of effort to be a reality.

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In fact, autonomous robots are operated remotely by a practitioner, as is the case with the da Vinci surgical robot, and the robot cannot be autonomous since the human being remains part of the decision-making process. However, the European Union misses out on those surgical robots, especially in terms of robot safety and training surgeons to use the robot. (Tantawy, 2020)

Super Artificial Intelligence Robots

It is said this type of robot exceeds the level of human intelligence, as it can perform tasks better than a specialized human with knowledge. Such robot must have many features to be considered a super-capable robot. The most important of such characteristics are the ability to learn, make judgments and automatic communication, and this type of artificial intelligence is considered a default that has no an actual existence at the present time (Tantawy, 2020)

Second: Types of Robots in terms of the Nature of their Function

Artificial intelligence is not only limited to the traditional robot, but is used in many fields such as sports, health, education, entertainment, and shopping. (Brian 2019, p. 236).

Accordingly, the liability for the actions of the robot varies as per the diversity of the robot's work. As the nature of its work brings its responsibility, so the liability becomes medical if the robot's mission is in medical field, sports if its function in sports, administrative if its work is administrative job, and other types of liability.

Medical Robot

The medical liability of the robot's action is not limited to substantive issues, but also includes the technical responsibility if the robot performs surgical operations on behalf of the attending physician. In January of 2017, The Dubai Health Authority (DHA) inaugurated on a smart pharmacy with the first robot for dispensing and prescribing medication in Rashid Hospital without any human intervention. This robot is based on high-level technologies and can store up to 35,000 medicines and dispenses around 12 prescriptions in less than

one minute (Dubai Health 15/1/2017). This case fits to the application of the theory of guarding objects liability.

Self-Driving Cars as an Application of Artificial Intelligence

Many of auto companies have piloted self-driving cars so as to deploy the experience and get it a realistic experience. (F. Patrick, 2014, p. 1803).

Self-driving cars run through an artificial intelligence program that gives order to car to move or stop. Such order system is given after receiving data from radar, lasers and sensors devices in the car, which collect data about objects around the car, such as people, road width, nearby cars, and objects surrounding the car. The artificial intelligence program that controls the car is programmed to issue orders after analyzing that data. The most famous accidents occurred by a self-driving car was in 2018 in Tempe - Arizona, when a woman riding her bicycle and hit by a self-driving car on the public road which led to her death. The FBI investigators who examined the accident said that the National Transportation Safety Board (NTSB) did not determine the cause of the accident or issue safety recommendations to prevent other incidents until they announce their final report. To go through this matter, two things become evident:

- It is incredibly difficult designing a car that drives itself.
- Any self-driving cars developer relies on a human factor to monitor their testing systems to keep everyone safe on the road and he has to be very careful about designing such system.

(REPORT SAYS, wired.com, 24.5.2018)

Marine Robot:

It is an Automated Marine Rescue Robot. For instance, Dubai Municipality has introduced a robot lifeguard to rescue beachgoers. The 125cm-tall boat-shaped craft is operated by remote control and can reach speeds of 35kph, or approximately 12 times that of a human lifeguard, once launched into the water. After approaching a person in distress, handles on the side along them to be dragged back to shore. Four to five people can be pulled at the same time and the craft can travel distances of more than 130km, according to reports.

The robot is described as being able to float freely due to its 11kg weight and can carry out up to 30 rescue operations without recharging.

Robot Policeman(Robocop):

The Robocop plays the role of a policeman. In May 2017, Dubai Police has launched the UAE's first Robocop whose job is to liaise with the public. Featuring an "emotion detector," the robot can recognize a person's gestures and body language from nearly five feet away. Robocop's skills don't stop there - the emotionally intelligent bot can detect if a person is happy, sad and even angry by studying his or her facial expression. This Robocop can give a military salute, shake hands, provide service to the public, interact with them, and respond to their inquiries in six different languages. It can also detect the movement of objects and monitor feelings from expressions such as happiness and sadness. (dated 9/16/2022 AD)

Civil Service Robot:

The Kingdom of Saudi Arabia used the robot to provide services to the pilgrimage performers. Hajj Robots achieved a breakthrough in 2022 in helping pilgrims. In November 2014, the Federal Authority for Identity and Emirati Citizenship launched the robot named "Hamad" to delight and serve its customers in its various service centres. The services provided by the robot "Hamad" are renews the ID card, responds to customers' inquiries about the status of their cards, and updates their personal data.

Advisory Robot:

The Smart Dubai Corporation of the Government of Dubai has launched the Smart City Consultant Robot "Rashid", which is the virtual assistant for living and working in Dubai. The smart advisory robot "Rashed" provides comprehensive answers to users about the documents and procedures necessary for their various transactions, such as issuing licenses, permits, visas, setting up companies, entertainment, shopping and others, according to a huge database shared by many of Dubai government departments.

Services Robot:

This robot is designed to carry out service work quickly. On January 11, 2022, the General Presidency for the Affairs of the Two Holy Mosque launched Zamzam water robot within a program called "How to be a good model in the digital world"

(visit date 9/14/2022). In February 2019, the United Arab Emirates was the first to launch a robot cleaner.

The Roads and Transport Authority in Dubai started using the service robot to clean metro stations. This robot provides high-quality services as it has been programmed to clean and sterilize floors in accordance with the rationalization of water consumption and without the need for any human intervention. (Date of visit 9/11/2022).

Through a review of aforementioned applications, it shows the importance of having a legislative law that regulates the work of robots as well as regulates liability for compensation for damages sustained of their operation.

Second Chapter

Elements of Tort Liability of an Action of Robot

Introduction and Partitioning

Liability of robot's act cannot be existed except by fulfilling the elements of tort liability. However, in order for such elements of liability to be fulfilled, there must be an error, damage and the causal relationship between the error of the robot and the damage sustained by its action. Therefore, I will divide this chapter into three requirements which are as follows:

First Requirement: Faults made by the robot

A robot's fault is a harmful act, and the physical act constitutes the first element in the liability elements that lead to damages. Such act may be made intentional or unintentional. Thus, since the robot is not recognized as a legal personality, so it is hard to describe a robot as such at least at for time being. The France court rulings have considered the concept of actual guarding object, so the court assumed that the owner of the thing is the guardian responsible for the damage that befalls others, which facilitated a lot the burden of proof on the harmed person. Then, the one who is described as the perpetrator of the error is the guardian / owner of the robot. Thus, even the responsible for the damage caused by the robot may be various between the factory and the controller of the robot.

Therefore, we believe that if there are multiple persons involved in an unlawful act, they shall be jointly liable in their obligation to answer for the

damages sustained and pay compensation without discrimination between the original perpetrator, the partner and the culprit. The payment of compensation is due to each of the rest via a proportion determined by the court according to the circumstances, and as per the severity of the infringement committed by each of them. If it is not possible to specify the proportion of each of them in the liability, the compensation shall be equally paid by them.

Islamic jurisprudence has defined this case and differentiated between two cases for joint responsibility in the case of a plurality, particularly if it is a joint act by them in its kind and strength, the guarantee is upon them equally. As for the second case: If it is a joint act in its kind but different in strength. The Hanafi Scholars adopted the process of reasoning (analogy) by taking the effective reason, and it is better to take all the reasons. It can arguably be said that this differentiation shows the presence of the legal basis of the difference between the configuration guarding and the use guarding in the event of plurality guarding. (Zarqa, 1998 113)

The faults made by the robots are considered one of the contentious and sensitive issues, as making the robots responsible for their actions will raise a question about describing the act of the robot as an intentional act and error that leads to responsibility. In other words, can the robot be held accountable for an unintentional act under the concept of negligence, lack of precaution, or forgetfulness? meaning, can the machine slip up or forget?

The answer is definitely being the machine cannot slip up or forget, because this will lead to a reconsideration of the traditional adaptation of the concept of error that requires accountability through considering the machine having the same human features represented in awareness, will, intention and error. As all of this has not been proven with respect to robots until now due to the lack of the robot's awareness of the risks and seriousness of its action, or its compliance or non-compliance with the law.

As the law that robots operated by is in their neural and linguistic programming, and not the law of humans. The concept of intentional and unintentional in error are purely human concepts that robots cannot perceive up to date, and will not be able to in the short term at least to realize that. (Al-Khatib, 2018, p. 123- 125.).

The Islamic jurisprudence made the guarantee to replace the fault and the guarantee is taken with a broad sense not limited to the concept of civil liability only, but also to criminal responsibility as well. It is also taken in the sense of guarantee, and the basis on which liability for machinery is based in Islamic jurisprudence when there is no infringements or error. Accordingly, the direct cause of the damage is requested even if he did not transgress, just as the one who caused the damage is questioned if the infringement committed by him was intentional or not.

So If the destruction of the property and lives of human beings is based on a direct and indirect cause, then the guarantee is attached to the direct cause rather than the indirect cause, unless the direct cause is based on and arising from the indirect cause whether it is out of hand or not. As for the case in which there is no intentional aggression entirety, the direct cause is solely responsible for the guarantee, and if there is intentional aggression, the direct and indirect cause share the guarantee. (Ibn, Rajab, 1352 AH, p. 285)

Applying the law of tort liability to artificial intelligence confronts many challenges. As the courts have to realize liability requirements arising from the actions of artificial intelligence, as well as determine the legal or natural person responsible for the damage caused by such actions. As the person is not only liable for the damages resulting from his own action, but also for the harm caused by the actions of the people that he is responsible for or the things under his responsibility. Since artificial intelligence cannot be considered a person, some Islamic jurists consider that applying the theory of liability for guarding objects or things is an appropriate in this case.

Therefore, whoever assumed the responsibility of things whose protection requires special care, including mechanical machines, will be liable for the damage caused by such things, unless it is proven that the damage occurred because of any other foreign cause that he had no hand in it. This indicates that the legislator intended with this text to ward off an injustice that may befall a group of those affected. So it was not required that there was an error on the part of those responsible for compensation, and imposed upon everyone created something dangerous and benefited from it to bear the consequences of the damage that results from this thing, whether he is an owner or not, so the guard of

such thing held this responsibility. As it is based on a supposed error and it is sufficient that the injured party to prove that the damage occurred because the act of the thing. The person liable does not have the right to defend responsibility unless he proves that the damage was due to an another foreign cause that he had no control over.

The theory of liability for non-living things, the legislator assumes the presence of the error based on a presumption that he presupposes and considers it sufficient to establish liability. The legislator, through the presumption, makes the potential or possible thing exist, and the presumption that he established is the "legal presumption," which is either conclusive and not subject to prove the opposite, as the wrongdoer can only refute it by a foreign reason, or non-conclusive, capable of proving the opposite, where the erring person can negate it either by proving that he has taken the due diligence and necessary care or prove it by interfering of a foreign cause out of hand (Saad, Nabil, and Qasim, Muhammad, 2010, p. 202)

However, this does not preclude the robot's fault being caused by its user, for instance, if the driver of the self-driving bus uses its electronic board incorrectly.

Robot's Operator Fault: It is expected that if there is an error in programming robot operation will result in harm to others. If the robot designer, i.e. the programmer, and the robot operator are two different people, then a question arises, if the designer did what must be done, or is the error made by the operator? For example, as an error made by drone operator.

Faults of Robot's Manufacturer or Designer:

A manufacturer or designer error usually appears when there is a fault in manufacturing or when there is a careless in maintenance, as an error in the manufacturing or maintenance of a robot results in great damage, for example when there is an error in manufacturing a self-driving car etc., it leads to a great damage. (Al-Wali, 2021). pp. 54-55.)

As a result of the robot's error, questions are raised about the natural or legal person who has actual control of the robot. As it is difficult determining the robot controller who has actual control over it at the time of damage as these things are of a complex nature.

In this regard, a distinction must be made between the foregoing use guard and the composition or configuration guard. The configuration guarding: it is established for the manufacturer of things of a complex nature, as is the case with robots, where guarding these things is left to the factory that has the functional information of the product more than the user and the owner, but this distinction makes it difficult from a practical point of view for the injured or affected person, represented in determining the cause of damage whether it is due to the components of the thing "poor manufacturing" or to the error of use, and that shall be before filing the lawsuit.

Thus, the configuration guard overlooked the basic benefit for which the liability for things was based, represented in exempting the harmed from proving the cause of the damage by assuming the guard's fault, and the owner or user cannot be considered a guard.

Establishing the liability of guarding of the thing requires that the guard is to exercise the authority of direction, monitoring and control, and this is not met or recognized in the field of robots that are based on artificial intelligence, which makes them have independence that contradicts the concept of guarding based on actual control and actual possession of the thing or assumed possession. In the field of robots, there is no transfer of guarding, but rather it is completely abolished. (Abdul Razzaq, 2020, pp. 23-25.)

Second Requirement

Damage Caused by a Robot

The damage or harm means everything that is opposite to benefit, and which means also wasting and bad condition. Damage is also referred to sense of deficiency that enters into the thing (Ibn Daqeeq al-Eid p. 106).

Accordingly, it is natural that a wrong action of the robot might led to harm to others, and based on the Islamic jurisprudence opinion stated that the person is obligated to compensate for the damage occurred by his mistake, even if he is incompetent. Therefore, the liability should be applied to the incapacitated robot. It was narrated from 'Ubadah bin Samit that the Messenger of Allah Prophet Mohammed Peace and blessings be upon him said: "There should be neither harming nor reciprocating harm." (Ibn Majah, 2341). Another prophetic narrated by Abu Sirmah (may Allah be pleased with him) reported

that the Prophet (may Allah's peace and blessings be upon him) said: "Anyone causes harm to a Muslim will be harmed by Allah, and anyone causes hardship to a Muslim will be caused hardship by Allah."

Thus, if we ignore the provisions and rulings of Islamic jurisprudence on the actions of a robot, we find it goes to an endorsement that the person in charge is obligated to compensate for the damage arising from his wrong action, even if he was undiscerned, and accordingly applying of liability on an undiscerned robot. Therefore, the injured or harmed person has the right to claim civil liability for the actions of the undiscerned robot against the controller of the robot as a result of the establishing the capacity of monitoring the robot, or claiming the liability on the robot itself as an undiscerned person, as the European Union indicated that such action can be made against the robot in the event that the robot can make decisions independently and by his own.

Therefore, we can say that the usual rules are not sufficient to determine the civil legal liability for the damage caused by the robot, because it does not help us identifying the party held accountable and responsible for paying compensation and repair the damage occurred.

(Resolution of the European Parliament on February 16, 2017) (Résolution du Parlement européen du 16 février 2017).

There is no disputing between Islamic jurisprudence and law regarding the right of compensation for damage, whether it is in tort liability - the harmful act - or in the contractual liability - the contract. (Al-Khafif, 1971, p. 20).

Rather, the dispute lies in the type of damage, as legal scholars believe that there should be compensation for financial damage and moral damage, and for any loss or loss of potential gains. While the jurists of Islamic legislation and the opinion of the majority of them believe that compensation should be for moral harm. As for the advanced jurists, they did not address it, while the contemporary jurists differed greatly in it, stating that the person is not only responsible for the damages resulting from his personal action, but also for the damage resulting from the act of the people that he is responsible or about the things in his possession, and that is one of the characteristics of Islamic Sharia that it gives right of compensation for

the damage regardless of whether the person responsible is discerned or not.

Some jurists believe that the liability rule can be applied without error to the damages resulting from robots, for consideration that they are dangerous activities of an exceptional nature, provided that they must also applied to all dangerous activities resulting from scientific and technological progress. Based on the fact that the risks of these robots lies in the difficulty of penetrating them, in addition to being very complex. as proving an error or a mistake in this matter is not only difficult but also impossible to spot or determine it. Add to that, the robots' ability to move poses more risks. As It is conceivable that a delivery robot could move out of its owner's possession and cause harm to others. (P. Opitz, 2019, p.23).

Third Requirement

Causal Relationship Between Robot's Act and the Damage Sustained

No liability unless there is a causal relationship between the error and the damage sustained, as well as the need to prove the relationship of the damage with the act that caused it. The burden to prove the causal relationship between the damage and the action in order to deserve compensation is the responsibility of the person affected by the robot.

As every mistake is committed and causes harm to others, a compensation must be paid by the one who committed it. To apply this, there are two trends in jurisprudence regarding the issue of the causal relationship between the robot and its guard (controller), which are as follows:

First Trends: It tends that the robot guard has no liability; as they consider the robot's work as force majeure, which constitutes one of the reasons for the absence of civil liability due to the existence of an incident of the causal relationship, as it is an essential element for its establishment.

It states that the moment this artificial intelligence device is created; it becomes independent from all those who deal with. Hence, the robot must be held responsible. It is also taken into account that the concept of autonomy for artificial intelligence is introduced from two main points: one of them is declared, and determined in the decision taken, and the second is hidden, represented in the mechanism of reaching this decision. as the decision came

independently and unexpectedly, the procedural mechanisms to reach this decision follow the same capacity; Hence, this selectivity in decision that reaches the state of being unpredictable by humans makes the decisions of artificial intelligence and robots unpredictable to humans, and unavoidable which fulfils the terms of establishing the force majeure incident.

(Katherine Sheriff, Defining Autonomy.2015. M. Zalnieriute, Pp. 397-424).

Second trend: It is in contrast to the first trend. It rejects the concept of releasing completely the robot guard or artificial intelligence from any responsibility based on the theory of force majeure; This is because artificial intelligence or a robot is inherently based on unpredictability. (Al-Khatib: 2020, p. 139)

Accordingly, the rules of guarding things on civil liability resulting from the mistakes of the robot, which means that the guard of the robot will bear a very heavy civil liability, though the robot is technically autonomous and has the ability to avoid dangers, but still its guard will be questioned about any damage coming from its supposed operation without a need to prove the fault, so that this liability can only be defend by proving the foreign cause, which is confirmed by the European Civil Law Rules on Robotics by stating that the robot cannot be held personally liable in civil tort; rather, the human representative alone bears the liability for all damages caused by humanoid robots. So that if the robot causes harm to someone, it is not justified to hold the robot personally accountable, rather, the harmed person has to file a claim against the owner in order to obtain compensation for the damages he suffered as a result of the act of robot.

Third Chapter

Recognition of Legal Personality to Robot

First Requirement: Extent of Personal Consideration of a Robot

The law only recognizes the existence of the natural person and the legal person, as it gives each of them a legal status consisted with their nature and privacy. (Tantawy, 2020).

Does the law's statement of the concept of legal personality include robots, or is it possible to extend the law's statement to give robots legal personality?

There is no philosophical approach to exclude robots from the scope of legal personality. As personality was limited to a person in the past, and there is no personality except for him, knowing that this personality, despite its association with humans, was not granted to all people, but only to those who recognized by law as a human being, because the slaves at the time of slavery did not enjoy the legal personality despite the realization of the characteristic of humanity in them, as they were counted in the rule of things.

Hence, the separation between the natural personality and the legal personality began, by saying that if the natural personality was granted to the human being as a human being, the legal personality was granted to him as being qualified to acquire rights and assume obligations. So, if he is free, he acquires the natural personality, and if he is qualified to acquire rights and assume obligations, he acquires legal personality. Therefore, the basis for determining whether or not to acquire legal personality is not just having a human capacity, but rather the ability to acquire rights and assume obligations, hence the concept of the legal personality of the legal person emerged. (Al-Khatib, 2020. pp. 114-116)

This concept does not conflict with Islamic jurisprudence, which establishes the liability based on the rule that every harm to others obliges a compensation for the damage upon the perpetrator, even if he is not undiscerned. As this is a purely material incident that entails liability, i.e. compensation to the harmed party whenever it occurs, regardless of the type of eligibility or capacity of the aggressor and its intent. For example, in guaranteeing funds, there is no difference between intention and accidental, nor between old and young. (Al Qurtubi, 1333 AH, p. 211; and Al-Bahooti, 1319 AH, p. 99).

This gives room for an expanded interpretation of the concept of responsible for damage, especially the growing urgency in European legislation to grant artificial intelligence electronic personality as a kind of legal personality based on the physical presence of robots, and thus the possibility of holding them accountable for their actions.

Second Requirement: Implications of Recognizing Robot of Legal Personality

The concept of the legal personality emerged based on the material existence. Several Western legislations recently recognized the legal personality of the animal. (Al-Bakoush, 2020, p. 22.)

As the physical existence of robots takes them out from the circle of legal personality that based on virtual existence, not physical existence. Is it possible to grant robots legal personality rather than humanity based on their physical existence, as they are material and tangible objects that are not of blood and flesh? (Al-Khatib, 2018, p. 118). Through the aforementioned review, it appears that it is possible philosophically to grant robots legal personality based on their physical existence:

First: Legal Impact

The Robots must first have the legal personality in order to be able to hold them accountable. As having enjoyment of rights differs from the assumption of obligations. Having of rights does not presuppose the enjoyment of a legal personality, as is the case with regard to duties in which it is necessary to a person to have a full legal personality. For instance, the boy and the insane are proven to have rights while they are not bound by duties, as rights do not equate to duties with regard to having legal personality. (Al-Khatib, 2018, p. 118.)

In this regard, the European circular of the rules of civil law regarding robots was issued on February 16, 2017 (mentioned above), as a kind of prelude to granting robots legal personality in the future, as this law abolished the description of the robot as a thing or an object. (Al-Bakoush, 2020, p.23).

Furthermore, the European legislators has set a number of legal controls as a condition for granting the robots the electronic personality in the future, which are as follows:

- (1) Having a digital sequence that includes the robot's name, surname and ID number
- (2) A box that contains all the robot's information,
- (3) establishing an insurance fund for damages that the robot may cause and to be financed by several categories. (Al-Muhairi, 2020, pg. 40.)

The fact is that these controls are just proposals that have not been applied up to date. As after three years, a decision was issued by the European Committee concerned with accepting patent

applications, has refused to register a patent for what was produced by the "Davis" robot, due to its lack of legal personality.

Accordingly, robots under current legislation does not have legal personality, but this does not mean that it cannot be held accountable, particularly since the recognition of legal personality in many governments was made by the judiciary for entities that would not have legal personality had it not been recognized by the judiciary, such as the French judiciary's recognition of the moral personality of bodies for the protection of legitimate interests, and therefore, the lack of legislation is not an obstacle to recognizing the legal personality of a robot (Al-Bakoush, 2020, p. 23).

How true is this consideration of a robot as a legal entity that can be treated as companies with a legal personality?

In fact, robots seem outwardly similar to companies, because each of them is an entity that does not have a natural existence, but in reality robots differ from companies, because the company, whatever it is, is managed in the end by a natural person approved and legalized by law, therefore, it is given the moral personality, in addition to the fact that the companies' eligibility and capacity is not absolute, as they are subject to the principle of personalization, as their eligibility and capacity is restricted to the purpose of their establishment, and therefore the companies remain subject to human management, control and ownership (Al-Qusi, pp. 25-26).

As for robots, especially those having complete autonomy or semi-independent in decision-making are managed by an absolute simulating mechanism that is not subject to human intervention, and its ability to learn from experiments and interact with the surrounding environment which makes them to act, make decisions and implement them independently in the outside world (Europarl 2017).

However, I agree with the opinion stating that it is not permissible to establish the recognition of legal personality to companies as the recognition of the legal personality of robots, not even as a reference because there is no legal, factual or logical basis for comparison between the companies and robots. As we mentioned above that the legal persons are managed and supervised by a natural person, who represents them and bears some of their obligations

if necessary, while robots, according to their autonomy, will manage themselves. However, I believe, at the same time, that granting robots legal personality has its merit, but far from comparing them to companies. Therefore, the question arises about the feasibility of granting robots' legal personality in the scope of assuming civil responsibility, or not? Which I will cover as follows:

If the robot is recognized as having legal personality, is this condition sufficient for liability? and if it is not enough, what is the purpose of linking them?

The purpose of granting robots the personality in general and legality in particular to be able to hold them accountable is a useless idea, since the basis of liability is the awareness and perception of the legality and illegality of the act, and that is not realized in robots, which makes their accountability for their personal acts unfulfilled, and releasing them from every connection with humans and equating them with the man is a very serious step that will result in withdrawing the sanctity of the human being, as well as depriving the human being all the elements of exclusivity and uniqueness granted to him by the creator and make human being highest aspirations is to simulate and reproduce the machine.

From my point of view, I believe that granting robots a liability within the principle of the unity of the financial liability of the owner, compared to the owner of the commercial store, who has one financial liability, which part of it is allocated to his store, so the owner, manufacturer, designer, or user of the robot as the case may be, has the right to profit and benefit from such robot as a beneficiary. On the other hand, he bears any damage that may result from the act of the robot, as an application of the rule of "substantial advantage or disadvantage or privilege must be paid for " (Al-Zuhaili 2006, p. 543; Al-Suyuti: 235; Ibn Al-Najim: 151).¹

" It means the services or benefits given or provided by the robot, it returns and revenues are earned by the beneficiary, so the damages it caused by the robot must be also borne by the beneficiary".

¹The "substantial advantage or disadvantage rule" is a jurisprudential rule that means what is required of a person in terms of compensation and consequences that are in exchange for the benefits he obtains . See the explanation of Majallat al-Ahkam: Volume: 87 p.: 79.

Al-Shuba by Al-Suyuti: 235, Ibn Al-Najim: 151, Al-Wajeez: 313, Al-Qawa'id by Al-Nadawi: 411.; And see: Al-Zuhaili, Muhammad Mustafa, "Jurisprudence rules and their applications in the four schools of thought", Dar Al-Fikr, first edition, Damascus, 2006, Part 1, Rule No. 97, p. 543.

Philosophical Impact

Establishing a legal status for a robot requires a recognition of its legal personality, and is not everyone having a legal personality is considered legally responsible for an action committed by him. As a person with lack of legal capacity does not have civil responsibility though he has a legal personality, while a competent person enjoys legal personality and civil responsibility. Let's contrast that on artificial intelligence – the physical bearer "natural person" with the legal bearer "legal personality" constitutes a competent sane legal personality capacitated of accountability. However, and as soon as the physical bearer loses the rational dimension represented in perception, awareness and competency "i.e. actual bearer of legal responsibility," he is released of legal accountability, although he still enjoys the legal personality "the legal bearer." Although this will be described as "direct liability for the personal act," and this responsibility is based on direct or indirect personal error, and is based on the concept of personality in establishing accountability. (Khalaf, 2016, p. 11)

It is incorrect to link legal responsibility to legal personality, because it is separate from legal responsibility, at the same time the opposite remains not correct. In 2017, a part of the medical jurisprudence of brain and neuroscience confirmed that artificial intelligence's imitation of the human methodology in thinking and decision-making makes the current legal interpretation weak and deficient, and opens the gate for the concept of a virtual personality in the future (KARANASIOU, That the natural legal personality is granted to the physical entity of man regardless of his being discerned and understanding, and this is a sensitive and complicated matter for the report.

Thus, linking legal responsibility to legal personality is incorrect, because not everyone has legal personality is considered legally responsible for his actions.

A person with a lack of legal capacity has legal personality and independent financial responsibility even though he does not have civil responsibility. This does not mean that such persons are exempted from liability at all. Rather, the burden of this responsibility is transferred to the person responsible for him /her and required for compensation in case of damage. Therefore, it is necessary to address the possibility of granting the legal personality to the robot that will enable it to be legally questioned. Jurisprudence and the judiciary agree that in the absence of a representative or a person legally responsible for a person of lack of legal capacity and physically, not legally, responsible for an act he committed, that he can be held accountable in light of the rules of exceptional civil liability, as a precautionary responsibility.

Third Requirement:

Evaluating the Connection between the Legal Personality and Liability of the Robot

If legal liability requires possessing a legal personality, does the legal personality require the establishment of legal liability? The principle is the connection of both legal personality and liability, but the link between them is incorrect because the legal personality is separate from the latter while at the same time the opposite remains correct, because not everyone who has legal personality is considered legally responsible for his actions.

An incompetent person, like a madman, possesses legal personality despite his lack of civil liability, while a sane person with a legal capacity enjoys personality and liability. Let's contrast that on robots - the physical bearer "natural person" with the legal bearer "legal personality" constitutes a competent sane legal personality capacitated of accountability, and as soon as the physical bearer loses the rational dimension represented in perception, awareness and competency "i.e. actual bearer of legal responsibility," he is released of legal accountability, although he still enjoys the legal personality "the legal bearer."

This does not mean that the harmed person has no right to compensation, so he may recourse to the person responsible for the perpetrator of the harmful act, as the physical bearer, "natural person" when lacks the legal factor that requires liability "rational dimension", does not mean releasing him absolutely of the liability, and it does not void the right of the

harmful person to claim compensation, but rather it is limited to transferring the burden of liability and compensation to the person responsible for the incapacitated person.

In the event that there is no person responsible for the incapacitated person, the latter is held accountable based on the rules of exceptional, mitigated civil liability of a permissive nature for the judge. By contrasting the foregoing on whether or not robots can be held accountable for their actions, we will find it collides with the lack of a legal personality within that (Al-Khatib, p. 119, 121).

I believe that the modern trend seeking to grant robots legal personality has a more distant justification and goal, which is to create an independent financial liability through which it will be competent and eligible for accountability and reparation, as is the case of an incapacitated person, whose accountability is only established if he has an independent financial liability in the absence of a person responsible for him.

Prohibitions of Connecting Legal Personality with Legal Liability.

If personality is closely connected with liability in humans, then the matter is different with regard to robots. In the case of humans, it is not possible to separate the moral element represented by the mind from the physical bearer, which is the human being in the establishment of traditional civil responsibility.

As for the robots, the matter is possible and even simple, as it is done via installing the moral element that runs the robot on the physical bearer that is formed like a human or an animal, and here raises the fear of the decline of the concept of legal personality, and this matter prompted many jurists to limit the granting of legal personality to robots whose structure mimics the human body, although all of them remain in the end a mechanical structures whether in the form of a human or an animal.

In fact, the emotional engagement to the structure that simulates the human body may be the reason for tending to grant the robot legal personality, not because of being smart or intelligent.

Here, a bigger issue arises, which is whether the legal personality is granted to the physical structure of the robot that simulates the human body or to the artificial intelligence that runs it. As the natural legal

personality is granted to the physical bearer represented by the living human body, regardless of the concept of intelligence and perception, as he has the capacity for obligation, which is based on life as soon as he is born alive.

And this matter has not been previously raised in human intelligence, because the physical bearer of intelligence is always attributed to one, which is the human being. It is absolutely impossible to attribute intelligence for others, unlike artificial intelligence in robots, whose physical bearer can be in the form of a human or an animal as it is not recognized as a legal personality (Al-Khatib, p. 119, 121.)

Conclusion, Key Findings & Recommendations

This study examined the issue of tort liability for the damage caused by robots. The study was divided into three chapters. The first chapter was on the definition of robots and their types. Then, in the second chapter, it is about the elements of tort liability for damages caused by robots, and the third chapter addressed the issue of granting a legal personality of robots, as the study examined the legal rules of liability in accordance with the traditional theories represented in the traditional theory of liability, and the modern theories represented in the theory of human representative introduced by the European legislator, and the theory of recognition the legal personality of robots. Then the study reached important findings and recommendations, which are as follows:

First: Research Findings:

1. The general rules of Arab laws are inappropriate for addressing the issue of civil liability for damages caused by robots and its necessity to be updated in line with recent development of robots.
2. Most Arab laws have not regulated as yet the civil liability for damages resulting from robots, though widely used and prevalence in various fields.
3. The advanced types of robots are featured and characterized by their ability to learn and adapt to the variables around them, as well as their ability to make decisions independently, but the traditional rules of liability are unable to address the legal facts.
4. Legal jurisprudence goes to the establishment of civil liability for damages of robots to

several theories, including traditional and modern theories, and both of them are not fit to establish the tort liability of robots.

5. European jurisprudence adopted modern theories to establish robot civil liability for damages which is the theory of human representative, and the theory recognizing legal personality of robots to replace the traditional theories that establish civil liability of robots' damages which is theory of guarding objects liability, and the theory of legal certainty of the Master on the work of his /her subordinates (Master-slave basis).
6. European law has not produced a significant or an essential change in the civil law of robots issued in 2017. In fact, the law is not far from the concept of guarding objects theory in establishing civil liability for damages caused by robots.
7. The jurisprudence rules of Islamic law, represented in the sharia legitimacy rule stated that "there should be neither harming nor reciprocating harm", and the rule "privilege must be paid for and substantial advantage or disadvantage ". The rule is not requiring the capacity and competency, to bear the consequences of the damage, as the most appropriate and fairest to compare or apply it to the liability of the robot as a product of human action.

Second: Recommendations &Proposals

- 1- Draft special law and legislation of robots, by each of specialists of artificial intelligence and jurists and to be prepared in accordance with the rules of civil liability, changes of the times and the artificial intelligence system, on the basis of the Sharia legitimacy rule "there should be neither harming nor reciprocating harm", and the rule "privilege must be paid for and substantial advantage or disadvantage "
- 2- Urge the judiciary to make the robots' act are subject to theory of legal certainty of the master on the work of his /her subordinates (Master-slave basis) as is the case, means according to the person of the beneficiary, taking into account the profit and benefit from the robot, and in return to bear the damage caused by the robot, on the basis of the rule "privilege must be paid for".
- 3- Drafting a regulation that obligates workers in the field of artificial intelligence to comply

with technical and professional standards ensure that robots remain machines merely serving mankind, and at the same time support development and achieve the strategic goals of the state.

- 4- Urging jurists to put in place a jurisprudential foundation in the field of liability resulting from artificial intelligence in order to ensure legislation keeps up with these developments and present a legal proposal that covers that liability in accordance with the Sharia rules of liability.

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Abbreviations List

D.	Recevil
dalloz	
Gaz.Pal	Gazette des Palais
J.C.P.	Juris-Classeur Periodique (la semaine juridique).
Bull.	Bulletin des arrest du la cour de cassation
Bull. Civ.	Bulletin Civil
Cass. Civ.	Cour de Cassation, chambre Civile
Cass. Cim.	Cour de Cassation, chambre Criminelle

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