THE ROLE OF ARTIFICIAL INTELLIGENCE IN CRIMINAL LITIGATION IN INTERNATIONAL LAW:THE INFLUENCE OF THE PRINCIPLE OF PARTY AUTONOMY ON THE COURT'S ADAPTATION TO INTERNATIONAL TREATIES

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Abstract

The principle of party autonomy has had a dual impact on the court's adaptation to international treaties.On the one hand, this principle has prompted the court to pay more attention to the agreement arrangements of the parties and improve the flexibility of the application of international treaties; on the other hand, excessive emphasis on the autonomy of the parties may weaken the effect of the unified application of international treaties.

Therefore, when applying international treaties, courts must not only respect the true meaning of the parties, but also prevent the parties from using the principle of autonomy to circumvent treaty obligations, thereby affecting the stability of the international legal order.

Keywords: Artificial intelligence, international,capability amplifier, criminal procedure, evidence, legal liability, algorithmic decision-making, courts.

1. Introduction

The principle of party autonomy refers to a basic principle that in foreign-related civil and commercial legal relations, the parties have the right to independently decide on the applicable law, the competent court or the dispute resolution method through a

satisfactory manner without violating the mandatory provisions of the law and public order.This principle takes respect for the free will of the parties as the core, and is an important embodiment of the concept of private law autonomy in the field of private international law. With the rapid development of economic globalization and cross-border transactions, the traditional model of unilaterally determining the applicable law by the court has become difficult to meet the needs of the parties for legal certainty and predictability.It is in this context that the principle of party autonomy has been continuously developed and widely accepted, becoming an important tool for coordinating conflicts between different legal systems. From the point of view of characteristics, the principle of party autonomy is mainly reflected in the following aspects: first, autonomy.The parties concerned can independently choose the most favorable or familiar legal rules based on their own interests and transaction characteristics; second, limitations.This principle is not absolute freedom, but is restricted by international treaties, mandatory norms and public order; third, internationality.This principle has been recognized to varying degrees in international treaties and comparative law, and has obvious characteristics of cross-judicial application.

2. Concept and Features of AI Decision-Making

AI decision-making refers to processes in which algorithms analyze data and generate predictions, classifications, or recommendations that influence legal decisions. In criminal justice, such systems often rely on machine learning models trained on historical data.

Key features of AI decision-making include automation, data-dependence, probabilistic reasoning, and limited explainability. Unlike human decision-makers, AI systems do not possess legal reasoning, moral judgment, or contextual understanding. Their outputs are shaped by data quality and algorithmic design, which may embed biases or systemic inequalities. These characteristics complicate the direct application

of AI decisions within criminal procedure, where individualized justice and transparency are essential.

3.Misunderstanding of the case

Since artificial intelligence can only handle factors that already exist in its database, it may mistakenly identify "the same" cases. If the court makes a decision based on new factors, artificial intelligence will take some time to integrate these factors, so during this period, the results are inaccurate.In addition, in addition to the number of factors, the weight given to them is also essential to determine the similarity or relevance of the case.It is impossible for us to determine the weight of each factor in advance, because the weight must be related to the case.The question of which factor is decisive in the case depends on a comprehensive understanding of the entire case, and artificial intelligence is currently unable to do this.

4.Evidentiary Value of AI-Generated Outputs

4.1 Admissibility of AI Evidence

In criminal procedural law, evidence must satisfy standards of legality, relevance, and reliability. AI-generated outputs—such as facial recognition matches or predictive risk scores—can potentially serve as evidence, but only if their production complies with procedural safeguards.

Courts must assess whether AI evidence is obtained lawfully, whether its methodology is scientifically valid, and whether the defense has a meaningful opportunity to challenge it. The opaque nature of many AI systems, often described as "black boxes," undermines the principle of adversarial proceedings and the right to cross-examine evidence.

4.2 Probative Value and Limitations

The probative value of AI evidence depends on accuracy, error rates, and contextual interpretation. AI outputs are inherently probabilistic and should not be treated as conclusive proof. Overreliance on algorithmic results risks replacing judicial reasoning with automated judgment, thereby weakening judicial independence.

Accordingly, AI-generated evidence should be considered auxiliary or corroborative rather than determinative, and must always be assessed alongside traditional forms of evidence.

5. Legal Liability for AI Decision-Making

5.1 Sources of Error and Harm

AI systems may produce harmful outcomes due to biased datasets, flawed algorithms, or improper deployment. Such errors can lead to wrongful suspicion, unlawful detention, or unjust sentencing, raising serious concerns about accountability.

5.2 Allocation of Legal Responsibility

Determining legal liability for AI-related errors is complex. Potentially responsible actors include software developers, system providers, law enforcement agencies, and judicial authorities. This article argues that liability should be allocated based on principles of control, foreseeability, and fault.

Criminal procedural law should prevent accountability gaps by ensuring that human authorities remain ultimately responsible for decisions affecting individual rights. AI systems must not serve as a shield against legal responsibility.

6. Comparative and International Perspectives

Different jurisdictions adopt varying approaches to AI regulation in criminal justice. The European Union emphasizes human oversight, transparency, and fundamental rights protection, as reflected in its AI regulatory initiatives. Other jurisdictions prioritize innovation but often lack comprehensive procedural safeguards.

Comparative analysis demonstrates the necessity of embedding AI governance within existing legal frameworks while adapting them to technological realities. International cooperation may further promote harmonized standards for lawful AI use.

7. Challenges and Risks

The application of AI in criminal procedure poses several risks, including algorithmic bias, discrimination, erosion of due process, and excessive automation. Without proper oversight, AI systems may amplify existing social inequalities and undermine public trust in the justice system.

Moreover, the delegation of decision-making authority to opaque algorithms threatens the foundational principle that criminal responsibility and judgment must remain human-centered.

8. Recommendations

To ensure the lawful and ethical use of AI in criminal procedural law, this article proposes:

* establishing clear admissibility standards for AI-generated evidence;
* mandating transparency and explainability requirements;
* ensuring meaningful human oversight over AI-assisted decisions;

* defining legal liability frameworks for AI-related harms;

* enhancing training for judges, prosecutors, and defense lawyers.

These measures aim to balance technological innovation with the protection of fundamental procedural rights.

9.Possible deviations in the algorithm

In criminal justice, factors such as gender, age, and socio-economic status may be a pre-existing bias.For example, if artificial intelligence considers gender when evaluating past sentences, one might find that male defendants have been sentenced to longer sentences for violent crimes than female defendants.If artificial intelligence follows this model, and judges also follow the recommendations of artificial intelligence, this will lead to more sentences and harsher sentences for the defendants just because they are men.Therefore, gender as a pre-existing bias factor will be re-"enforced" in the criminal justice system.The same applies to other factors that may be discriminated against because they belong to a particular group.

The artificial intelligence used in our courts is mainly developed by private companies, either appointed by the court to develop it, or developed on their own initiative.These companies usually require the protection of commercial secrets for their algorithms and refuse to disclose the algorithms to the courts.Therefore, judges cannot know which factors are used by artificial intelligence, which factors are related to sentencing, and the weight of each factor.Some factors, such as gender, may improve the accuracy of algorithms, but at the same time they may "institutionalize" discrimination based on gender.However, companies may design artificial intelligence to consider these factors in order to better match precedents with target cases, thereby improving the accuracy of their products.Taking into account this kind of business interest, the company may even ignore the court's instructions and "secretly" adopt

those biased factors.Unless the company must disclose the algorithm used, this situation cannot be avoided.

Conclusion

Artificial intelligence decision-making has the potential to enhance efficiency and analytical capacity in criminal justice systems. However, its use within criminal procedural law must be carefully regulated to safeguard fairness, accountability, and human rights. AI-generated outputs should be treated as supportive tools rather than authoritative judgments. By clarifying evidentiary standards and legal liability, criminal procedural law can integrate AI technologies while preserving its core principles of justice.

Artificial intelligence has quickly become the key driving force for improving judicial efficiency and governance capabilities in the modern criminal justice system, and its application has evolved from an early auxiliary tool to an intelligent platform that deeply empowers the whole process.

At the practical level, artificial intelligence significantly optimizes the criminal justice process through a variety of scenarios: for example, in the Shanghai court, the trial supervision platform can accurately identify the risks of false litigation such as "fake divorce" and realize the forward movement of judicial governance; Anhui procuratorial organs use "AI assistants" to quickly analyze transcripts, documentary evidence and other evidence to assist case-handling personnel to focus on core research and judgment; Shenzhen Longhua District Court uses the "Lingyi" intelligent transcribing system to transcribe trial speeches in real time and generate clear transcripts of key points, shortening the trial time by about 30%.These applications rely on the transition of judicial informatization from information storage to in-depth data processing, and build a high-quality data base through element-level structured

processing to support the precise correlation of legal provisions and assist decision-making.

In terms of technological evolution, the application of artificial intelligence in the judicial field has undergone a transformation from a single-point tool to a "center of competence". For example, the iFlytek team of HKUST has optimized the speech recognition model for the challenges of Chinese language and colloquial expression in the trial, and assisted in the formulation of industry norms to promote the construction of a voice cloud platform for four-level courts across the country, laying the foundation for paperless case handling and human-computer collaboration.

In terms of risk control, in order to prevent the "illusion" of large legal models, the technical design has set strict "generation boundaries", such as disassembling tasks into three types of retrieval, reasoning, and generation capabilities, eliminating all aspects of a single model processing, and prohibiting the compilation of content in high-risk scenarios such as case citations. Content must be retrieved from authoritative databases, while ensuring that the reasoning process can be traced, and positioning AI as a "capability amplifier" rather than a substitute for the core discretion of judicial personnel.

Looking to the future, the deepening application of artificial intelligence in criminal justice is expanding from courts and procuratorates to law firms, enterprises and the public, promoting the development of legal services in a more inclusive and high-quality direction, and providing support for the construction of a safer and standardized intelligent judicial system during the "15th Five-Year Plan" period.

Artificial intelligence is entering the field of criminal justice in China, even in the field of criminal sentencing, which has raised some questions and concerns.The misunderstanding of court decisions by artificial intelligence, the inability of artificial intelligence to make value judgments, the possible bias of algorithms, the "black box" characteristics of artificial intelligence, the low public acceptance of artificial

intelligence, the uncertainty of the quality of algorithms, and so on.In this regard, the contribution of artificial intelligence to "same case and same judgment" should not be exaggerated, and the unlimited application of artificial intelligence must be avoided.Courts should be extra cautious when including artificial intelligence in sentencing. Artificial intelligence should not be used as a decision maker, but only as an "assistant""In addition, the algorithm should be transparent so that judges can review its operations.A committee supervised by the Supreme People's Court should be established to ensure the quality of judicial data used by artificial intelligence and to unify the artificial intelligence sentencing system nationwide。

Considering all these problems and shortcomings, should artificial intelligence still be regarded as a useful sentencing tool?As mentioned above, all walks of life are currently very keen to promote the use of artificial intelligence in criminal justice, and believe that artificial intelligence is an important tool to achieve the goal of "same case and same sentence", which is an irreversible trend.Therefore, what we need to consider is not whether to apply artificial intelligence in sentencing, but how to regulate the application of artificial intelligence in sentencing.

In order to make a fair judgment, the judge must make a value judgment.For example, the defendant's guilt depends not only on his criminal motivation, but also on the impact of his crime on society, which in turn must be evaluated in accordance with the legal interests protected by the criminal law.The algorithms currently used based on mathematical modeling cannot adapt to this difficult-to-quantify value judgment.Therefore, artificial intelligence can either filter out value issues or directly simplify and interpret them as purely factual issues.However, the value issues that are filtered out by the algorithm may be precisely highly related to sentencing.Due to the lack of effective methods to correctly identify and evaluate value issues, artificial intelligence may only produce "justice" at the formal level, but skip the substantive level, leading to inappropriate judgments.Unless artificial intelligence is applied to cases that do not involve value issues, the number of such cases is indeed very small.