



Artificial Intelligence and the Formation of Contractual Intent



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Abstract

Contemporary technological innovations have produced a new generation characterized by advanced learning capabilities and performance, embodied in artificial intelligence, which has come to dominate developments within the digital sphere. It has rapidly and profoundly integrated into various aspects of human life, becoming a key tool upon which individuals rely in their daily activities and in solving complex problems. This reliance has extended into the legal domain, particularly in the conclusion of contracts, where artificial intelligence has begun to reshape traditional methods. Intelligent systems now participate in the preparatory stages of contracting, including negotiation processes conducted through AI technologies, thereby assuming a role in expressing will. This evolution introduces a significant intersection between technology and law, raising questions about their mutual influence. It particularly affects the general principles governing contract theory, especially regarding the ability of artificial intelligence to negotiate and conclude contracts either as an independent contracting party or in the capacity of an intelligent agent.

Keywords

Artificial Intelligence;
Expression of Will,;
Negotiation;
Contract Conclusion;

الكلمات المفتاحية

الذكاء الاصطناعي؛
التعبير عن الإرادة؛
التفاوض؛
إبرام العقود؛

الذكاء الاصطناعي وصناعة الإرادة في إبرام العقود ملخص

أبرزت الابتكارات التكنولوجية المعاصرة جيلا جديدا مدمجا بمستوى عال من التعلم والتفوق طغى لى مختلف الابتكارات التي نشأت في الفضاء الرقمي ألا هو الذكاء الاصطناعي، حيث اقتحم بشكل سريع وبصورة مذهلة حياة الإنسان في العديد من نشاطاته، وفي ظل هذا التحول الرقمي أصبح الإنسان يعتمد عليه في حياته اليومية ويعول على خدماته لإيجاد الحلول لمشكلاته الصعبة، بل ذهب أبعد من ذلك وأدخله في معاملاته القانونية وأعاد صياغة طريقته في إبرام العقود، فأخذت الآلات الذكية تحل محله في العملية والتحضير لها عن طريق التفاوض باستخدام تقنيات الذكاء الاصطناعي، متخذة شكلا من أشكال التعبير عن الإرادة، مما يضعنا أمام متغير جديد هو التكنولوجيا والقانون، ومدى تأثير كل منهما بالآخر لاسيما على القواعد العامة التي تحكم نظرية العقد، من حيث قدرته على التفاوض والتعاقد كطرف متعاقد أو بوصفه وكلا ذكيا.

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Doi:

I- Introduction:

It is widely acknowledged that any emerging phenomenon constitutes an engaging subject of discussion, a fertile field, and a significant focal point that attracts researchers to study it, commensurate with the impact it generates within a particular domain and the extent to which it alters the legal position in a given field. In this context, there has been a marked and increasing demand for the use of artificial intelligence applications across various sectors, particularly in education, healthcare, medical surgery, patient and elderly care, unmanned aerial vehicles, and autonomous driving. The law, in turn, has also benefited from these technologies, sharing in the application of their programs and models, as evidenced by the emergence of smart contracts.

Accordingly, the subject of artificial intelligence has garnered the attention of legal scholars in general, and civil law specialists in particular, with respect to the extent to which it may be recognized as a legal entity possessing a form of existence within various civil transactions that have acquired a technological character. This is especially evident with the advent of intelligent robots and the increasing dominance of intelligent machines over a vast range of contractual relationships, within a system programmed to a high level of precision and intelligence that surpasses human cognitive capacity. This development has attracted the interest of contracting parties, as it may contribute to facilitating and advancing their transactions and to easing the performance of assigned tasks.

This is manifested through reliance on artificial intelligence technologies to substitute for contractual intent during the negotiation phase as a preliminary step toward contract formation. It also raises questions concerning their capacity to represent contracting parties and to enter into contractual relationships, as well as the possibility of attributing intent to artificial intelligence in expressing offer and acceptance, or assigning the process to the intelligent machine in its capacity as an agent for the contracting parties. Such developments may enhance trust in contractual dealings, given the security they provide and the difficulty of breaching their systems, owing to their advanced capabilities in deep self-learning, their autonomy in decision-making independent of human intervention, their detachment from the control of their creators, their independence from the guidance of their inventors, and their freedom from the supervision of their users.

Study Problem:

The research problem is concerned with the relationship between humans and machines, or intelligent robots, and the extent to which such systems are capable of entering into contracts without human intervention. Artificial intelligence technologies have demonstrated their ability to simulate human intelligence, which gives rise to the following legal question:

Can artificial intelligence replace the will of the contracting party in concluding contracts without human involvement? In other words, is it capable of expressing intent and engaging in contractual negotiations by virtue of its advanced capacity to simulate human intelligence?

Study Methodology:

Given that artificial intelligence is a relatively recent subject, this study adopts both descriptive and analytical approaches to describe and define the technology, analyze its characteristics, and assess its skill and capacity in relation to the principles of contract theory. This is examined in terms of its ability to conclude contracts either as a contracting party or as a representative or agent in contracting, as well as the extent to which its programs are capable of negotiating in order to achieve the intended objectives and predetermined aims, namely the conclusion and execution of contracts.

Study Objective:

The study aims to provide a comprehensive understanding of the concept of AI contracts and to clarify the terminology employed.

- To explain how contracting is carried out through artificial intelligence.
- To demonstrate its ability to conclude contracts and engage in contractual negotiation in a manner comparable to that of a human being.

Study Hypothesis:

The study is based on a scientific and technological hypothesis that artificial intelligence possesses the ability to simulate human intelligence.

- The capacity of artificial intelligence for deep self-learning and for operating autonomously without human intervention.

II– The Concept of Artificial Intelligence:

One of the outcomes of the digital revolution is the discovery of artificial intelligence technology by the American computer scientist Nick Szabo in 1996, with its first application appearing in the form of a machine for selling soft drinks (Al-Bab, 2022, p. 607). From this, it can be stated that programs fully based on artificial intelligence can be employed at various stages of contractual relationships, and therefore possess the capacity to conclude and execute contracts through automated means via what is known as blockchain technology, which constitutes the most significant application of artificial intelligence (Al-Bab, 2022, p. 611) in the field of contract formation.

II.1 Definition of Artificial Intelligence Technology and Its Features:

Addressing recent developments requires engaging with them from a legal perspective by defining the concept of the technology, examining its impact on the contractual system and the interests of contracting parties, and exploring the position of the general theory of contract in light of the advantages offered by artificial intelligence in the field of contract formation.

There is no doubt that artificial intelligence constitutes one of the emerging contemporary phenomena. Despite the widespread use of its applications and their diversity, a precise and universally agreed definition of its nature has not yet been achieved.

II.1.1 Definition of Artificial Intelligence:

Artificial intelligence represents a cognitive scientific field (McCarthy, 1989)⁽¹⁾ generated by technological transformation, with the objective of enabling computers, their programs, and robots to possess characteristics of human intelligence, such that they are capable of self-learning, communication, and reasoning. These programs thereby acquire highly advanced capabilities that allow them to simulate human behaviors and traits, which are ordinarily performed with full awareness and capacity (Al-Ghanami, 2020, p. 62).

In seeking to define artificial intelligence, numerous definitions have been identified, differing according to scholars, researchers, and the various scientific disciplines that engage with and are attracted to this subject.

Without delving into technical and specialized definitions, and without examining the historical origins of its emergence, this study moves beyond such divergences and instead focuses on the legal doctrinal definition that directly serves the subject of the research, namely the extent to which artificial intelligence tools can be applied to the contractual process or to the formation of legal contracts.

Accordingly, the first to introduce the term artificial intelligence, abbreviated as AI, was the American scholar John McCarthy, a computer scientist, who defined it in an article published on the Stanford University website as a mechanism for creating a computer or an intelligent robot controlled by a program capable of thinking in a manner analogous to human intelligence (McCarthy, 1989). Artificial intelligence is thus utilized to understand human intelligence by studying how the human brain thinks and learns.

A distinction must be drawn between intelligence as a technology and the robot as a device. Intelligence constitutes a system of software and algorithms, whereas a robot is a device or machine. If intelligence is incorporated into its construction, it is referred to as an intelligent robot. Accordingly, whether reference is made to intelligence or to an intelligent robot, both ultimately denote artificial intelligence (Kansouh, p. 1480), since the intelligent robot is merely one of its applications (Al-Zayat, 2025, p. 383). As for contracts concluded through artificial intelligence, they are contracts that are pre-formulated in digital form and executed automatically without human intervention. In all cases, it is evident that this technology is increasingly penetrating the legal domain in the field of contractual transactions.

II.1.2 Features and Characteristics of Artificial Intelligence Contracts:

Artificial intelligence-based contracting systems are distinguished by a set of features that differentiate them from traditional contracts:

- The first defining feature of artificial intelligence contracts is that they are concluded without intermediaries. In traditional contracts, transactions are typically executed through intermediaries who are not parties to the contract, such as notaries, brokers, and banks (Al-Bab, 2022, p. 618). This inevitably entails the payment of costs and transaction fees and may require lengthy procedures. By contrast, contracting through artificial intelligence tools

is conducted directly and with high efficiency, thereby reducing costs by minimizing consumer or client movement (Al-Dabbousi, 2020, p. 392) and shortening the time required to complete the transaction.

- They provide security in contractual transactions. Consequently, their data are more difficult to breach compared to traditional contracts, as such data are stored securely in a decentralized ledger (Al-Dabbousi, 2020, p. 391)⁽²⁾ using robust encryption. Accordingly, it is difficult for either party to alter, delete, or access the stored personal data.
- Artificial intelligence contracts are executed using pseudonyms in accordance with the preferences of the contracting parties, who have the freedom to conceal their identities and tend not to disclose their real names when concluding contracts.
- Contracts are executed automatically. The possibility of automatic execution arises once the contractual terms are agreed upon and formulated in a digitally encrypted form programmed for self-execution. Thus, when a specified condition or predefined situation is fulfilled, the corresponding decision is executed automatically, in accordance with the well-known rule “IF...THEN” or the principle of peer-to-peer interaction. An example can be drawn from a sales contract: once the sold item is delivered, the IF condition is satisfied, thereby triggering automatic execution through THEN algorithms, which transfer the price of the sale to the seller’s account in encrypted digital currency (Al-Bab, 2022, p. 619). One of the key advantages of this feature is that it eliminates delays and negligence in the execution of contracts typical of traditional agreements, facilitates the fulfillment of obligations, and reduces the likelihood of non-performance.

II.2 Types of Artificial Intelligence:

II.2.1 General Artificial Intelligence:

This refers to any artificial system endowed with broad knowledge and qualified to perform any task or intellectual activity undertaken by humans. Such a system is capable of self-learning and of simulating human capacities in thinking and intelligence. However, it lacks logic, self-awareness, and the ability to define its own purpose (Al-Ghanami, 2020, p. 65).

II.2.2 Super Artificial Intelligence:

The term superintelligence denotes intelligence that operates independently of human intervention. It possesses remarkable capabilities in performing tasks assigned to humans and in adapting situations objectively, thereby avoiding biases and emotions. It also contributes to developing solutions to problems that may confront humans. It interacts more rapidly in the process of contract formation in terms of accuracy and formulation, simulating the human conception of expressing intent (Bouandel, 2024, p. 512). Superintelligence, rather than general or narrow intelligence, is authorized to engage in negotiations, and it is capable of concluding all types of contracts, including both freely negotiated contracts and contracts of adhesion.

III. The Use of Artificial Intelligence in the Process of Contract Formation:

Presenting artificial intelligence as a mechanism capable of contracting is a hypothetical issue devised within the technological domain, which differs in its conceptual foundation and legal characterization from the traditional domain. This is examined through assessing the extent to which the general rules governing contract theory are compatible and consistent with artificial intelligence programs and algorithms, beginning with the preparatory phase of contract formation, engaging in preliminary negotiations, issuing an offer and expressing acceptance, and culminating in the full concurrence of the contracting parties through which the contract is concluded.

III.1 Artificial Intelligence and Its Capacity for Contractual Negotiation:

In order to ensure proper preparation for contract formation, it is necessary to engage in a process of contractual negotiation, wherein each party has the freedom to discuss the terms and conditions of the contract and may either accept or reject them, pursuant to Article 59 of the Algerian Civil Code, which provides that a contract is concluded through the exchange of two corresponding expressions of will. The recourse of the parties to negotiation as a preliminary stage is required by the principles of good faith and integrity,⁽³⁾ and is necessitated by legal certainty, in preparation for concluding contracts smoothly and clearly, in a manner that ensures reaching an agreement that achieves mutual interests.

The nature of the negotiation process inherently carries a preventive character that precedes the conclusion of the contract, as the legislator intends through it to prevent any disruption of contractual balance. This reflects a modern legislative approach adopted by the French legislator under Law No. 2016-131, which stipulates the necessity of engaging

in contractual negotiations as a preliminary stage within the new law of contracts pursuant to Article 1112. Negotiation has thus been regulated after previously being subject to personal assessments and the discretionary practices of contracting parties (Shaghati, 2022, p. 19), and has been linked to the principle of good faith. The parties, during negotiations, are required to disclose all data and information relating to the contract honestly and in good faith, in a manner that ensures contractual security. It has also been established as a matter of public order, and it is not permissible to agree on its exclusion.

Since negotiation is based on bargaining, joint discussion, and reciprocal concessions, it typically requires a relatively long period of time (Al-Shobary, 2019, p. 1179) due to the preparation involved in reaching a satisfactory settlement or agreement that serves mutual interests, as it constitutes the available means for obtaining the greatest possible legitimate benefit at the lowest possible cost.

It is evident that artificial intelligence technologies, as constructed or virtual entities, do not possess social skills or experience, nor do they have emotional capacities, such as the inclination toward reassurance that motivates negotiation or aversion to loss, or the readiness and desire to conclude contracts that achieve anticipated benefits. This is reflected in the absence of cognitive awareness and the capacity to comprehend contractual obligations in the manner expected of human parties (Soliu, 2024), which explains the position of a segment of legal scholarship that rejects recognizing its capacity to negotiate, since any error that occurs is attributed to its designer, as such error is considered human in origin (Al-Khatib, 2020, p. 88).

III.1.1 Data-Driven Negotiation Based on Programmed Inputs:

In light of the foregoing, digital technology based on artificial intelligence has made it possible to conduct negotiations in the field of commercial transactions for the conclusion of deals, particularly where the subject matter of negotiation is clearly defined in advance and comprises abstract contractual elements such as the nature and quality of the product, price, method of payment (Fatima Al-Zahra, 2018, p. 80), and similar factors.

Artificial intelligence systems designed for negotiation and programmed for bargaining can overcome this challenge by relying on programmed data that enables automated communication. They analyze vast amounts of stored data, consisting of terms and clauses of comparable contracts, and compare them with market prices and available offers. On this basis, they select the most favorable terms and the most suitable offers according to an automated programming of defined objectives. The intelligent agent subsequently utilizes this information to improve its performance (Al-Zayat, 2025) and to facilitate execution at a later stage.

In consumer contracts, the terms and conditions are typically predetermined, following a standard model that specifies price and contractual terms not open to negotiation as a general rule. However, digital transformation and technological advancement have necessitated the development of machines equipped with programs designed for negotiation, or informational models capable of negotiating various contractual terms and determining appropriate decisions to achieve the intended objectives.

Accordingly, the scope within which artificial intelligence demonstrates its capacity for programmed negotiation may be outlined as follows:

- Identifying the principal and customary clauses of a contract, comparing them with similar contracts, and detecting unlawful provisions that may lead to an imbalance in the contractual relationship and potential harm in the future.
- Where artificial intelligence systems are programmed to utilize data modification capabilities, they update encoded information whenever changes occur in accordance with current data, adapting it to the circumstances of the new transaction in a manner that serves the interests of the user or the party represented. In the case of an intelligent agent acting on behalf of a seller, it may propose modifications aligned with market fluctuations and evolving consumer preferences, thereby presenting the seller with the most advantageous offers based on updated information (Fatima Al-Zahra, 2018, p. 75), such as improving payment terms and reducing risks.
- Generating contract versions that incorporate data reflecting the interaction of the contracting parties and preparing anticipated customer responses, thereby assisting them in the negotiation process.

Nevertheless, the principal challenge facing this technology lies in the difficulty of achieving genuine negotiation. Despite its considerable capacity to simulate human intelligence, it cannot transcend human limitations (Al-Khatib, 2020, p. 43), as it lacks the ability to possess awareness, consciousness, and a profound understanding of the inner dispositions of contracting parties. It is therefore incapable of perceiving the subtleties necessary for building trust and sensing good faith between parties, which constitute fundamental principles in the negotiation process.

III.1.2 Distinguishing the Negotiation Method between Narrow AI Systems and Advanced AI Programs:

The role of artificial intelligence in conducting negotiations varies according to the differences between AI systems.

III.1.2.1 Narrow or Limited AI Systems

In principle, artificial intelligence does not possess the capacity to negotiate or bargain, as it is designed to perform specific tasks within a defined scope based on fixed rules. Consequently, it lacks the ability to go beyond these parameters to engage in negotiations for the purpose of concluding contracts (Othman, 2021, p. 1572). This limitation arises from the lack of correspondence between its structure and system and the nature of human beings, whose capacity for learning and handling novel situations differs significantly. A contract is fundamentally grounded in the principle of the autonomy of will, and will originates in the human psyche, encompassing emotions and sentiments that are expressed through behaviors and actions capable of establishing contractual obligations. Such systems do not possess this capacity.

However, exceptionally, these systems may engage in contractual negotiations if they are specifically programmed to conduct negotiations automatically within a particular domain, based on a set of predefined rules and objectives and through a sequence of programmed steps (Othman, 2021, p. 1577). If agreement is reached on the contractual terms, the contract is formulated in encoded symbols and executed automatically through specific algorithms that do not require human cognition, such as the delivery of goods and the automatic transfer of payment to the seller's account (Al-Ghanami, 2020, p. 69).

III.1.2.2 Advanced AI Systems:

These are systems designed specifically for negotiation, or expert systems equipped with technologies capable of engaging in joint negotiation in a manner that surpasses human cognitive ability (Othman, 2021, p. 1577). They may conduct negotiations either in a traditional form, where one party to the contract is a natural or legal person and the other is an intelligent machine such as a robot, or through electronic negotiation between an intelligent machine and another electronic contracting mechanism, regardless of its nature. In both cases, advanced artificial intelligence is capable of negotiating by analyzing and interpreting data, and by simulating the dynamics of the human brain through prior experience, acquired values, and available knowledge.

In consumer contracts, for example, artificial intelligence can identify the needs and preferences of consumers through advertisements and product offerings tailored to the criteria desired by the consumer, such as pricing, guarantees, delivery procedures, and notifications regarding developments related to the product. It can also analyze contractual outcomes by predicting the extent of the contracting party's interaction with and acceptance of the proposed terms. It may modify a specific condition, add a clause within a predefined scope, or reduce the price, thereby enabling it to make negotiation decisions that yield favorable outcomes, attract customers to negotiate, and encourage them to enter into contracts.

From the foregoing, it is evident that artificial intelligence demonstrates efficiency in negotiation and decision-making, particularly through one of its most significant applications, namely the intelligent agent. This agent is capable of communicating clearly with humans due to its logical structure and precision in reaching conclusions, achieved through the proper and rational analysis and interpretation of data in a manner that simulates human cognition, thereby enabling it to understand human needs and obtain information that reflects their requirements.

Accordingly, it contributes to reducing human error by operating independently of inclinations and emotions, while also minimizing the effort and time required for negotiation. It achieves the ability to express intent in a clear and explicit manner, articulated by the machine with a higher degree of autonomy, by relying on the automated processing of data provided by the contracting party in the form of contractual terms. These are then compared with data derived from previous contractual transactions stored within expert systems and knowledge bases, enabling the selection of appropriate formulations to express the intent necessary (Bouandel, 2024, p. 512) for the conclusion of contracts.

III.2 Artificial Intelligence and Its Capacity to Express Will:

Based on the principle of freedom of contract, the parties' will may opt for the traditional method of contract formation, whereby an offer is issued and met with a corresponding acceptance, leading to the conclusion of the contract in accordance with Article 59 of the Algerian Civil Code. Alternatively, the parties may prefer an electronic approach based on artificial intelligence systems equipped with designed and programmed instructions for the automated and self-executing formation and performance of contracts. In both cases, the primary motivation for contracting and its central axis remains the pure will of the parties, as it is this will that selects the appropriate method for the conclusion and execution of the contract (Labban, 2025, p. 10).

Accordingly, whether reference is made to contracting through artificial intelligence or the term smart contracts is employed, the meaning remains the same, as the essential point is the presence of artificial intelligence capabilities within the machine (Labban, 2025, p. 03).⁽⁴⁾ The focus of this study is therefore on the extent to which artificial intelligence is capable of substituting for the parties to a contractual relationship in the formation of contracts.

On this basis, legal scholarship has engaged extensively with this issue, raising questions about the extent to which intelligent robots, characterized by their capacity for cognition, perception, and decision-making independent of human intervention, can be recognized as contracting parties capable of replacing human actors in the conclusion of legal transactions without recourse to their creator or programmer. These questions have led to the emergence of diverse positions, ranging between optimism and acceptance, with a willingness to integrate such technologies into various fields of activity, and, at other times, rejection and caution regarding their as yet unknown implications. Thus, opinions have become divided between proponents and opponents, without a definitive resolution of the underlying justifications.

III.2.1 Artificial Intelligence as a Contracting Party

In principle, the human role in contract formation cannot be dispensed with. However, this does not preclude keeping pace with technological development and employing artificial intelligence technologies in order to benefit from their advantages in performing this task. Indeed, such technologies have become a preferred means for humans, given the effort and time they save, as well as the accuracy and speed they provide in achieving the desired objectives.

The traditional method of contract formation is based on the mutual will of the parties, either through their physical presence with the issuance of offer and acceptance in a single session, or between absent parties. Referring to Article 54 of the Civil Code, a contract represents the concurrence of two wills to establish it, and it may not be modified, transferred, or terminated except by agreement of the parties, in accordance with the principle that the contract constitutes the law of the parties, as provided in Article 106 of the same code.

Accordingly, the foundation of the contract lies in the valid will expressed by a person legally qualified to contract, namely the human being, who possesses the capacity for discernment and awareness. This is referred to as mutual consent, which emanates from two wills that are free to contract or not, based on equal positions, with the aim of achieving shared objectives that ensure contractual balance between their respective economic interests.

Relying on the objective theory rather than the subjective one, that is, giving precedence to expression, such as writing, since third parties contract based on outward appearance, namely expression in its tangible and perceptible external form, which reflects the true will, makes it known, and reveals it. Moreover, it fosters trust between contracting parties and ensures the stability of transactions.

On this basis, the notion of artificial intelligence simulating human will is viewed from an objective perspective, whereby every legal obligation is linked to the external acts and conduct of the contracting parties, rather than to what occurs in their minds. This was articulated by Judge Frank Easterbrook,⁽⁵⁾ who stated that the intention to be bound does not require undertaking a journey through the skull of the contracting party. He clarifies that the court does not inquire whether the contracting person intended to be bound by the contract, which is what is meant by such a journey, but rather examines actions and conduct as external manifestations from which it can be understood that the contracting party has entered into an obligation toward the other party (Linarelli, 2019).

Accordingly, the new method introduced by individuals in the process of concluding contracts, and adopted as a means of expressing their intent, consists in integrating artificial intelligence technology to carry out the process in a manner consistent with the objective conception of the contract. On this basis, artificial intelligence may be regarded as an inherent component of programmed responsiveness, so long as the expression generated by its tools and software is valid and accurate, irrespective of the machine's awareness of the parties' intentions or its understanding of their will (Bouandel, 2024, p. 516).

It may thus be envisaged that intelligent machines express the will of the contracting parties in an original and autonomous manner, whereby the parties are virtually represented through private keys that embody their digital identities (Labban, 2025, p. 04). In this way, artificial intelligence constitutes a mechanism and instrument of contractual representation (Al-Zayat, 2025, p. 18), acting in a manner analogous to a human agent entrusted with a specific task formulated in the form of digital data and encrypted codes.

Given that artificial intelligence contracts are based on software systems and algorithms, they enable machines to perform actions closely resembling human behavior and intelligence, while surpassing human capabilities in terms of speed and precision in executing assigned tasks and achieving predefined objectives without loss of time and independent of human intervention (Al-Ghanami, 2020, p. 72).

This form of representation therefore constitutes a novel challenge arising from the participation of artificial intelligence tools in the process of contract formation without recourse to their users, as such systems are programmed with extensive capabilities and designed at a high level of learning, automated interaction, and independent planning. Consequently, they possess the capacity to conclude contracts in a manner comparable to humans, based on software incorporating delegated authority to intelligent machines grounded in predefined instructions established by the parties, encompassing all contractual terms, thereby rendering the contract legally valid.

It thus becomes evident that artificial intelligence plays a significant role in the field of civil law in general, and in contract theory in particular, through its capacity to conclude smart contracts. This technology may substitute for the contracting parties in the form of a set or sequence of predefined guidelines and instructions relating to contractual obligations and the consequences arising from any breach thereof. These instructions are capable of automatic execution in a digital format expressed in writing through fully encoded scripts or symbols (Al-Bab, 2022, p. 617).⁽⁶⁾ Such instructions embody the will of the parties to enter into a smart contractual relationship (Al-Ghanami, 2020, p. 66), as the parties link the smart contract to data sources that enable it to verify whether the agreed conditions have been fulfilled (Al-Bab, 2022, p. 616). Accordingly, artificial intelligence, or what is referred to as smart contracts or blockchain technology (Al-Ghanami, 2020, p. 67), has assumed a central role in facilitating the conclusion of this type of contract.

In essence, this represents the fundamental model upon which artificial intelligence operates, whereby an instruction is executed automatically upon the fulfillment of a specified condition, represented by the "IF" function. To illustrate, consider an insurance contract against a particular risk, such as flood risk. When such a contract is integrated with artificial intelligence technology, the "THEN" function is activated, and the insurance amount is automatically paid upon the occurrence of the insured event, namely the flood. Similarly, in air transport contracts, in the event of a delay exceeding two hours, the passenger automatically receives the agreed compensation once the condition of delay is met (Al-Bab, 2022, p. 616).

III.2.1.1 Artificial Intelligence and the Method of Contracting

The capabilities of artificial intelligence tools in the process of contract formation are manifested as follows:

- Artificial intelligence mechanisms undertake the review of contractual clauses with remarkable speed and high precision, performing automated reading of contracts, as well as auto-completing contractual content during the drafting of terms by individuals and proposing specific clauses (Bouandel, 2024, p. 518), based on specialized software designed for this purpose.
- The efficient analysis of legal data to extract contractual terms in accordance with the intentions of the parties (Soliu, 2024).
- The provision of practical negotiation proposals capable of improving contractual terms, identifying unfair clauses, assessing their conformity with predefined standards (Al-Issawi, p. 442), and highlighting strengths within certain provisions, thereby reinforcing the preventive function of negotiation in achieving balance within the contractual relationship (Al-Shobary, 2019, p. 18).
- The capacity for autonomous prediction of future needs (Al-Issawi, p. 442) through the analysis of supply and demand in major economic transactions, thereby enhancing and developing the competitive capabilities of companies across various sectors.
- Precision in analysis, proposal, and simulation is grounded in the strength of extensive and dense datasets that are available and stored, enabling greater efficiency in the formulation and simulation of agreements compatible with similar smart contracts.
- It renders the contractual relationship more efficient and economically viable, with minimal errors and a reduced likelihood of delays in execution or the emergence of disputes between contracting parties (Al-Bab, 2022, p. 616).

III.2.1.2 Artificial Intelligence Does Not Possess the Will to Contract

The notion of conceptualizing artificial intelligence as a party to a contractual relationship has not been welcomed or accepted by legal scholars. Rather, there has been caution against the risks associated with the use of its applications in legal transactions, which may result in harm for reasons that may only become apparent in the future. This is because, under Algerian law and most legal systems, a contract requires a will grounded in mutual consent, the essence of which lies in intention or purpose. Artificial intelligence technology, however, does not possess a will to express; rather, it is a tool designed to execute pre-programmed instructions with a certain level of skill and precision determined by its designer or inventor.

Accordingly, the assertion that artificial intelligence is capable of expressing will, concluding contracts, and executing them automatically without the intervention of the contracting parties constitutes an encroachment upon the principle of autonomy of the will and an attempt to undermine its foundation. Referring to Article 106, which provides that the contract constitutes the law of the parties and may not be modified or revoked except by their mutual consent, it has previously been established that if artificial intelligence executes contractual terms automatically and independently of the parties' will, this suggests that will plays no role in the creation or formation of the contract. By their nature, data are securely stored in the form of digital codes, making it difficult for the parties to access, modify, or delete them. This ultimately leads to a decline in the principle of consensualism.

Furthermore, it is conceivable that artificial intelligence may operate beyond the control of the parties' will due to its pre-established programming and design, thereby approximating the rules governing adhesion contracts, in which the terms cannot be modified or terminated. This, too, constitutes a fundamental erosion of the concept of contract (Al-Zayat, 2025, p. 03), whose essence is founded upon the principle of mutual consent. Contracting through artificial intelligence implies that one party to the contract is a machine endowed with advanced intelligence, while the other is a human, or that the contract may be concluded between one intelligent machine and another according to specific programming. In such cases, the mutual will that forms the basis of the contract and one of its essential elements is absent, rendering artificial intelligence unfit for contracting due to the lack of this fundamental requirement.

Despite the foregoing, the researcher is inclined to recognize that artificial intelligence technologies, from another perspective, represent a novel addition to contract theory by expanding the scope of freedom of contract. Indeed, they reinforce the principle of consensualism in terms of the method or means by which the parties choose to conclude contracts. In addition to traditional methods and electronic means, contracting may occur through any other valid means employing artificial intelligence tools, which require appropriate legal regulation and oversight.

Artificial intelligence mechanisms constitute an advanced scientific capability that has demonstrated effectiveness and superiority in simulating human intelligence and reasoning in a manner comparable to human cognitive processes within an organized framework. This framework relies on programs in which data are stored, enabling the system to conclude and execute contracts automatically and to interact naturally with humans or with other similar intelligent systems, based on predefined instructions encoded in the form of specific algorithmic structures (Al-Ghanami, 2020, p. 73).

III.2.2 Artificial Intelligence as a Contractual Representative in the Capacity of an Intelligent Agent

In contracts involving artificial intelligence, the intelligent agent may serve as the formal expression of the contracting party's will (Al-Zayat, 2025, p. 31), where it is designed to articulate the will of its user. It selects contractual terms that have been pre-programmed in a manner reflecting the will of its designer or owner. In a contract of sale, for example, the intelligent agent may be designed as an agent for the seller or as an agent for the buyer. Its uses thus fall within the category of transactional agents that possess the capacity to conclude contracts on behalf of consumers or with them (Aghzan, 2023, p. 172).

III.2.2.1 Definition of the Intelligent Agent and Its Characteristics

An intelligent agent is an electronic program used to perform tasks and activities on behalf of its users without their direct intervention or control. It is characterized by autonomy, flexibility, and the ability to communicate and interact with users or with other agents (Al-Zayat, 2025, p. 22).

Artificial intelligence, as a scientific and cognitive mechanism, possesses the competence that enables it to enter into contractual relationships. It is capable of concluding and executing contracts without human intervention or recourse to its users, by virtue of its autonomy and its ability to express intent through communication, whether with humans or with other machines possessing similar intelligence. This expression may take multiple forms depending on the available means, including electronic mail, digital writing, conversations, voice messages, or through artificial intelligence systems, as well as through technically recognized symbols and signals. Consequently, it acquires the capacity to assist in the formation and execution of contracts without reverting to its designer or user, acting in the capacity of their agent.

A contracting party may not wish to contract personally, particularly in electronic transactions, and may prefer to be represented by another person who contracts in their name and on their behalf. In such cases, the party may choose an intelligent agent to conclude the contract in their name and on their behalf. Here, a clear convergence and alignment can be observed between the traditional agent and the intelligent agent, as the latter assumes a position analogous to that of a human agent. Accordingly, the rules governing agency apply to it in terms of the concept of contractual agency, its conditions, and its effects. In this sense, it constitutes a representation of the contracting parties' will within the framework of contractual representation recognized in civil law, whereby the effects of the contract are attributed to its user, designer, or owner.

III.2.2.2 The Manner in Which the Intelligent Agent Contracts

Artificial intelligence technology is employed as a contracting agent in an indirect manner in the formation of contracts, with minimal human intervention. However, it cannot entirely negate human will, as it operates under human supervision and direction. Accordingly, artificial intelligence is regarded as an extension of the natural person, insofar as it simulates human intelligence as a starting point for achieving a specific objective, namely the material substitution of human intelligence (Yousri, 2024, p. 852). In this sense, artificial intelligence and humans exhibit a degree of similarity.

From a practical perspective, artificial intelligence acts as an agent on behalf of its owner or designer, who possesses the legal capacity to undertake juridical acts. Within the framework of an agency relationship, artificial intelligence may perform its functions, ranging from data analysis and negotiation to automated execution. Nonetheless, it always remains subject to the supervision and direction of the natural person (Soliu, 2024). It may conclude contracts that do not require negotiation or discussion if it has been programmed, in any form, according to predefined conditions. However, it is inconceivable that such programming constitutes an original will in the contractual process (Mohammed, 2023, p. 1333).

In principle, this situation indicates that artificial intelligence cannot conclude contracts independently of the will of the contracting parties, due to the absence of volition and cognition in artificial intelligence technologies and systems. This position is further reinforced by the profound and substantive divergence among jurists and scholars concerned with law and artificial intelligence, particularly regarding the question of recognizing legal personality for artificial intelligence. Consequently, there is also disagreement concerning the determination of liability rules, an issue that remains highly uncertain and subject to considerable debate among many legal scholars (Al-Hassan & Al-Arnaout, 2025, p. 145).

Without delving into the question of granting legal personality, understanding the role of artificial intelligence in contracting and its impact on contract theory remains in its early stages, notwithstanding the widespread use of one of its most significant applications, namely the smart contract. This topic is itself extensive and requires thorough conceptual grounding and study, primarily to assess its implications for the transformation of contract theory. Furthermore, while the legal liability regime in traditional contracts is based on civil liability, in contracts involving artificial intelligence, liability is attributed to the user as the legal person responsible for what has been created or developed and for the benefits derived therefrom. This is because artificial intelligence technology does not itself reap gains (Aghzan, 2023, p. 187), in accordance with the juristic maxim that liability accompanies benefit.

Accordingly, notwithstanding the existing divergence of views, the position has crystallized in light of the advanced simulation capabilities possessed by intelligent systems. These systems are accepted as no more than auxiliary tools in the process of contract formation, serving as innovative instruments that assist individuals such as notaries, lawyers, and drafters in preparing and reviewing contracts (Abu Al-Lail, 2020, p. 28) in the form of draft agreements based on conditions agreed upon by the parties. In this context, the expression of intent may occur either instantaneously or sequentially without recourse to a natural person. For example, an agent system acting on behalf of a seller may facilitate transactions by identifying consumer information, attracting customers, and targeting them with goods and services tailored to their consumption preferences, by searching for offers that appeal to them in order to entice purchasing and encourage contractual engagement.

With respect to advanced artificial intelligence technologies and their capacity to express intent for the purpose of concluding contracts, notwithstanding their high degree of simulation and their capacity for parallel reasoning akin to human cognitive abilities, and although they may succeed in persuading a contracting party as if interacting with a human, it cannot be conceded that they are competent to conduct negotiations concerning contractual terms. This is due to their lack of capacity to comprehend transactional dynamics grounded in consensual relationships, as well as their inability to distinguish between advantageous contractual acts and disadvantageous transactions (Othman, 2021, p. 1571).

By contrast, artificial intelligence technologies operating within a limited scope function in a narrow and specific domain, performing predefined tasks within the boundaries of the purpose for which they were designed. They do not possess the capacity to exceed their prescribed scope in order to conclude contracts on behalf of their designer or as an agent representing them.

Accordingly, artificial intelligence systems conclude contracts that conform to their programming and design, which are based on the automated execution of preprogrammed instructions in accordance with their informational model. In this manner, they may make decisions that achieve the intended objectives through the examination of the subject matter of the contract, its elements, and its conditions, including the presentation of the product or service, the specification of its quality, the competitiveness of its price, the terms and methods of payment, the guarantees provided and their duration, after-sales services, and the buyer's option to rescind, among other aspects.

Once the negotiation phase is completed and the financial transaction is executed, the artificial intelligence program designed for negotiation assumes control. It determines the behavior of the intelligent agent in order to achieve its objectives, thereby enabling the evaluation of its performance through measuring the level of customer satisfaction regarding the other party's fulfillment of its obligations, as well as identifying deficiencies and shortcomings. This information may subsequently be utilized to select more suitable customers or optimal consumers (Fatima Al-Zahra, 2018, p. 81) for conducting transactions or completing deals.

The use of intelligent agents may also be envisaged in adhesion contracts, where a degree of compatibility and alignment may be observed between their programming and the regulatory framework governing such contracts. Traditional adhesion contracts are likewise typically presented in the form of pre-established templates prepared by the stronger party, namely the service provider or the monopolistic supplier of goods, which may be a company or institution. Examples include consumer contracts, employment contracts, and insurance contracts. The application of artificial intelligence to adhesion contracts therefore constitutes a fertile field, as this model predominates in the era of the digital revolution, where users, in particular, engage under complex pre-established conditions in the context of long-term service contracts.

As a result of ongoing technological developments, adhesion contracts may take the form of intelligent designs concluded automatically through artificial intelligence systems or technologies. This contributes to accelerating contract formation, reducing costs, and enhancing transparency in the conclusion of contracts. However, notwithstanding these advantages, the application of artificial intelligence to adhesion contracts may exacerbate disparities and reinforce imbalances, as such systems are programmed to protect the interests of the company that designed them.

However, artificial intelligence technology can, in parallel, assist the service consumer by analyzing the terms of adhesion contracts and identifying harmful, abusive, or unusual provisions through the automated analysis of clauses and data. This may enhance the restoration of contractual balance and strengthen consumer protection. The intelligent agent can influence the contractual landscape (Soliu, 2024) in the conclusion of contracts through its capacity to draft agreements, refine contractual provisions, and advance contractual language. It constitutes an effective tool for contract review, characterized by precision in detecting defects, identifying errors and potential legal loopholes, and possessing the capability to address and resolve such issues.

IV- Conclusion:

In light of the foregoing, artificial intelligence has demonstrated its capacity to transform the legal framework governing contract formation in an era marked by a clear interaction between intelligent machines and humans, as well as its ability to simulate human intelligence in a parallel or even superior manner within the contracting process. The justification for its application lies in reducing the involvement of the contracting party at each stage of contract formation, given its ability to conclude contracts, review their provisions, and assess their conformity with pre-established conditions. However, practical realities necessitate the revision of legal texts in accordance with ongoing developments to ensure transparency and clarity, thereby safeguarding contracting parties in light of the widespread reliance on artificial intelligence and its applications.

Study Findings:

- Artificial intelligence constitutes a highly advanced system capable of simulating the intelligence of the human contracting party.
- In principle, artificial intelligence possesses the capacity to engage in contracting, either as a contracting party or on behalf of one as an intelligent agent.
- It represents an effective technology in facilitating contracting processes, drafting contracts, and reviewing their provisions, thereby reducing the effort required for contract formation, lowering costs, and minimizing human error in the contracting process.

Study Recommendations:

Based on the reciprocal relationship between law and technology, and in response to the need for legal intervention to address emerging phenomena, the law may regulate artificial intelligence and define its conditions and governing rules. Accordingly, the following recommendations are proposed:

- The enactment of legal provisions that support the conclusion of contracts using artificial intelligence, allowing it to substitute for intent, whether in offer or acceptance, while simultaneously providing protection against the risks associated with its use.

- In support of the principle of freedom of contract and its modalities, and alongside traditional methods and electronic means, the legislator may incorporate the phrase “by means of artificial intelligence or a smart machine,” for example.
- The introduction of legal provisions to regulate the rules governing the intelligent agent, including its authority, the limits of its agency, and its legal effects.

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Notes:

- [1]. According to the American scholar John McCarthy, if cognitive science aims to understand how the human brain functions, then AI engineers can build an intelligent machine capable of simulating human intelligence; however, it is not necessary for such a simulation to be constrained by the biological workings of the human brain.
- [2]. Smart contract technology relies on the properties of storage, data preservation and processing, and risk distribution, which makes it difficult to breach data, or to be exposed to loss or unauthorized modification.
- [3]. In fact, the principle of good faith is one of the general and well-established principles in the system of contract formation; however, it was, in reality, limited to the stage of contract performance rather than its formation, as reflected in the provisions of Article 107.
- [4]. In light of the digital transformation that has affected legal transactions, which have come to be conducted on the basis of pre-programmed codes capable of automatic execution, scholars have not agreed on a single designation. Some have opted for the term “Blockchain contracts,” others have referred to them as “self-executing contracts,” some have adopted the term “artificial intelligence contracts,” while others have chosen the designation “smart contracts.”
- [5]. Frank Easterbrook is an American judge and a prominent jurist in the field of law, and one of the supporters of the objective theory of contract, which is based on external manifestations in the form of words and actions without inquiring into intentions, adopting the maxim originally attributed to the English judge Lord Lord Atkin, and applying it at the level of the courts.
- [6]. A contract concluded through AI may be entirely written in the form of encoded symbols, which represents the original form of blockchain contracts. It may also be written in encoded symbols alongside a parallel contract drafted in natural language, or in the form of a hybrid model combining a contract written in encoded symbols with references to an agreement drafted in natural language. It may further take the form of a contract written in clear natural language while incorporating certain encoded symbols as mechanisms for signature and acceptance of terms, as well as for payment.