Comparative Evaluation of the Mental Elements of Crimes Arising from Artificial Intelligence in Imami Jurisprudence and International Criminal Law

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Abstract

The rapid advancement of artificial intelligence has challenged the traditional concept of the "mental element of crime" within criminal justice systems. This study aims to conduct a comparative analysis of the mental elements of crimes arising from artificial intelligence within two frameworks: Imami jurisprudence and international criminal law. The research adopts a descriptive–analytical method with a comparative approach, and data have been collected through library research and documentary analysis. According to the findings, both systems currently regard artificial intelligence as lacking an independent mental element (intent, knowledge, or mens rea) as well as criminal capacity. In Imami jurisprudence, artificial intelligence is classified as an "object" or "property," and liability is transferred to human agents (such as designers, manufacturers, and users) based on principles including liability for destruction (ḍamān al-itlāf), causation (tasbīb), and the no-harm rule (qāʿidat lā ḍarar). The focus of this system is on individual, duty-based moral responsibility. In contrast, international criminal law, drawing on its experience with organized crimes, has moved toward developing novel concepts such as command responsibility, risk-based liability, and the notion of electronic personality, in order to address the complexity and distributed nature of decision-making in the development of advanced artificial intelligence. The comparative conclusion indicates that Imami jurisprudence emphasizes the individual transfer of responsibility, whereas international criminal law adopts a functionalist perspective and moves toward mechanisms of collective and institutional responsibility. It is therefore recommended that the Iranian legal system, while preserving its jurisprudential foundations, draw on the capacities of both approaches to enact specific legislation and recognize "chain liability" and a "duty of care" for actors in the field of artificial intelligence.

Keywords: Mental element of crime, artificial intelligence, Imami jurisprudence, international criminal law, criminal liability.

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1. Introduction

The Fourth Industrial Revolution and the emergence of smart technologies, particularly artificial intelligence, have transformed not only economic and social structures but also the legal foundations governing societies (Nemitz, 2018). Artificial intelligence is defined as "a system capable of simulating human mental processes such as perception, reasoning, learning, and problem-solving" (Zeytin & Gencay, 2019). The extensive application of this technology in areas such as autonomous transportation, medicine, military affairs, and the judiciary, while creating unprecedented efficiencies, has also provided the ground for the commission of novel and complex crimes (Ghavamipour Sereshkeh & Mahmoudi, 2025). Crimes such as automated cyberattacks, algorithmic discriminatory decision-making, or harm resulting from defects in autonomous systems exemplify these challenges.

At the core of criminal law debates in confronting this phenomenon lies the concept of the "mental element of crime." The mental element, which relates to the psychological and internal states of the perpetrator (such as intent, knowledge, mens rea, and criminal negligence), constitutes a necessary condition for the realization of criminal liability in most legal systems, including Iranian law grounded in Imami jurisprudence and international criminal law. The fundamental question, however, is whether an artificial intelligence system that lacks human consciousness and will can possess a mental element and, if a crime occurs, how such an element can be established and attributed to a person or entity.

This question necessitates an in-depth examination within two distinct legal frameworks. The first is Imami jurisprudence, which, as the primary source of legislation in Iranian criminal law, is based on anthropocentric and duty-oriented foundations. The second is international criminal law, which, owing to its transnational and largely practice-oriented nature, seeks solutions for serious crimes of an international character. A comparative analysis of these two systems can reveal their points of convergence, divergence, and complementary capacities in addressing this emerging challenge.

The main research question is how the mental element of crimes arising from artificial intelligence is analyzed within Imami jurisprudence and international criminal law, and what similarities and differences exist in the approaches adopted by these two systems in dealing with this challenge.

2. Theoretical Framework

2.1. The Mental Element of Crime in Imami Jurisprudence

In Imami jurisprudence, criminal responsibility ("liability" or "punishment") is contingent upon the existence of criminal capacity. According to jurisprudential sources, the elements of criminal capacity include reason, maturity, and free will. An insane person, a minor, or a compelled individual, due to the absence of one of these conditions, is deemed to lack legal obligation and criminal responsibility (Najafi, 1986). The mental element is manifested through concepts such as intent (niyyah), knowledge, and deliberateness. For example, in ḥadd crimes such as theft, the application of the prescribed punishment is conditional upon establishing the intent to steal and knowledge of its prohibition. Likewise, in crimes against persons (homicide and bodily injury), the distinction between intentional, شبه-intentional, and unintentional acts—each dependent on the perpetrator's intent and mental state—determines the applicable form of retaliation or compensation (Najafi, 1986).

Since artificial intelligence lacks reason, free will, and moral intent in the human sense, it is unequivocally considered to lack criminal capacity and, consequently, an independent mental element. From a jurisprudential perspective, artificial intelligence is therefore regarded as a "thing" or "property," and any act or omission attributed to it is, in reality, attributable to the human agents behind it (such as designers, programmers, or operators) (Hajideh-Abadi et al., 2014). Some jurists, invoking the principle of liability for destruction and the no-harm rule, assign responsibility for damages caused by intelligent systems to the relevant human actors (Rajabi, 2019).

2.2. The Mental Element in International Criminal Law

International criminal law, which addresses the gravest crimes of concern to the international community (crimes against humanity, war crimes, genocide, and aggression), likewise emphasizes the mental element. Article 30 of the Rome Statute of the International Criminal Court stipulates that, for criminal responsibility to arise, the conduct of the perpetrator must be accompanied by intent and knowledge. Concepts such as general intent and specific intent play a central role in defining international crimes (Cryer et al., 2019).

Nevertheless, due to its engagement with complex phenomena such as state and organized crimes, this legal system has developed doctrines such as command responsibility and forms of liability extending beyond individual perpetrators. At present, artificial intelligence is considered to lack independent international legal personality and, consequently, a mental element. However, novel debates have emerged. International bodies, including the European Parliament, have examined the concept of "electronic personality" for advanced autonomous systems (European Parliament, 2017). Moreover, approaches based on risk-based liability or structural fault have been proposed, shifting the focus from individual intent to risk control and the duty of care exercised by developers and operators (Nemitz, 2018).

3. Research Background

At the domestic level, several studies have examined the legal dimensions of artificial intelligence. Rajabi has addressed the legal personality of robots and artificial intelligence from the perspective of Islamic jurisprudence and law (Rajabi, 2019). Hajideh-Abadi and colleagues have explored criminal liability arising from robotic systems, emphasizing the challenges of identifying the responsible agent (Hajideh-Abadi et al., 2014). The article "An Introduction to the Legal Frameworks of Criminal Liability for Artificial Intelligence Systems" has analyzed the status of artificial intelligence as a "thing" and its role in criminal proceedings (Ghavamipour Sereshkeh & Mahmoudi, 2025). At the international level, discussions on the criminal liability of artificial intelligence and algorithmic wrongdoing have intensified in academic and institutional forums. However, no study has specifically undertaken a comparative analysis of the foundations of the mental element in Imami jurisprudence and international criminal law in relation to artificial intelligence. This research seeks to fill that gap.

4. Methodology

This study adopts a comparative–analytical design and is conducted using a qualitative method. Data collection relies on library and documentary research. The research corpus includes Imami jurisprudential texts (classical legal treatises and contemporary opinions), Iranian domestic laws (particularly the Islamic Penal Code of 2013), international instruments (such as the Rome Statute of the International Criminal Court), reports of international bodies, and authoritative scholarly articles. The collected data have been analyzed through content analysis and logical reasoning. The research process was carried out in three stages: first, extracting and explicating the foundations of the mental element in each system; second, analyzing the applicability or inapplicability of these foundations to artificial intelligence; and third, comparing the results and presenting a final analysis.

5. Comparative Discussion and Analysis

5.1. The Nature of Artificial Intelligence: From "Object" to "Quasi-Agent"

The first step in comparative analysis is determining the ontological status of artificial intelligence in the two systems.

a. Imami Jurisprudence

The prevailing view of artificial intelligence is instrumental and proprietary. Under the principle that individuals have dominion over their property, artificial intelligence, as a human-made product, falls within the category of property owned by its creator or owner (Kilicarslan, 2019). Accordingly, like any other tool, it lacks independent will and legal obligation. Any act attributed to it is ultimately the act of the human owner or user. This view aligns fully with the anthropocentric foundations of Imami jurisprudence, which link responsibility to legal obligation.

b. International Criminal Law

A similar approach exists, albeit with nuanced distinctions. Currently, artificial intelligence is regarded as an instrument or means of committing crime, akin to other technologies employed in international crimes. However, as systems become more complex and autonomous—such as lethal autonomous weapons systems—debates have emerged regarding an intermediate legal status. The proposal of "electronic personality" by the European Parliament is an example of this effort (European Parliament, 2017). This proposal neither recognizes artificial intelligence as a new natural person nor treats it merely as property, but rather envisages a status akin to legal personality with limited responsibilities, particularly in the area of compensation. This functionalist approach seeks to address accountability gaps where identifying a specific human agent proves difficult.

5.2. Analysis of the Mental Element: From Individual Intent to Collective Responsibility

a. Imami Jurisprudence and the Transfer of Intent

Since artificial intelligence lacks intent, the mental element must be sought in the associated human actors. This transfer may occur in several forms. Direct intent arises when a user knowingly and deliberately employs artificial intelligence to commit a crime. Criminal negligence is particularly relevant in unintentional harms, where designers or manufacturers fail to meet technical or ethical standards, thereby incurring liability under the principle of liability for destruction (Hajideh-Abadi et al., 2014). The doctrine of causation also applies where the harmful act of artificial intelligence is traced back to the person who created the causal condition, even in the absence of direct intent.

b. International Criminal Law and the Development of Doctrines

International criminal law similarly confronts the absence of a mental element in artificial intelligence. Proposed solutions include command responsibility, corporate or organizational liability, and risk-based responsibility. The doctrine of command responsibility allows liability where a superior knew or should have known of impending crimes and failed to prevent them. Organizational responsibility emphasizes collective intent or unlawful organizational culture, particularly relevant for corporations involved in developing high-risk systems. Finally, risk-based responsibility highlights the duty of care and risk control, whereby breach of this duty may ground criminal liability without proof of specific intent (Wachter et al., 2017).

5.3. Application Domains: The Example of Autonomous Weapons

To render the comparison more concrete, the issue of lethal autonomous weapons systems (LAWS) may be considered, as they constitute a paradigmatic example of the challenges posed by artificial intelligence at the international level.

a. From the Perspective of Imami Jurisprudence and Islamic Law of Armed Conflict

In Islamic jurisprudence governing armed conflict, principles such as distinction between combatants and civilians and the prohibition of unnecessary harm are firmly established. An autonomous weapon system lacks human discriminatory capacity and cannot reliably comply with these principles. Consequently, the production or use of such a weapon, where it is foreseeably likely to result in the killing of civilians or the infliction of unnecessary harm, may be deemed unlawful (ḥarām), and the human agents involved (including designers and commanders) may be held liable for the bloodshed and damages caused. The mental element (intent or fault) is thus located in the decision to design, deploy, or authorize the use of an uncontrollable and hazardous means of warfare (Abouzarri et al., 2022; Aghalar & Radi, 2022).

b. From the Perspective of International Criminal Law and International Humanitarian Law

The core debate in this context revolves around violations of the principles of distinction and proportionality under international humanitarian law. If an autonomous weapon system arbitrarily attacks civilians, the critical question arises as to who bears responsibility. Here, the doctrine of command responsibility becomes central. A commander who authorizes the use of an autonomous weapon must reasonably foresee whether that weapon is likely to violate the laws of armed conflict. Where such foreseeability exists and the commander negligently disregards it, the requisite mental element (in the form of gross negligence or recklessness) for a war crime may be established. In addition, the state that develops or deploys such weapons may incur international responsibility for breaches of international obligations (Cryer et al., 2019).

6. Conclusion

The comparative examination of the mental element of crimes arising from artificial intelligence in Imami jurisprudence and international criminal law reveals one fundamental point of convergence and two divergent paths in terms of legal response.

The point of convergence lies in the fact that both systems, in their current state, regard artificial intelligence as lacking an independent mental element (intent, knowledge, or deliberateness) and, therefore, as lacking direct criminal responsibility. In both frameworks, artificial intelligence is primarily viewed as a tool or instrument behind which human agency operates.

The divergent paths are manifested in the manner in which responsibility is attributed to that human agent. Imami jurisprudence, relying on an ethical and duty-oriented framework, pursues responsibility in an individual and hierarchical manner based on principles such as liability for destruction, causation, and the no-harm rule. The emphasis is placed on identifying the culpable individual (such as a negligent manufacturer or a careless user) and on compensation for harm as a matter of private right. This system exhibits relatively limited flexibility in accepting new forms of collective responsibility.

By contrast, international criminal law, drawing on its experience in addressing organized and collective crimes, has moved toward the development of institutional and functional concepts. Notions such as command responsibility, risk-based liability, and the debate over electronic personality reflect efforts to establish accountability mechanisms capable of addressing the complexity and distributed nature of decision-making in the development and use of advanced artificial intelligence.

For the Iranian legal system, which is rooted in Imami jurisprudence, an intelligent integration of these two approaches may be constructive. On the one hand, it is necessary to emphasize the jurisprudential foundations of individual moral responsibility and, through a dynamic interpretation of principles such as causation and liability, to respond effectively to harms arising from artificial intelligence. On the other hand, it is essential to draw inspiration from the experiences and modern frameworks of international law and to provide, within domestic legislation (such as the Islamic Penal Code and the Computer Crimes Law), for the following measures:

– The definition and classification of high-risk artificial intelligence systems (such as autonomous weapons systems and critical infrastructures).

– The explicit recognition of the criminal and civil liability of legal persons (manufacturing and operating companies) for crimes arising from their intelligent products.

– The formulation of regulations based on a “duty of care” for designers, manufacturers, and professional users of artificial intelligence, such that violations of safety and ethical standards may themselves constitute an independent criminal element.

– The establishment of specialized regulatory bodies to supervise the development and dissemination of high-risk artificial intelligence technologies.

Ultimately, both Imami jurisprudence and international criminal law emphasize that human oversight and governance over technology must be preserved. Artificial intelligence, however complex, must serve human objectives and operate within ethical and legal values. Forward-looking and precautionary legislation is the key to preventing accountability gaps that could jeopardize security and justice in the digital age.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

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Conflict of Interest

The authors report no conflict of interest.

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