

The Self-Executing Contract Between Form and Content: A Juristic Characterization of Smart Contracts and Its Effects on Contract, Option, and Liability

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Abstract:

This study examines the jurisprudential (*fiqh*) characterization of smart contracts as a contemporary financial-transaction issue (*nāzilah*), addressing the problem of determining their juristic nature: are they a contract, a binding promise, or an agency (*wakālah*)? And is it sound to assign them a single comprehensive characterization? The study employs the inductive, analytical, and comparative methods. It first establishes the technical reality of the smart contract; then delimits the locus of dispute by distinguishing the technical container from the contractual content; and finally discusses and weighs the proposed characterizations. It concludes that the smart contract is an executorial container rather than an independent juristic essence; that the characterization follows the content and not the form; and that the most likely view, in its bilateral form, is that it is a contract concluded at formation with its fulfilment suspended (*munajjaz al-in'iqād mu'allaq al-istifā'*), the code being a mere instrument of fulfilment, neither an agent nor a contracting party. It then clarifies the effect of this on the options, gharar, and liability, and compares it with the Algerian legal framework, recommending that each form of the contract be regulated according to its content and that the legislative gap be addressed.

Keywords: Smart contracts; Juristic characterization; Delimiting the locus of dispute; Blockchain; Contemporary financial transactions.

INTRODUCTION

Praise be to God, who perfected for us the religion and completed His favour upon us; and may peace and blessings be upon him who was sent with the final law, valid for every time and place. To proceed:

Among the distinctive features of the Islamic Sharia is its capacity to absorb newly arising issues (*nawāzil*), and the ability of its foundations and maxims to govern ever-renewing events and refer them back to the firmly established rulings. Since our age has witnessed a technological leap that has transformed the patterns of contracting and financial dealing, the need has arisen for a legal-Sharia examination of these developments, in terms of both their characterization and their application.

Smart contracts are among the most prominent of these developments — self-executing programs operating upon a conditional logic, by virtue of which obligations are carried out automatically without any human intermediary at the moment of execution. Much has been said about their ruling, yet there is a scarcity of disciplined treatments that characterize them in a way that distinguishes their technical container from their contractual content; and it is this gap that

the present research seeks to fill. The central thesis the research establishes and builds upon is that the smart contract is not an independent juristic essence, but rather an executorial vessel of varied contents, so that the characterization follows the content and not the form.

First: The Research Problem

The research problem centres on the following question: What is the correct juristic characterization of smart contracts? Are they to be characterized as a contract, a binding promise, or an agency? And is it sound, in the first place, to assign them a single comprehensive characterization, or does the characterization follow the contractual content executed through them? From this branch several subsidiary questions: What is the technical reality of the smart contract? Where, precisely, does the locus of dispute lie? What is the effect of its features — such as self-execution and irreversibility — upon the options, gharar, and liability? And how does this map onto the Algerian legal framework?

Second: The Significance and Aims of the Research

The research connects to a widely diffused issue in contemporary financial and digital transactions; researchers and muftis stand in need of a disciplined juristic grounding that resolves the confusion surrounding the characterization of this issue; and there is a paucity of studies that single out juristic ‘characterization’ (*takyīf*) for examination, distinguishing it from the mere statement of the ‘ruling’ (*ḥukm*) or the application of ‘legal maxims’ (*qawā'id*).

Third: Prior Studies and the Locus of Contribution

Earlier studies have treated this subject from its various angles — among them ‘Abd Allāh al-‘Uqayl’s study “Blockchain Technology: Its

Characterization and Juristic Applications,” the study “Smart Contracts and the Role of Legal Maxims in Adjudicating Them,” as well as the proceedings of the International Islamic Fiqh Academy on the financial-technology track. These studies were of benefit in clarifying the reality, the ruling of dealing, and the governing maxims.

However, most of them tend toward establishing the ‘ruling’ or applying the ‘maxims,’ whereas the present research is distinguished by its focus on ‘characterization,’ built upon a central thesis: that the smart contract is an executorial container, not an independent juristic essence, and that the characterization follows the content and not the form. This yields a detailed characterization according to the contract’s forms, rather than an absolute, single preponderance — and herein lies the intended scholarly contribution.

Fourth: Aims of the Research

To establish the technical reality of the smart contract; to delimit the locus of dispute in its characterization precisely; to discuss the proposed juristic characterizations (as a contract, a binding promise, or an agency) and weigh between them; to clarify the juristic effects flowing from the characterization, especially regarding the options, gharar, and liability; and to compare this with the Algerian legal position.

Fifth: Research Plan

The nature of the subject required dividing it into four topics: the first on the reality of smart contracts; the second on delimiting the locus of dispute in their characterization; the third on the juristic characterizations, their discussion, and the preponderance; and the fourth on the juristic effects flowing from the characterization — followed by a conclusion containing the principal findings and recommendations.

THE FIRST TOPIC: THE REALITY OF SMART CONTRACTS

Sound juristic characterization requires conceiving the object of judgement precisely, for a judgement about a thing is a branch of its conception. Since smart contracts are among the technical novelties in which the programmatic container is frequently confused with the contractual content, it is necessary first to establish their technical reality in a disciplined manner that protects the characterization from error — as set out in the following requirements.

First requirement: The Concept of the Smart Contract and Its Genesis

The “smart contract,” in its original terminological coinage, is not a contract in the legal or juristic sense; rather, it is a self-executing computer program operating on a conditional logic: “if the condition is met, the effect is executed automatically,” without need for human intervention or a trusted intermediary at the moment of execution. It has been defined as: “the meeting of the contracting parties’ wills through specialized software in the form of encrypted code, embodying the parties’ terms, their rights, and the obligations incumbent upon each, executed automatically within defined parameters acceptable in Sharia.”¹

The coining of the term is attributed to the researcher Nick Szabo in the 1990s, who

defined it as “a set of promises, specified in digital form, including the protocols within which the parties perform on these promises.” He gave as an example the vending machine, which receives the price and delivers the good automatically according to a programmed logic, without the intervention of a seller.²

‘Abd al-Sattār Abū Ghuddah defined it as: “protocols in encrypted form, through software capable of sending contracts from one person’s account to other accounts by registering on blockchain platforms³, without the intervention of a third party such as a notary, an intermediary, or any central body.”⁴

This idea remained theoretical until the emergence of blockchain technology, which provided the environment necessary for secure, decentralized execution; it then crystallized in practice with the Ethereum platform⁵, which made it possible to program complete smart contracts in dedicated languages, so the smart contract moved from a mere idea to a widely applied reality.

It is useful to distinguish two usages of the term: the self-executing *code* (the executing program), and the *smart legal contract* — the contractual agreement drafted in binding natural language, some of whose clauses are translated into automatically executable code. The former is an instrument of execution; the latter is the contractual obligation itself. Upon

¹ Mark Gates, *Blockchain: Ultimate Guide to Understanding Blockchain, Bitcoin, Cryptocurrencies, Smart Contracts and the Future of Money*, Wise Fox Publishing, 1st ed., 2017, p. 8.

² Nick Szabo, “Smart Contracts: Building Blocks for Digital Markets,” 1996, available at: https://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo.best.vwh.net/smart_contracts_2.html (Accessed: June 16, 2026).

³ The blockchain is defined as a distributed, encrypted digital ledger composed of a successive chain of mutually linked blocks, managed in a decentralized manner without need for a central authority overseeing it.

⁴ ‘Abd al-Sattār Abū Ghuddah, *Smart Contracts, Digital Banks and Blockchain*, paper presented to the 39th Al-Baraka Symposium on Islamic Economics, Dubai, UAE, 8–9 Ramadan 1440 AH / 13–14 May 2019, p. 214.

⁵ Ethereum is a decentralized computing platform based on blockchain technology, launched by Vitalik Buterin in 2015. It permits the creation and operation of smart contracts and decentralized applications (DApps). See: Andreas M. Antonopoulos & Gavin Wood, *Mastering Ethereum: Building Smart Contracts and DApps*, O’Reilly, 2018, pp. 1–15.

this distinction turns much of the delimitation of the locus of dispute.

Second requirement: The Features of the Smart Contract

The smart contract is distinguished by technical features that have a direct juristic bearing, resembling neither the features of traditional contracts nor those of electronic ones. The most important are as follows:

First — self-execution: as soon as the programmed condition is met, the effect is executed automatically, without depending on a renewed human will at that moment. This is the greatest locus of juristic difficulty, for it raises the question of the separation of consent (*riḍā*) from the moment of performance.⁶

Second — reliance on the condition: the structure of the smart contract is purely conditional, connecting it to the question of the suspension (taʿlīq) of contracts.

Third — transparency and security: smart contracts enhance security and transparency in carrying out the contractual operation and executing all obligations, owing to the blockchain platform that is the guarantor and trusted custodian of the legal documents pertaining to the stages of conclusion through to execution — verifying their soundness and their reliable, swift delivery to the parties without manipulation or forgery, while

preserving a high transparency whereby all users may inspect them.⁷

Fourth — immutability (non-amendability and irreversibility): once deployed on the blockchain network the contract becomes — generally — non-amendable and non-stoppable except by pre-programmed mechanisms. This raises a difficulty concerning the exercise of rights arising upon the contract — such as the option of stipulation (*khiyār al-sharṭ*), the option of defect (*khiyār al-ʿayb*), rescission by mutual consent (*iqālah*), and judicial annulment — and the extent to which programmatic determinism is consistent with the flexibility the Sharia established in dealing with contingencies.⁸

Fifth — decentralization: smart contracts are based on blockchain technology, which does not rely on centralization in storing, processing, and verifying data; data are stored across multiple nodes, making it difficult for them to be lost, breached, or altered.⁹

Sixth — the need for external data sources (Oracles): the smart contract does not itself perceive facts external to the network, but relies on intermediaries that feed it data, which raises the difficulty of evidential reliability and the effect of error therein.¹⁰

Third requirement: The Forms and Types of the Smart Contract

The forms of the smart contract are as numerous as their contractual content, and this

⁶ See: Īnās Ḥamad Qūṭayshāt et al., “The Legal Nature of Smart Contracts According to the Theory of Contract in Jordanian Civil Law,” *Jordanian Journal of Law and Political Science*, vol. 14, no. 4, 2022, p. 90.

⁷ Ḥamad ʿIrfān al-Khaṭīb, “Smart Contracts: Authenticity and Methodology — A Deep Critical Study in Philosophy and Grounding,” *Journal of the Kuwait International Law School*, Kuwait, vol. 8, no. 3, June 2020, p. 164.

⁸ Muʿammar Ibn Ṭarriyya, “Smart Contracts Embedded in the Blockchain: What Challenges for the Contract System Today?,” *Journal of the Kuwait International Law School*, vol. 7, no. 4 (special supplement), part 1, May 2019, pp. 495–506.

⁹ Aḥmad Muṣṭafā al-Dabūsī, “The Legal Problematics of the Smart Agent’s Conclusion of Smart Commercial Contracts in the Blockchain Era,” *Journal of the Kuwait International Law School*, Kuwait, no. 8, December 2020, p. 391.

¹⁰ See: Andreas M. Antonopoulos & Gavin Wood, *Mastering Ethereum: Building Smart Contracts and DApps*, O’Reilly Media, 2018, pp. 255–258; and Muḥammad ʿIrfān al-Khaṭīb, “Smart Contracts: Authenticity and Methodology,” *Journal of the Kuwait International Law School*, vol. 8, no. 3, 2020, pp. 186–189.

multiplicity is the mainstay of the research's thesis. Among its forms are full commutative contracts (*mu'āwada't*), such as sale and lease; escrow and guarantee arrangements, in which the code holds the price or asset until a condition is met and then releases it; automatic settlement and clearing mechanisms, in which the role of the code is confined to executing a prior obligation; and multi-party contracts and the governance of decentralized organizations — the most complex, which may approach the characterization of a partnership (*sharikah*). The purpose of this division is to show that the “smart contract” is a technical vessel into which differing contracts are poured, so that it is not sound to apply a single characterization to it wholesale.

Fourth requirement: Its Distinction from the Traditional Electronic Contract

Many confuse the smart contract with the electronic contract, though they differ in a consequential essence. The traditional electronic contract is an ordinary contract concluded through an electronic medium, but its execution remains human, entrusted to the will of the contracting parties; the medium therein is an instrument for expressing the will, not for executing it. The smart contract, by contrast, is distinguished by the fact that execution itself is automated and guaranteed by the code, not depending on a later performance by the contracting party. The difference is not in the means of conclusion but in the mechanism of performance and fulfilment; and it is this difference that calls for an independent characterization and prevents its being analogized to the electronic contract absolutely. Thus the object of juristic examination is a

composite of a contractual agreement and a self-executing mechanism.

THE SECOND TOPIC: DELIMITING THE LOCUS OF DISPUTE IN THE CHARACTERIZATION OF SMART CONTRACTS

Much of the disagreement over newly arising issues is merely verbal or misdirected, arising from a failure to distinguish the locus of agreement from the locus of dispute. Since the smart contract is a composite object — a contractual agreement and a self-executing mechanism — it is necessary to delimit the locus of dispute precisely, separating that in which there is no disagreement from that which is the object of examination, as follows.

First requirement: The Locus of Agreement (That in Which There Is No Dispute)

There are matters in the domain of smart contracts that ought not to be made loci of dispute — by way of realizing the true point of disagreement and narrowing its scope. They may be summarized as follows:¹¹

First: the technology in itself is a means, not described independently as permitted or forbidden, since the basic rule regarding means and instruments is that they follow their objectives and that for which they are used. The discussion concerns the contractual content executed through it, not the technical container itself.

Second: the embodied agreement, once its pillars and conditions are fulfilled — mutual consent, a lawful object capable of being delivered, and the legal capacity (*ahliyyah*) of the contracting parties — is a valid contract in general, its being expressed by programmatic code not removing it from validity; for

¹¹ See: Abū Ishāq al-Shātibī (d. 790 AH), *al-Muwāfaqāt*, ed. Abū 'Ubaydah Mashhūr b. Ḥasan Āl Salmān, intro. Bakr b. 'Abd Allāh Abū Zayd, Dār Ibn 'Affān, 1st ed., 1417 AH/1997, vol. 2, p. 222. On the conclusion of a contract by reciprocal

exchange (*ma'āṭāh*): Muwaffaq al-Dīn Ibn Qudāmah, *al-Mughnī*, ed. 'Abd Allāh al-Turkī and 'Abd al-Fattāh al-Ḥulw, Dār 'Ālam al-Kutub, Riyadh, 3rd ed., 1417 AH/1997, vol. 6, pp. 5–9.

intelligible writing and signs stand in the place of utterance in the view of the majority of jurists, the criterion being the attainment of a mutual consent that discloses the will.

Third: if the smart contract embodies something forbidden in its content — such as *ribā*, excessive *gharar*, or an unlawful object — it is void or defective accordingly; not for a cause in the technical container, but for a cause in the content.

Second requirement: The Locus of Dispute (The Point of Examination and Characterization)

The true locus of dispute is confined to the characterization of the self-execution mechanism and its effect upon the contract; from this branch several questions that are the pivot of the research:

The **first** is the separation of consent from the moment of execution: the smart contract executes automatically when the condition is met, without a renewed human will at that moment. Is a renewal of consent required at the time of performance for the validity of execution, or is the consent that counts that which obtained at formation, the self-execution being a fulfilment of the contract's requirement and not a new act of formation?

The **second** is the effect of irreversibility upon the rights of option: does programmatic determinism nullify the option of the session (*khiyār al-majlis*), of stipulation, and of defect — such that this impugns the contract's lawfulness — or can these be accommodated by programming that observes the periods of the options?

The **third** is the structure of the condition: is it outright execution (*tanjīz*) or suspension (*ta'līq*)? The **fourth** is the probative authority of evidence and the source of external data (the oracle) and the effect of error or manipulation therein. Thus the dispute is not over the permissibility or prohibition of the smart contract absolutely, but over the characterization of its mechanism and the effect of its features upon the contractual content.

The legal-theoretical (*uṣūlī*) investigation of this question is built upon the maxim: “*continuance does not require what inception requires*”¹². The Islamic Sharia does not require the concurrence of actual consent with each particular of performance; rather, it suffices that there subsist the constructive consent (*al-riḍā al-ḥukmī*) arising from the initial choice at formation. This is analogous to the lease contract (*ijārah*), where consent occurs at inception and its ruling continues with the renewed enjoyment of usufructs throughout the term, without a renewed will at each instance of benefit. Accordingly, consent in the smart contract attached to the condition and its consequence at the moment of programming and formation, so that automatic execution is a necessary extension of this constructively subsisting consent.

Third requirement: The Relation Between the Technical Container and the Juristic Content

This is the kernel of delimiting the object, and upon it the research's thesis is built. The confusion between the container (the programmatic mechanism) and the content (the contract executed through it) is the source of much of the disorder in prior studies, in which

¹² We might express it by saying: “the subsistence of consent in legal contemplation, by reason of the persistence of the effect,” because binding contracts do not require, for their continuation, a renewal of consent after they have been validly concluded; the consent that counts is that present at inception,

its effects continuing so long as no legal cause for rescission arises. See: Muḥammad Muṣṭafā al-Zuhaylī, *al-Qawā'id al-Fiqhiyyah wa-Taṭbīqātuhā fī al-Madhāhib al-Arba'ah*, Dār al-Fikr, Damascus, 1st ed., 1427 AH/2006.

a single ruling or characterization is sought for the smart contract wholesale, as though it were an independent juristic essence. The verified position is that the smart contract is an executorial vessel into which differing contracts are poured: it may carry a sale, a lease, a guarantee, or a settlement, so that the characterization follows the content and not the container. This is reinforced by the major maxim: “In contracts, what counts are intentions and meanings, not words and forms.” If what counts is the meaning and not the word, then a fortiori it is the contractual content and not the technical container. The fruit of this is that the characterizations to follow are not conflicting views one of which is preponderated absolutely; rather, each may be valid in one form and not another.¹³

Fourth requirement: The Source of Bindingness in the Smart Contract

It might be imagined that the programmatic code is what creates and imposes the obligation, but the verified position is otherwise. The source of bindingness is the prior mutual consent between the contracting parties, expressed by offer and acceptance, not the programmatic code; for the Lawgiver attached the effect of bindingness to the valid contract that fulfils its pillars and conditions, in fulfilment of His saying: “*O you who believe, fulfil your contracts*” [al-Mā'idah: 1], and His saying: “*unless it be a trade by mutual consent among you*” [al-Nisā': 29], and of the maxim “the Muslims are bound by their stipulations.” That which obligates in Sharia is the consent by which the contract is concluded; as for the code,

it is an instrument for fulfilling the contract's requirement, not the creator of it.

This yields an important practical effect: if the code malfunctions or contravenes what the two parties mutually agreed, the criterion is the original mutual consent, not what the program executed, since the error of the instrument in execution is referred back to the original contract. By this the difficulty of the maxim “Code is Law” is resolved: the code is a means governed by the requirement of the contract, not a governor over it. The international Sharia standards have attended to regulating this domain, such as Sharia Standard No. (38) on online financial dealings issued by AAOIFI, and the resolutions of the International Islamic Fiqh Academy on the financial-technology track.¹⁴

THE THIRD TOPIC: THE JURISTIC CHARACTERIZATIONS OF SMART CONTRACTS AND THEIR DISCUSSION

Building upon what has been established — that the characterization follows the content and not the container — we set out the proposed characterizations and discuss each with its evidence, then arrive at a detailed preponderance, as follows.

First requirement: Characterizing It as a Contract (the Code Being a Form and an Instrument)

The import of this view is that the smart contract is the contract itself, expressed by programmatic code; the code is a form of offer and acceptance and an instrument for fulfilling the contract's requirement. It is argued for by the fact that intelligible writing and signs stand

¹³ See: Tāj al-Dīn 'Abd al-Wahhāb b. 'Alī al-Subkī (d. 771 AH), al-Ashbāh wa-al-Nazā'ir, ed. 'Ādil Aḥmad 'Abd al-Mawjūd and 'Alī Muḥammad Mu'awwad, Dār al-Kutub al-'Ilmiyyah, Beirut, 1st ed., 1411 AH/1991, vol. 1, p. 174; and Ibn Rajab al-Ḥanbalī (d. 795 AH), Taqrīr al-Qawā'id wa-Tahrīr al-Fawā'id, ed. Khālīd al-Mushayqih et al., Rakā'iz, Kuwait, 1st ed., 1440 AH/2019, vol. 1, p. 244.

¹⁴ Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), Sharia Standards, Sharia Standard No. (38): Online Financial Dealings, Bahrain; and on fulfilling the promise see: International Islamic Fiqh Academy, Resolution No. 40–41 (5/2–3), 5th session, Kuwait, 1409 AH/1988.

in the place of utterance, and that contracts are concluded by reciprocal exchange (*ma'ātāh*) in the view of many jurists, the criterion being the attainment of mutual consent and the indication of the circumstance.

The discussion: this characterization is correct as regards the embodied agreement, but it falls short of encompassing the distinguishing feature of the smart contract — the mechanism of self-execution and its determinism; it is a characterization of the content, not of the mechanism. So the unqualified statement that “the smart contract is a contract” is correct in general but deficient in exposition, for the question concerning the description of the execution mechanism remains.

Second requirement: Characterizing It as a Binding Promise

The source of this view is that the coiner of the term defined it as “a set of promises,” and that some of its forms are a unilateral undertaking. It is argued for by the position of the Mālikīs and those who agreed with them concerning the bindingness of the promise (*wa'd*) when the promisee, on its account, has entered into some expense or obligation¹⁵ — upon which the Academy's resolution on *murābahah* for the purchase-orderer was built.¹⁶

The discussion: the promise, in its essence, is the creation of a future, non-binding obligation in the view of the majority, whereas the smart contract, in its predominant form, embodies a mutual obligation concluded outright, not a mere promise of a later creation. To characterize it as a promise is true only of the form involving a unilateral obligation, and it is not sound to generalize it to the full bilateral

forms. The essential difference is that the promise is a stage prior to the contract, creating a future obligation, whereas the smart contract, in most of its forms, is a stage of executing the contract after its conclusion — so they differ in object and rank.

Third requirement: Characterizing It as an Agency (and the Problem of the Agent's Capacity)

The source of this view is that the programmatic code undertakes execution of the disposition when the pre-agreed conditions are met, thus resembling the agent (*wakīl*). However, this characterization faces an essential difficulty: agency (*wakālah*), in juristic usage, is a deputation of another in a permissible, known disposition, and the agent must have a capacity enabling him to undertake the disposition and from whom the act issues by way of intention and will. The jurists therefore stipulated that the agent be one whose disposition is valid in that wherein he is deputed¹⁷. The programmatic code, however, is neither a person nor a body possessing capacity, and is not characterized by will or intention; it is merely a set of programmed commands operating automatically. Hence the basis (*manāt*) of legal agency is absent in it, for agency is among the contracts of deputation, and deputation cannot be conceived except from one to whom the Sharia address may be directed — and a program is not a subject of the Sharia address, so it is neither a deputy nor an agent.

Accordingly, the nearer view is to regard the programmatic code as an instrument or technical means that the two parties have

¹⁵ See: Abū al-Walīd Muḥammad b. Aḥmad b. Ruṣḥd al-Qurṭubī (the grandfather, d. 520 AH), *al-Bayān wa-al-Taḥṣīl*, ed. Muḥammad Ḥajjī et al., Dār al-Gharb al-Islāmī, Beirut, 2nd ed., 1408 AH/1988, vol. 4, p. 299.

¹⁶ See: International Islamic Fiqh Academy, Resolution on Fulfilling the Promise and *Murābahah* for the Purchase-

Orderer, 5th session, Kuwait, 1409 AH/1988, Resolution No. 40–41 (5/2 and 5/3), vol. 2, p. 754.

¹⁷ Ibn Qudāmah, *al-Mughnī*, vol. 7, p. 205.

harnessed to execute what they agreed upon, not as a deputy in the disposition. It is more akin to the means a person uses to fulfil his rights — like the scale in estimating a measure, locks and timed devices in regulating enjoyment, or automatic payment systems in executing transactions. Thus self-execution is an effect of operating a technical means the parties prepared in advance, not a disposition issuing from an agent independent of them.

Even granting a resemblance to deputation, it is nearer to a mere authorization in fulfilment and the execution of what was agreed than to juristic agency, which requires the deputation of a person of capacity in creating and concluding dispositions. Nor is this refuted by what some contemporary researchers hold in attempting to characterize smart software on the basis of “agency by instrument” or the “non-human deputy,” analogizing to programmed beasts or the sending of letters with messengers; for the juristic agent possesses the authority to “create the disposition” by his intention and capacity, whereas the code does not create a new disposition *ab initio*, its function being confined to “completing the execution” of an obligation already created and its pillars determined in advance by the two parties.

Fourth requirement: Characterizing It as a Suspended Contract with a Self-Executing Mechanism (the Preponderant View in the Bilateral Forms)

The import of this view is that the smart contract, in its full bilateral form, is a valid contract whose fulfilment has been suspended upon a disciplined, known condition, with

execution programmed automatically. This connects to the jurists’ disagreement over suspending contracts upon a condition: the majority forbid suspending outright transfers of ownership, such as sale, upon a future condition, while permitting suspension in such matters as agency, guarantee, and release (*ibrā’*)¹⁸, whereas Ibn Taymiyyah and Ibn al-Qayyim took an expansive view in permitting suspension and stipulation, on the basis that the default in contracts and stipulations is validity and bindingness so long as they do not contravene a text or a Sharia objective.¹⁹

The aspect of preponderance is that the safest view, and the furthest from the locus of disagreement, is to characterize it as a contract concluded outright but with its fulfilment deferred or suspended upon a disciplined condition; for the conclusion was accomplished by mutual consent at formation, and it is only the execution — not the conclusion — that was suspended, and suspending fulfilment upon a known, disciplined condition is unobjectionable. As for one who takes an expansive view of suspension, it is valid in his view to characterize it as a contract lawfully suspended from the outset. On both characterizations, the code is an instrument of fulfilment, neither a contracting party nor an agent.

Fifth requirement: The Composite Preponderant Conclusion (Characterization According to Content)

In application of the research’s thesis, the preponderance is not a single absolute view but a detailed characterization according to the form and content of the smart contract: the form

¹⁸ Ibn Rushd al-Ḥafīd (d. 595 AH), *Bidāyat al-Mujtahid wa-Nihāyat al-Muqtaṣid*, ed. Farīd al-Jundī, Dār al-Ḥadīth, Cairo, 1425 AH/2004, vol. 3, pp. 177–178; al-Qarāfī (d. 684 AH), *al-Dhakhīrah*, ed. Muḥammad Ḥajjī et al., Dār al-Gharb al-Islāmī, Beirut, 1st ed., 1994, vol. 8, p. 5.

¹⁹ See: Ibn Taymiyyah, *Majmū‘ al-Fatāwā*, comp. ‘Abd al-Rahmān b. Muḥammad b. Qāsim, King Fahd Complex for the Printing of the Holy Qur’ān, Medina, 1425 AH/2004, vol. 29, p. 346; Ibn al-Qayyim, *I‘lām al-Muwaqqi‘in ‘an Rabb al-‘Ālamīn*, ed. Mashhūr b. Ḥasan Āl Salmān, Dār Ibn al-Jawzī, KSA, 1st ed., 1423 AH, vol. 3, p. 107.

of full commutation is a commutative contract concluded outright with suspended fulfilment; the form of escrow and guarantee is nearer to deposit, guarantee of payment, or pledge (*rahn*), according to how it is structured; the form of automatic settlement is the fulfilment of a prior obligation, approaching transfer of debt (*hawālah*) or set-off (*muqāṣṣah*); and the unilateral form is a binding promise in the view of those who hold it. In all these forms, the programmatic code remains an instrument harnessed for fulfilling the contract's requirement, not an independent juristic essence. By this the preponderance is consistent with the delimitation of the locus of dispute, and it becomes clear that the correct question is not "What is the characterization of the smart contract?" but "What is the contractual content executed through this mechanism?"

THE FOURTH TOPIC: THE JURISTIC EFFECTS FLOWING FROM THE CHARACTERIZATION

The fruit of the characterization appears only in its practical effects. Since we preponderated that the smart contract is a contract concluded outright with suspended fulfilment, and that the programmatic code is a harnessed instrument, neither an agent nor a contracting party, there branch from this rulings concerning the options, gharar, and liability, which we set out and then compare with the Algerian legal position.

First requirement: The Effect of the Characterization on the Contract's Options

It follows from regarding the code as an instrument for executing the contract, not an independent contractual essence, that programmatic determinism does not forfeit the lawful rights and options established for the parties; for the default is that means follow objectives and do not nullify what the Sharia

established as rights. As for the option of the session (*khiyār al-majlis*) — a matter of disagreement, the Mālikīs and Ḥanafīs not affirming it according to the well-known view, while the Shāfi'īs and Ḥanbalīs affirm it — its application to electronic contracts is coherent only on the view of those who affirm it, and is then estimated by what stands in the place of the contract session. As for the option of stipulation (*khiyār al-shart*), it can be accommodated technically by programming a defined period for withdrawal before the final execution settles. As for the option of defect (*khiyār al-'ayb*), it is established by the jurists' agreement in general, and automatic execution does not preclude claiming its due if the defect appears — whether by return or by compensation for the deficiency (*arsh*) — even if this requires resort to mechanisms outside the technical platform or to arbitration.

Accordingly, the lawfulness of the smart contract does not depend merely on its being self-executing, but also on the extent to which it preserves the lawful rights established for the parties, such that it is not designed in a way that nullifies an established option or forfeits a lawful right without consent that counts in Sharia. Were that to occur, the difficulty would lie in the stipulation or in the manner of designing the contract, not in the technology itself.

Second requirement: Gharar and Ignorance in the Programmatic Condition and Data Sources

The possibility of gharar arises from two directions: ignorance of the programmatic condition, if it is not disciplined and known to both parties — especially the non-technical party — and reliance on external data sources. The criterion is that the gharar affecting validity is the excessive kind leading to dispute in commutative contracts; so if the condition is disciplined, its outcome known, and the data

source reliable, there is no effective gharar; but if the code is obscure or the data source liable to manipulation, then the vitiating gharar has returned.²⁰

From this a practical recommendation is reached: stipulating the transparency of the code and its auditing before contracting, and the multiplicity of data sources, to raise ignorance and repel gharar. This is part of realizing the basis of the contract's validity, not a matter of superfluity.

Third requirement: Characterizing the External Data Source (Oracle) in Terms of Report, Testimony, Expertise, and Proof

It has been established that the smart contract relies on an intermediary that feeds it data, called the “oracle,” which activates automatic execution when its condition is met. This intermediary admits of juristic examination from four angles:

As to report (khabar): what the oracle conveys is a report about an event, subject to the rulings on accepting a report — the requirement of trust in the source and verification: “*If a transgressor brings you news, verify it*” [al-Ḥujurāt: 6]. Its establishment is strengthened by the multiplicity of its sources (decentralized oracles), resembling the corroborated widespread report (istifāḍah). As to testimony (shahādah): if it were placed in the rank of a witness, the capacity for testimony in its juristic, accountable sense is not realized in it; for the program is neither accountable (mukallaf) nor competent to give testimony, so the nearer view is that it is a means of proof, not testimony in the technical sense.

As to expertise (khibrah): the specialized oracle — such as estimating prices — resembles the people of expertise and valuation, so its consideration is tied to precision, neutrality, and specialization. As to proof (ithbāt): the nearer view is to characterize it as one of the modern means of proof — a strong presumption (qarīnah) subject to the rules of the probative authority of presumptions — its authority being tied to reliability and the impossibility of manipulation. The oracle problem — the risk of manipulation or interruption — is the basis of Sharia caution; for whatever execution is built upon a false report is referred back to the original mutual consent, since what counts is the reality, not the form of execution.²¹

Fourth requirement: Liability and Responsibility upon a Malfunction or Breach of the Code

If the loss of property results from an error, malfunction, or breach of the code, the preponderant characterization (the code being an instrument in the hand of the contracting party) entails that the loss of property through a defect in the harnessed instrument does not forfeit liability from the one upon whom it is due; and it is detailed according to transgression and negligence. If the malfunction is from the developer, through negligence or fraud in the workmanship, then he is liable, by way of the liability of artisans (ḍamān al-ṣunnāʿ); if from the contracting beneficiary, by his neglect of the security conditions, then the negligence is his; as for an external breach, if it occurs without transgression or negligence, with the means of protection having been fulfilled, it may be

²⁰ On the criterion of effective gharar see: al-Nawawī (d. 676 AH), al-Minhāj Sharḥ Ṣaḥīḥ Muslim, Dār Iḥyāʾ al-Turāth al-ʿArabī, Beirut, 2nd ed., 1392 AH, vol. 10, p. 156.

²¹ On treating presumptions as recognized means of proof see: Ibn al-Qayyim (d. 751 AH), al-Ṭuruq al-Ḥukmiyyah fī al-

Siyāsah al-Sharʿiyyah, ed. Nāyif al-Ḥamad, Dār ʿAtāʾāt al-ʿIlm (Riyadh) and Dār Ibn Ḥazm (Beirut), 4th ed., 1440 AH/2019, vol. 1, p. 4; and Ibn Farḥūn (d. 799 AH), Tabṣirat al-Ḥukkām, Maktabat al-Kulliyāt al-Azhariyyah, 1st ed., 1406 AH/1986, vol. 1, p. 241.

annexed to an unforeseeable calamity (jā' iḥah) — otherwise the negligent party is liable.²²

Fifth requirement: Comparison with the Algerian Legal Position

The Algerian legislator has not singled out the smart contract for a special regime, but guidance may be drawn from the general framework for electronic contracting. Its most prominent texts are Law 15-04 of 2015, setting the general rules for electronic signature and certification; Law 18-05 of 2018 on electronic commerce, which for the first time defined the electronic contract and adopted the electronic instrument and signature as two means of proof; and Law 18-07 on the protection of natural persons in the processing of personal data.

An important point of contact is that many smart contracts run on networks relying on cryptocurrencies, while the Algerian legislator prohibited dealing in virtual currency under Article 117 of the Finance Law for 2018 (and Law No. 25-10 of 2025 expanded this prohibition). Thus there is a conflict between the predominant technical container of the smart contract and the Algerian legal framework. The upshot is that Algerian fiqh and law meet in their regard for mutual consent and the primacy of content, but diverge in that the law has not yet regulated the features of self-execution, determinism, and liability — which it is recommended be addressed legislatively to close the gap.

The legislative lacuna widens when the technical environment of smart contracts is set against the Algerian legal system; for Law 18-05 on electronic commerce (Article 8 and following) requires a centralized contractual system based on two parties of known identity

and an accredited electronic supplier, whereas smart contracts found their infrastructure on “decentralized anonymity” through encrypted wallets that follow no central authority. This creates a major practical gap that renders the enforcement of current laws upon smart contracts effectively unattainable from a practical and supervisory standpoint.

CONCLUSION

After this survey of the characterization of smart contracts, the principal findings and recommendations may be summarized as follows.

First: Principal Findings

- The smart contract is, in origin, a self-executing program, not an independent juristic essence, but rather an executorial container into which differing contracts are poured.
- The locus of dispute does not lie in the permissibility or prohibition of the smart contract absolutely, but in the characterization of its self-execution mechanism and the effect of its features upon the contractual content.
- The characterization follows the content and not the container, in accordance with the maxim that what counts in contracts are intentions and meanings; so it is not sound to single out the smart contract for one comprehensive characterization.
- Characterizing it as a contract is correct as regards the content but deficient as regards the mechanism; as a promise, true only of the unilateral form; and as an agency, weak, owing to the absence of the agent's capacity in the code.
- The preponderant view, in the bilateral form, is that it is a contract concluded outright with

²² See: al-Bahūtī (d. 1051 AH), *Sharḥ Muntahā al-ʾIrādāt*, ʾĀlam al-Kutub, Beirut, 1st ed., 1414 AH/1993, vol. 2, p. 129; and Ḥamad b. Muḥammad al-Ḥājirī, *al-Qawāʿid wa-al-*

Ḍawābiṭ al-Fiqhiyyah fī al-Ḍamān al-Mālī, Dār Kunūz Ishbīliyyā, KSA, 1st ed., 1429 AH/2008, pp. 160–164.

its fulfilment suspended upon a disciplined condition, the code being an instrument of fulfilment, neither an agent nor a contracting party.

- Programmatic determinism does not forfeit the established lawful options, and the contract's lawfulness is conditioned upon its not being designed to cancel a lawful right.
- The Algerian legislator has not singled out the smart contract for a special regime; its general framework for electronic contracting remains a reference, with a conflict owing to the prohibition of virtual currency.

Second: Principal Recommendations

- Methodically distinguishing the technical container from the juristic content in studying every technical issue, to avoid undisciplined generalization.
- Stipulating the transparency of the code, its auditing, and the multiplicity of data sources, to raise ignorance and repel gharar in smart contracts.
- Observing the programming of smart contracts in a way that preserves the lawful options and their periods before final execution.
- Calling upon the fiqh academies to issue detailed regulations for the forms of the smart contract according to their content, not as a single whole.
- Calling upon the Algerian legislator to close the legislative gap in regulating self-execution, determinism, and liability in smart contracts.

And God the Exalted knows best; may God's peace and blessings be upon our Prophet Muḥammad and upon all his family and companions.

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