

LEGAL CONSTRAINTS ON CIVIL LIABILITY RULES APPLICABLE TO ARTIFICIAL INTELLIGENCE TECHNOLOGIES

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Abstract

The accelerating development of artificial intelligence poses a new and formidable challenge to the existing rules of civil liability, whose fundamental purpose is to compensate injured parties for harm suffered as a result of fault or a breach of legal obligation. As intelligent systems become increasingly integrated across diverse fields, the need has emerged to adapt current legal frameworks so as to encompass the damages arising from the actions of these non-human entities. Against this backdrop, multiple theories of liability attribution have come to the fore: liability arising from contractual relationships; the vicarious liability of the principal for the acts of its agent; the treatment of artificial intelligence as a thing subject to the custodianship regime; and the imputation of liability to either the producer or a designated human proxy.

Keywords: Legal Constraints; Civil Liability; Artificial Intelligence; Harm.

Introduction

The digital transformation driven by artificial intelligence has become one of the most widely discussed concepts of our era, representing a sophisticated technological application designed to emulate human intelligence through a suite of software programs and algorithms capable of simulating intelligent human behavior. The deployment of this technology has consequently become a lived reality in contemporary society, imposing an imperative to reconfigure existing patterns of life in order to address a wide array of challenges — foremost among them the legal challenges, and particularly those relating to civil liability in circumstances where such technology causes harm to third parties. This in turn necessitates the identification of the responsible party within the framework of traditional theories of civil liability.

Against this background, the central research question of this paper may be formulated as follows: Are the traditional rules of civil liability adequate to address the harms arising from the risks posed by artificial intelligence? In order to answer this question, the authors have adopted a descriptive-analytical methodology, suited to the nature and particularity of the subject, which allows for the elucidation of the various legal provisions and texts relevant to the topic and their systematic analysis.

The aim of this study is to shed light on the civil liability rules applicable to users of artificial intelligence as embedded in traditional legal provisions, and to assess the extent to which those rules are adequate to keep pace with the evolution of these systems.

The study is structured around two principal sections. The first examines the legal constraints governing traditional liability in the domain of artificial intelligence. The second addresses the novel legal frameworks proposed as the basis for civil liability in this domain.

1. Legal Constraints Governing Traditional Civil Liability in the Field of Artificial Intelligence

Civil liability is a legal mechanism for the reparation of harm, whether that harm is caused by the personal act of the responsible party — as the general rule — or under the exceptional liability arising from the act of another. The advanced capabilities of artificial intelligence, its capacity to act autonomously, and the difficulty of controlling its behavior have in certain cases rendered it a source of risk. This reality bears directly upon the legal framework for identifying the party responsible for harm caused to third parties by this technology, and raises the question of whether traditional theories of civil liability are appropriate instruments for addressing the harms generated by artificial intelligence.

1.1 Types of Civil Liability

Civil liability is generally defined as the obligation of the debtor to compensate for harm arising from their breach of an obligation incumbent upon them.¹ It is divided into contractual liability, which arises from breach of a contractually generated obligation, and tortious liability, which derives from the law. This is the general rule upon which traditional civil liability is founded. The question thus arises whether these rules can be applied to address the harms generated by artificial intelligence technology.

1.1.1 Contractual Liability

The basis of contractual liability is the obligation of all contracting parties to fulfill the commitments they have undertaken. Any breach of the terms of the contract obliges the defaulting party to compensate the injured party. The parties to a contract may be either natural or legal persons, and no particular difficulties arise in applying the rules of contractual liability when its conditions are met. The more complex question is how to apply this framework to artificial intelligence systems as a modern source of harm in circumstances where those systems form part of a contractual relationship — which is the matter to be addressed in the following analysis.

➤ Conditions for Contractual Liability.

Two essential conditions must be satisfied for contractual liability to arise: the existence of a valid contract, and a causal link between the breach of the contractual obligation and the harm suffered by the injured party.²

Valid Contract. A valid contract must exist between the responsible party and the injured party. In the absence of such a contract, contractual liability cannot arise. If the contract is void or voidable, the liability in question will be tortious in nature, since the annulment or rescission of a contract operates with retroactive effect, and compensation for harm will accordingly be grounded in the rules of tortious liability.

Breach of a Contractual Obligation. It is a condition for contractual liability that the debtor breach one of the obligations arising under the contract, whether that obligation is expressly stipulated or is implied as an incident of the contract pursuant to Article 107(2) of the Algerian Civil Code.³

Harm. The existence of a valid contract between the party liable for harm and the injured party is not sufficient to establish contractual liability. It is additionally required that the harm suffered by the injured party be the consequence of the non-performance of the contractual obligation, regardless of whether the obligation breached is primary or secondary, whether it arises from legal provisions or from the terms of the contract. The creditor bears the burden of proving the harm as a general rule.⁴ In the context of artificial intelligence systems, harm may arise through the modification or alteration of systems and data without the knowledge or consent of the beneficiary.

Causal Link. The causal link denotes the requirement that the fault constitute the direct cause of the harm. In the context of artificial intelligence technology, the burden rests on the injured creditor to establish the connection between the contractual fault and the harm, by demonstrating that the harm was the product of a breach of a contractual obligation. The debtor may, in turn, rebut liability by negating the causal link through proof of a force majeure event, an act of a third party, or contributory fault on the part of the injured party.⁵

¹Belhadj al-Arabi. [The General Theory of Obligation in Algerian Civil Law], Vol. 2: [Legal Acts] – "Unlawful Act, Unjust Enrichment and the Law." Office of University Publications, Algeria, 2016, p. 7.

²Muhammad Abd al-Razzaq and Wahiba Sayyid Ahmad. "Civil Liability for Damages Caused by Artificial Intelligence: An Analytical Study." Jil Journal of In-Depth Legal Research, Jil Scientific Centre, Lebanon Branch, Vol. 5, No. 43, 2020, p. 153.

³Article 107(2) of Order No. 75/58 of 26 September 1975 comprising the Algerian Civil Code, as amended and supplemented by Law No. 07/05 of 13 May 2007, Official Gazette No. 31, issued 13 May 2007.

⁴Ali Filali. [Obligations: The Act Giving Rise to Compensation], 3rd ed. Mofem Publishing, Algeria, 2015, p. 23.

⁵Muhammad Sabri al-Sa'di. [The Concise Commentary on the Civil Code: General Theory of Obligations – Sources of Obligation, Contract and Unilateral Will]: A Comparative Study of Arab Laws. Dar al-Huda, Ain Milila, Algeria, 2012, p. 318.

A further distinction must be drawn, in the context of artificial intelligence, between the obligation to achieve a specific result and the obligation to exercise due diligence. In the latter case, the debtor is required only to exercise the requisite care, regardless of whether the expected outcome is achieved. In the case of an obligation to achieve a specific result, the debtor is liable upon the mere failure to achieve it.

➤ **Contractual Liability in the Face of Harms Caused by Artificial Intelligence.**

Various contracts may be concluded whose subject matter relates to artificial intelligence technology. In this regard, it is important to distinguish the two dimensions of artificial intelligence: the intangible dimension — comprising the software programs and algorithms that operate and take decisions without human intervention — and the tangible dimension, which consists of the physical hardware that houses this software. These two dimensions are complementary: the intangible dimension of an artificial intelligence system cannot produce external manifestations of action without its physical carrier, while that carrier is itself a mere inert structure without the governing intelligence that controls its operations.

Artificial intelligence systems in both their dimensions may thus be the subject of a wide variety of contracts. At first glance, the rules of contractual liability appear capable of serving as a solution for addressing harms arising from artificial intelligence, in cases where the party owning the application breaches its contractual obligations through non-performance, delayed performance, or defective performance — provided that the elements of harm, fault, and causal link are established. By way of illustration, if a robot delivered to a purchaser fails to conform to the agreed specifications, the buyer is entitled to terminate the contract on the grounds of non-conformity, and contractual liability accordingly arises where the robot's performance deviates from what was agreed, even in the absence of demonstrable harm. Liability may also arise on the basis of the seller's obligation to warrant against latent defects. However, this approach encounters the inherent limitation that contractual liability is designed for natural persons. Even assuming that contractual parties were to include a clause describing the capabilities of the artificial intelligence and the risks it may generate, the resulting obligation would in all probability be characterized as an obligation of means rather than an obligation of result.

1.1.2 Tortious Liability

The concept of tortious liability rests on the commission of an act contrary to law that causes harm to another, thereby giving rise to personal liability and an obligation to compensate for the resulting harm. On this basis, the possibility of relying on the rules of tortious liability to address harms generated by artificial intelligence is examined below.

➤ **Elements of Tortious Liability**

Article 124 of Law No. 05/10 comprising the amended Algerian Civil Code stipulates that harm resulting from fault must be established, together with a causal link between the harm and the fault. When these three elements are present, liability is established.

Fault. Fault is defined as a deviation from ordinary and expected conduct and from the prudence and circumspection that such conduct requires.⁶ Fault comprises two elements: a material element — deviation from the behavior of the reasonable person — and an intentional element — capacity for discernment. Projecting these two elements of fault onto artificial intelligence renders it difficult to conceive of their attribution to such systems, given their complex constitution. Legal capacity for natural persons is established through the passage of defined developmental stages, a process that has no equivalent in artificial intelligence owing to its fundamentally different constitution from the human being, making it impossible to treat it as a natural person despite its capacity for a form of intelligence and perception. The legal person, for its part, is accorded legal personality on the basis of a presumed capacity for discernment and awareness.⁷

⁶Muhammad Sabri al-Sa'di. [The General Theory of Obligations: Tortious Liability]. Dar al-Huda, Ain Milila, Algeria, 2011, p. 31.

⁷Ammar Boudyaf. [The General Theory of the Right and Its Applications in Algerian Law], 2nd ed. Jsour Publishing and Distribution, Algeria, 2017, pp. 97–98.

The intangible nature of the legal entity may suggest a degree of proximity to artificial intelligence, given the latter's non-material character; yet this is insufficient to equate the two, since the legal person has obtained formal legal recognition and its rights and duties have accordingly been regulated, whereas the Algerian legislature has not recognized legal personality in artificial intelligence and its personal accountability is therefore not contemplated.

Harm. Harm is the injury suffered by the injured party as a result of the fault of another. This injury may affect the person's body or property — in which case the harm is material — or it may affect their reputation, honor, or emotional well-being — in which case the harm is moral. Projecting this concept onto artificial intelligence, its characterization as a source of harm is rendered difficult by its intangible nature: as a collection of algorithms and software belonging to the virtual world, invisible to the senses, its location and temporal parameters are indeterminate, creating legal difficulties both in identifying the act that caused the harm and in determining the responsible party.

A further difficulty arises in determining the competent court for adjudicating claims arising from harm caused by artificial intelligence, since the injured party is in principle entitled to summon the defendant before the court of their domicile — an exercise that is impossible in relation to artificial intelligence, given the absence of any geographic location from which it might exercise control. Compensation for harm is warranted only where the harm is certain, direct, and personal, and has not previously been compensated.

Causal Link. The causal link constitutes the third element of tortious liability and denotes the requirement of a direct relationship between the fault of the defendant and the harm suffered by the other party; the fault must itself be the cause of that harm. It follows that artificial intelligence cannot be held personally liable for the harms it generates, owing to the difficulty of identifying the responsible party among the multiple actors who contribute to its existence — the manufacturer, the programmer, and the operator — and of analyzing the causal connection between each party's acts and the harm.

➤ **The Role of Tortious Liability in Addressing Harms Caused by Artificial Intelligence**

In light of the foregoing, it may be concluded that the legislature's conception of personal liability does not encompass these modern sources of harm. Tortious liability is accordingly not suited to address harm caused by an invisible, unpredictable source that differs from traditional causes of harm in several fundamental respects. Personal liability is therefore inadequate for application to the harms caused by artificial intelligence systems to third parties, both because the Algerian legislature does not recognize legal personality in artificial intelligence and because of the distinctive characteristics of the harm it generates compared with traditional harm. The traditional harm is characterized by material causes, a clearly identifiable role for the human actor, and a specific location and time that facilitate its proof. The difficulty of relying on tortious liability as a basis for compensating harms caused by artificial intelligence is further compounded by the burden of proof: under these rules, the burden rests on the injured party, and this is undoubtedly onerous given the increasing autonomy of artificial intelligence systems.

1.2 Liability for the Acts of Third Parties in Response to Harms Caused by Artificial Intelligence

Personal liability for one's own acts is the foundational principle of Algerian civil law, and the party invoking it must establish that the fault originated with the defendant. By way of exception to this general rule, the liability of the custodian of a thing and the liability of the principal for the acts of its agent have been established, relieving the injured party of the burden of proving fault.

1.2.1 Liability of the Custodian of a Thing

Article 138 of the Algerian Civil Code provides: ⁸

“Any person who assumes custody of a thing and has the power to use, manage, and supervise it shall be deemed liable for any harm caused by that thing.”

⁸Article 138 of Order No. 75/58 of 26 September 1975 comprising the Algerian Civil Code, as amended and supplemented.

From the terms of this provision, two conditions are necessary for the liability of the custodian to arise: the thing must be under the custody of a person at the time of the incident, and it must cause harm to a third party. Applying this to the harms caused by artificial intelligence requires inquiry into whether it may be regarded as a thing, and whether the concept of custodianship is applicable to it.

➤ **Artificial Intelligence as a Thing**

Under Article 138, a thing is any non-living material object, regardless of its nature or type. The physical carrier of artificial intelligence — such as smart machines — may without difficulty be classified as a tangible thing with a material mode of action.⁹ However, artificial intelligence in its strict technical sense falls outside this framework, since non-living things are by definition static and incapable of autonomous movement — a characterization that does not apply to artificial intelligence. Its physical carriers, such as robots and autonomous vehicles, transcend the realm of inertia and enter into motion; and artificial intelligence in its strict technical sense operates in continuous movement within the virtual realm, with the inherent capacity for autonomous analysis, learning, and decision-making.

➤ **The Concept of Custodianship and Artificial Intelligence**

Custodianship denotes the actual control of the custodian over the thing in their charge, comprising powers of use, management, and supervision. Projecting the concept of the power of use onto artificial intelligence, it may be said that such power consists in the deployment of the system to perform tasks across a range of domains — for example, the use of autonomous vehicles as one application of artificial intelligence for the purpose of achieving faster, more efficient, and more cost-effective transportation. The power of management, by contrast, consists in the issuance of instructions by the party with powers of use over the thing — a concept that is in tension with the functional autonomy of artificial intelligence in decision-making, which has attained a degree of independence that makes its actions difficult to predict or control.

The power of supervision denotes the monitoring of the thing in its use, the inspection of it, and the rectification of defects that become apparent in it.¹⁰ Applying this concept to artificial intelligence, while it may conceivably be applied to the manufacturer of the artificial intelligence, it cannot readily be applied to the end user, who does not possess the technical expertise required for that purpose.

The custodian in whom fault is presumed is the natural or legal person who exercises actual control over the thing, and identifying this person in the context of artificial intelligence from among the various parties involved in its manufacture and programming — is a matter of considerable difficulty. Even assuming that such identification was permissible, the custodian may rebut liability pursuant to Article 138(2) of the Algerian Civil Code, which recognizes the possibility of rebuttal where the harm results from a cause the custodian could not have anticipated — as would be the case with the unpredictable and uncontrollable acts of an artificial intelligence system, which satisfy the constitutive elements of force majeure.

In light of these observations, the inadequacy of the custodianship concept as applied to artificial intelligence — which lies at the heart of liability for the acts of things — renders this framework incapable of accommodating and addressing the harms generated by artificial intelligence.

➤ **Causation of Harm to a Third Party by the Thing Under Custody**

For liability for the act of a thing to arise under the general rules of civil law, the thing must cause harm to a third party, and that harm must result from the thing's positive intervention, without requiring direct material contact between the thing and the injured party. This applies in principle to artificial intelligence; yet characterizing it as a source of harm is rendered difficult by its intangible nature, given that some jurists have maintained that human fault is always the true cause of harm. The practical reality has, however, demonstrated the contrary: software programs and artificial intelligence systems have been the cause of numerous incidents that have generated complex legal disputes, intractable in the

⁹Nariman Mas'ud Bourghda. "Civil Liability for Acts of Intelligent Systems." *Annals of the University of Algiers*, No. 31, Vol. 1, 2017, p. 146.

¹⁰Ali Filali, *op. cit.*, p. 203.

absence of specific legislation governing this novel category of harmful causation. Examples include the propagation of false or fabricated information that violates privacy or damages commercial entities — as illustrated by the action brought against Google in connection with its Google Suggest service, a machine-learning algorithm whose search predictions associated the names of companies and notable individuals with defamatory terms.¹¹

1.2.2 Vicarious Liability of the Principal for the Acts of the Agent

Article 136 of the Algerian Civil Code provides:¹²

“The principal shall be liable for harm caused by the wrongful act of the agent, provided that the act was committed in the course of, by reason of, or in connection with the performance of the agent’s functions.”

Two conditions must be satisfied for the vicarious liability of the principal to arise. In order to apply these conditions to the harms caused by artificial intelligence, the requirements for the principal’s liability are first examined, followed by an assessment of whether its provisions may be invoked to address such harms.

➤ Existence of a Relationship of Agency

An agency relationship arises where the principal exercises actual power of supervision and direction over the agent, and it is this element of actual authority and direction that constitutes the essence of the relationship. It arises where the agent complies with the principal’s instructions as to the manner of performing the work, regardless of the source of that authority — whether contractual or statutory — and arises even in the absence of a legal instrument. It is not required that the agent’s subordination be in exchange for remuneration, nor that the principal have freedom to choose or reject the agent.¹³ The principal must additionally have the authority to issue instructions and to supervise the agent’s compliance with them.

➤ Commission of a Wrongful Act by the Agent

The fault committed by the agent in the course of performing their functions does not raise difficulties of characterization: it is the fault committed while the agent is carrying out work within the scope of their employment, regardless of the time or place of the act. It is immaterial whether the fault was committed in execution of the principal’s instructions or without such instructions, with or without the principal’s knowledge, or for a personal motive or in the interest of the principal.

➤ Assessment of the Role of Vicarious Liability in Addressing Harms Caused by Artificial Intelligence

Applying the rules of vicarious liability to artificial intelligence systems, the owner of the application is the principal, while the application itself is the agent — on the basis that the application is subject to the owner’s or user’s instructions, establishing an agency relationship between them. Where the application causes harm to a third party, the user’s liability may arise on the ground that the application was acting in the user’s interest. Notwithstanding, it is not possible to rely on vicarious liability as the basis of civil liability for acts of artificial intelligence, since Algerian civil law requires that the agent possess legal personality — a status that the Algerian legislature has not extended to artificial intelligence. In addition, Article 137 of the Algerian Civil Code grants the principal the right to seek recourse against the agent in cases of gross fault, which presupposes the existence of a separate estate belonging to the agent — an impossibility in the case of an artificial intelligence system.

2. Novel Legal Frameworks as the Basis for Civil Liability in the Field of Artificial Intelligence

¹¹Lakhdar Raffaf and Fairuz Ma'oush. "The Specificity of Civil Liability for Damages Caused by Artificial Intelligence Systems under Algerian Law." *Tabna Journal of Scientific Studies*, Vol. 6, No. 1, 2023, p. 586.

¹²Article 136 of Law No. 05/10 of 20 June 2005 comprising the amended and supplemented Algerian Civil Code.

¹³Al-Sa'di, op. cit. (2011), p. 650.

The expanding deployment of artificial intelligence technology has generated new legal challenges in the field of civil liability, as the traditional rules have proved inadequate to address the harms produced by autonomous decision-making systems. It has accordingly become necessary to revisit the existing forms of liability — both contractual and tortious — and to adopt legal frameworks suited to the application of civil liability to artificial intelligence and capable of ensuring the protection of victims in the context of technological advancement.

2.1 Civil Liability of the Producer

Article 140 bis of the Algerian Civil Code provides: ¹⁴

“The producer shall be liable for harm resulting from a defect in its product, even in the absence of a contractual relationship with the injured party.”

This provision establishes that the basis of the producer’s liability is a defect in the product. An assessment is accordingly undertaken below of the extent to which the framework of producer liability for defective products under Algerian law is capable of encompassing the harms generated by artificial intelligence.

2.1.1 The Concept of Producer Liability

The Algerian legislature adopted the producer liability framework under Article 140 bis. This is a novel form of civil liability grounded in the concept of risk assumption, rather than in the proof of fault. In order to understand the role of producer liability rules in addressing harms caused by artificial intelligence, it is necessary to examine its three constitutive elements: the defect, the harm, and the causal link.

➤ Existence of a Defect in the Product

Producer liability requires that the harm result from a defect in the product; however, the legislature has not defined this defect, which invites inquiry as to its meaning. Reference to the legal concept of latent defects familiar in the law of sale suggests that the legislature may have intended that concept, or alternatively that it has left the matter open for scholarly elaboration of a definition suited to contemporary developments.

It appears that the defect in the product as referred to in Article 140 bis is entirely independent of the defect warranted by the seller; had the legislature intended the latter, it would not have made express provision for it. On a careful analysis of the term “defect in the product” as a condition for liability, a defective product is one that fails to conform to the required standards and specifications.¹⁵ In the context of producer liability, the defect thus encompasses all risks that the product may carry.

➤ Occurrence of Harm

Harm is the essence of civil liability. The question raised by Article 140 bis is which harms give rise to a right of compensation: does civil liability cover all harms, or is its scope confined to harms resulting from the act of the defective product? Since the provision stipulates compensation for harm arising from a product defect in general terms, including harm to the product itself, compensation extends to all bodily injuries sustained by the consumer as well as to all material losses suffered by the injured party.

➤ Causal Link

The causal link requires that the defect be the cause of the harm suffered by the injured party: but for the dangerous activity, the harm would not have been sustained. The importance of this element emerges in particular in relation to defenses: by proving the existence of an extraneous cause, the responsible party severs the causal link. In cases involving multiple producers, where more than one producer has contributed to the manufacture of the product that caused harm to the consumer, each producer’s proportionate contribution to the chain of causation must be assessed.

¹⁴Article 140 bis of Law No. 05/10 comprising the amended and supplemented Algerian Civil Code, op. cit.

¹⁵Executive Decree No. 13/378 of 9 November 2013 specifying the conditions and modalities relating to consumer information. Official Gazette No. 58, 2013, p. 8.

2.1.2 The Role of Producer Liability in Addressing Harms Caused by Artificial Intelligence

Producer liability arises where a product causes harm to a third party by reason of a defect in it, pursuant to Article 140 bis. Applying this to artificial intelligence requires inquiry into whether artificial intelligence can be characterized as a product.

➤ Characterization of Artificial Intelligence as a Product

Article 140 bis(2) defines a product as ¹⁶

“any movable property, even if incorporated into immovable property, including in particular agricultural produce, industrial produce, livestock ... and electrical energy.”

From the terms of this provision, the legislature has enumerated the categories of product exhaustively. Applying this definition to artificial intelligence systems, it is satisfied with respect to the physical applications of artificial intelligence — machinery falling within the category of industrial produce. As for artificial intelligence software in its intangible form, the concept of product as defined in Article 140 bis is also applicable, since the provision includes the expression “movable property” so as to encompass both tangible and intangible movables — particularly given that electrical energy, itself a product of non-material nature, is expressly included. The provision may, however, be criticized for its failure to specify the framework or conditions under which movable property acquires the status of a product, and for its omission of the condition that the movable property be placed in commercial circulation — a condition required by consumer protection law. Article 9(3) of Law No. 09/03 provides:¹⁷

“The placing of a product on the market encompasses all stages of production, importation, storage, transport, wholesale and retail distribution.”

This provision broadly extends the circle of those liable for harm, by encompassing all stages of production without specifying the persons responsible for placing the product in commercial circulation. The responsible party is therefore not the producer alone but all those who intervene in the process of bringing the product to market. Applying this concept to artificial intelligence technology, the placing of algorithms and software in commercial circulation is difficult to achieve independently of their physical carrier.

➤ Identification of the Artificial Intelligence Producer

Identifying the producer in the context of artificial intelligence is inherently difficult owing to the complex constitution of such systems, which requires the intervention of multiple parties in their creation — the manufacturer, the programmer, and the developer. The Algerian legislature has not defined the producer in Article 140 bis, but has done so in the Consumer Protection Law No. 09/03, Article 3, where the term used is “operator” — defined as any natural or legal person who intervenes in the process of placing the product on the market. The legislature has thus broadened the concept of producer to encompass every participant in the production process, with a view to reducing the burden on the injured party. However, the identification of this concept in the context of artificial intelligence is surrounded by ambiguity and complexity, given the multiplicity of actors involved in its existence, whether in its physical or intangible form.

➤ Existence of a Defect in the Product

The legislature has not defined the concept of a product defect as referred to in Article 140 bis; however, under Consumer Protection Law No. 09/03, a sound and marketable product is one free from any deficiency or latent defect that would threaten consumer health and safety. Accordingly, the defect relevant to producer liability is the risks inherent in the product that may cause bodily injury to a person. Defects in artificial intelligence may be identified in various ways: some may be attributed to design or manufacturing; others may consist in marketing defects, such as the failure to include adequate instructions or warnings.

¹⁶Article 140 bis(2) of Law No. 05/10, op. cit.

¹⁷Article 9 of Law No. 09/03 of 25 February 2009 on Consumer Protection and the Suppression of Fraud. Official Gazette No. 15, issued 8 March 2009, as amended and supplemented by Law No. 18/09 of 10 June 2018, Official Gazette No. 35, issued 13 June 2018.

The principal difficulty lies in identifying the defect, given the complex constitution of these systems. Producer liability is an objective form of liability that excludes fault, and the issue is therefore not the product's usability or danger per se, but rather how the victim can establish the danger of the product and its unsuitability, and demonstrate that the harm suffered resulted from a defect in the product — an exercise that imposes a heavy burden, particularly in view of the high-level and complex technology involved, which is understood only by a limited number of specialists. Even assuming that the producer could be identified, that party would be able to rebut liability by establishing that the state of scientific and technical knowledge at the time the artificial intelligence was introduced to the market — in either its physical or intangible form — made the identification of the security-impairing defect impossible.

On the basis of the foregoing analysis, the application of producer liability rules to the harms caused by artificial intelligence is fraught with difficulty, given the inability to identify the malfunction leading to the damage. This necessitates a thorough reconsideration of these liability rules in a manner commensurate with the distinctive nature of artificial intelligence technology.

2.2 The Theory of the Human Proxy

The question of artificial intelligence has become a legislative priority requiring flexible and comprehensive legal frameworks that protect interests without constraining future technological possibilities. Against this background, the theory of the human proxy has been advanced as a novel concept for addressing the harms arising from the use of artificial intelligence technologies.

2.2.1 The Concept of the Human Proxy Theory

The theory of the human proxy was developed by the Legal Affairs Committee of the European Union in 2017 in response to the practical problems arising from the use of artificial intelligence applications — most notably robotics — given the absence of clear legal provisions governing the relevant rules. The European Parliament accordingly issued what are known as the European Civil Law Rules on Robotics, confining these rules to robots on the grounds that they constitute the most widely deployed application.

➤ Rationale for the Theory

Grounded in the principle that the robot exists to serve humanity and is not a static or inanimate machine but rather a machine endowed with nascent human reasoning capable of further development,¹⁸ the human proxy is the representative of the robot — a legal entity devoid of personality and capacity — to the human person, by operation of law. The basis is either proven fault in the management of manufacture or operation, or the failure to take action to prevent a foreseeable hazard posed by the robot. This is because the robot can no longer be characterized as a thing amenable to custodianship, nor as an incapacitated person susceptible to supervision, but rather as an intelligent machine that thinks independently, as would a competent adult human being. The European legislature has identified examples of the human proxy responsible for errors in the operation of a robot, including the factory owner and the proprietor, both of whom are liable by proxy for the robot's contractual acts.

➤ Legal Basis of the Theory

In 2017, the European Parliament put forward a number of recommendations relating to civil law rules on artificial intelligence systems, including the grant of electronic legal personality to such systems in circumstances where the technology has attained a high degree of autonomous decision-making without human intervention.¹⁹

The European Parliament's recognition of legal personality for artificial intelligence technologies signals its support for the concept of holding these systems personally accountable for harmful acts directed at third parties. Article 59 of the European Civil Law Rules on Robots calls for

¹⁸Hammam al-Qawsi. "The Impact of the Human Proxy Theory on the Utility of Law in the Future." *Jil Journal of In-Depth Legal Research*, No. 25, May 2018, p. 81.

¹⁹European Parliament. Draft Resolution on Civil Law Rules on Robotics, 2015/2103(INL), 16 February 2017. Available at: <http://www.europa.eu.com>. Accessed: 29 April 2026, 21:00.

the establishment of a mandatory insurance scheme for specific categories of robots, requiring the provision of insurance coverage for harms caused by robots through contributions from the manufacturer, programmer, owner, or user to a compensation fund, or through the procurement of collective insurance to guarantee compensation for harm caused by robots.

2.2.2 The Role of the Human Proxy Theory in Addressing Harms Caused by Artificial Intelligence

This approach represents a transitional phase from the concept of civil liability for the custodianship of things — where fault is presumed — to the concept of proxy liability, placing responsibility on the human actor. Its basis is either proven fault in manufacture or operation, or the failure to exert effort to prevent a foreseeable risk posed by the robot.

➤ Recognition of the Robot's Liability for its Own Acts

Recognition of legal personality for artificial intelligence would presuppose its treatment as a person — whether natural or legal — yet this is not currently achieved given the fundamental differences between artificial intelligence and both categories of persons. The grant of legal personality entails a range of consequences, most notably the requirement of a separate estate, which is also not currently contemplated — notwithstanding the French Parliament's approval of an insurance scheme for these technologies, which may be regarded as a form of financial accountability, but which has equally not been realized. Furthermore, the grant of legal personality to robots raises serious legal problems for the human community: this concept is perceived as a stratagem by manufacturing companies seeking to exonerate themselves from liability for harm caused by their devices.²⁰

Recognition of legal personality for artificial intelligence systems would also give rise to serious deviations on the part of the manufacturers and designers of these technologies, in that their diligence in manufacturing and programming would diminish as their personal liability would be attributed to the technologies themselves rather than to them. A letter was accordingly addressed to the European Parliament's proposal, warning of the dangers of granting legal personality to robots.²¹

➤ Assessment of the Human Proxy Theory

The human proxy theory cannot readily be adapted to the general rules of civil law, and it is therefore difficult to characterize the relationship between a human being and a robot when the former is held responsible for the latter and bears the consequences of its errors, yet the robot does not itself possess legal personality.

Moreover, despite the novelty of this theory in comparison with existing frameworks, the degree of autonomy that artificial intelligence currently possesses precludes its full utilization. In the author's assessment, the theory of objective liability on a risk basis is the most defensible approach, since it does not require the injured party to prove that the harm was sustained as a result of an act of artificial intelligence in order to obtain compensation, and does not require proof of a defect in the intelligent system. The greatest challenge that remains is the identification of the party responsible for the intelligent system.

Conclusion

This paper has demonstrated that the continuous advancement of artificial intelligence, measured against the legal environment regulating this novel technology — an environment that evolves at a markedly slower pace, particularly in matters of civil liability — has resulted in harm to third parties on a conspicuous scale, caused by artificial intelligence in both its physical and intangible dimensions. This has necessitated the identification of the responsible party through resort to the traditional rules of civil liability; yet the distinctive nature of artificial intelligence has generated difficulties that have rendered these legal frameworks inadequate and incapable of addressing these novel forms of harm.

²⁰Al-Qawsi, op. cit., p. 83.

²¹Open Letter to the European Commission on Artificial Intelligence and Robotics. Available at: <https://robotics-openletter.eu/>. Accessed: 29 April 2026, 10:00.

The principal findings of this paper may be summarized as follows:

- The legal bases for civil liability arising from artificial intelligence fall into two categories: traditional bases provided by the general rules of civil law, and novel bases introduced to address the deficiencies of the general rules.
- The impossibility of conferring legal personality on artificial intelligence — owing to its particular nature, which differs fundamentally from that of both natural and legal persons — has precluded the application of personal liability rules, which were originally designed for application to persons in their natural and legal capacities.
- The difficulty of identifying the responsible party from among the multiple actors in the artificial intelligence field — the manufacturer, programmer, owner, and user — makes it difficult to distinguish among their respective faults and their causal connection with the harm.
- The novel bases — as legal solutions compared with the traditional bases — are equally inadequate to establish liability, given the difficulty of identifying the cause of the system's error.

The recommendations advanced in this paper are as follows:

- The rules of civil liability should be amended to accord with the nature of artificial intelligence and to align with the changes that artificial intelligence systems impose, so as to accommodate the harms they generate.
- Benefit should be drawn from foreign experience — in particular by adopting the European Parliament's framework of compulsory insurance to compensate for harms caused by artificial intelligence systems, coupled with an obligation on all beneficiaries of these systems to contribute to compensation funds for such harms.
- Research and scholarly studies addressing the legal concerns raised by artificial intelligence should be intensified, in preparation for meeting future challenges as this technology continues to evolve.

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