

Research on the Transparency of Civil and Commercial Arbitration from the Perspective of Generative Artificial Intelligence

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Abstract

The emergence of GPT marks a significant progress in natural language processing in the field of generative artificial intelligence. Artificial intelligence has great application potential and value in legal retrieval, document review and production, arbitrator selection, and auxiliary arbitration decision-making. However, there is a contradiction between the development of artificial intelligence and the principle of arbitration confidentiality. Training a more accurate artificial intelligence model requires a large amount of diverse data, while the confidentiality of arbitration limits the acquisition and sharing of data. Therefore, in order to give full play to the potential of artificial intelligence, it is necessary to gradually increase the transparency of arbitration and achieve a balance between arbitration confidentiality and transparency through reasonable institutional design and legal norms.

Keywords: international civil and commercial arbitration, arbitration transparency, arbitration confidentiality, generative artificial intelligence

1. GPT Is a Milestone in Artificial Intelligence Research Moving Towards “Strong Artificial Intelligence”

With the continuous progress of technology, remarkable achievements have been made in the research field of generative artificial intelligence. Among them, Chat GPT developed by OpenAI company, as an outstanding representative in the field of natural language processing, marks another major progress in generative artificial intelligence technology. However, although Chat GPT shows excellent capabilities in natural language processing, it has not yet reached the stage of strong artificial intelligence.

1.1 The Progress of GPT

First, compared with traditional artificial intelligence, GPT (Generative Pre-trained Transformer) has strong natural language processing capabilities. GPT adopts the Transformer architecture. Through the self-attention mechanism and multi-head attention mechanism, it can capture long-distance dependency relationships in text and generate coherent and logical text. This makes GPT show strong capabilities in fields such as dialogue systems and text generation.

Second, GPT has unsupervised learning and pre-training that traditional artificial intelligence does not have. Through a large amount of unsupervised learning and pre-training, it learns the internal structure and patterns of language from massive text data. This learning method enables GPT to automatically adapt to new environments and tasks and has strong evolutionary potential.

1.2 The Gap Between GPT and Strong Artificial Intelligence

The currently available GPT mainly focuses on the field of natural language processing and has not yet shown intelligent capabilities in other fields (such as perception, self-awareness, decision-making, etc.). Strong artificial intelligence needs to have a wide range of intelligent capabilities, including perception, understanding, reasoning,

decision-making, and other aspects. In addition, although GPT shows a certain degree of creativity in natural language processing, the content it generates is still limited by training data and algorithm design. In contrast, strong artificial intelligence needs to have higher creativity and adaptability and be able to think independently and deal with complex and changeable environments. Finally, GPT lacks its own values and self-awareness, and the content it generates is only the result of training data and algorithms. On the other hand, strong artificial intelligence should have its own value and world view system and be able to make decisions based on its own understanding and judgment.

In conclusion, the emergence of GPT is undoubtedly a major progress in the field of artificial intelligence. However, we should also recognize that GPT has not yet reached the stage of strong artificial intelligence and still needs to make breakthroughs and progress in multiple aspects. In the future, with the continuous development and improvement of technology, it is expected that more intelligent and autonomous artificial intelligence systems will appear and gradually move towards the era of strong artificial intelligence. This will bring more convenience and possibilities to human society. At the same time, we also need to be cautious in dealing with and responding to related challenges and problems.

2. Possible Applications of Artificial Intelligence in the Field of Civil and Commercial Arbitration

According to a research report released by Goldman Sachs, on average, 44% of work tasks in the legal field can be automated through artificial intelligence.¹ Although this number seems inspiring, it is only an ideal prediction stage at present. At present, the development of international legal artificial intelligence is not yet mature, and domestic development is still in its infancy. In the field of civil and commercial arbitration, the degree of integration of artificial intelligence into the daily work processes of arbitration professionals is relatively low. According to the data of the 2023 arbitration survey released by BCLP, the proportion of actually using various legal artificial intelligence tools is about 40%.² Nevertheless, it is only a matter of time before the application of generative artificial intelligence in the field of civil and commercial arbitration is gradually expanded and expanded. At present, it is more necessary to clarify in which fields generative artificial intelligence may have a significant impact on arbitration.

2.1 Legal Retrieval Work

The traditional search engine logic is “keywords + limited logical retrieval + limited query conditions”. This search logic is limited by the keyword generalization ability of the information collector. In the legal field, keyword retrieval requires the use of professional “legal language”, which requires the information collector to have a certain level of professional knowledge.

However, if the GPT model is used for information retrieval in the field of civil and commercial arbitration, in a database containing demand information, GPT can automatically identify the demand information in natural language text and extract keywords, greatly reducing the professional ability requirements for information collectors. At present, the representative of typical foreign legal artificial intelligence retrieval tools is Lexis + AI, the world’s first generative artificial intelligence platform for the legal field launched by Lexis Nexis. Users can query any relevant legal questions through natural language, and the product will automatically generate detailed legal knowledge interpretations for users and attach actual cases that have occurred. In China, Meta Law is relatively outstanding. Although the accuracy of recognizing natural language and retrieving legal provisions has not reached the ideal level, its development and iteration are worthy of expectation.

It can be seen that in the future development of international civil and commercial arbitration, the addition of legal artificial intelligence reduces the difficulty of legal retrieval in civil and commercial arbitration. This can not only improve the parties’ autonomous control over arbitration and lower the threshold for parties to actively understand civil and commercial arbitration, but also promote arbitrators to improve their grasp and application of applicable laws and promote the international development of arbitration.

2.2 Document Review and Production

On October 19, 2023, the International Chamber of Commerce Young Arbitration and ADR Forum (YAAF) held a seminar titled “Frontier Exploration of Artificial Intelligence in Arbitration”. The role of artificial intelligence in the three key stages of arbitration — document review, fact investigation, and document production — was discussed at the meeting.³

The steps of manual document review are to manually review documents one by one using knowledge and

¹ See Briggs and Kodmani, *The Potentially Large Effects of Artificial Intelligence on Economic Growth*, Global Economics Analyst.

² See *BCLP Arbitration Survey 2023 Ai in IA: The Rise of Machine Learning*, Nov 09, 2023.

³ See Janine Haesler and Tim Isler, *Navigating the Main impacts of Artificial Intelligence in International Arbitration: Insights from the ICC YAAF Workshop*, Artificial Intelligence, ICC, International Arbitration.

process document data; the general steps of electronic review are to manually collect data, manually preprocess data (such as converting documents into readable formats and deleting duplicate data), upload documents to the document review platform, and then further process documents through electronic data processing. The addition of generative artificial intelligence can replace the initial data sorting, automatically classify and filter required data using deep image recognition and language recognition technologies, and also assist in document review according to previous document review patterns. In comparison, the addition of artificial intelligence to document work greatly improves work efficiency.

2.3 Selection of Arbitrators

The selection of arbitrators is a crucial part in deciding an arbitration case. Since arbitrators themselves have subjective consciousness as “people”, it is difficult for them to avoid carrying personal subjective consciousness when deciding an arbitration case, although the strength of subjective consciousness varies. For different cases, carrying subjective consciousness is not necessarily a bad thing. Resolving civil and commercial arbitration disputes does not have a black-and-white solution. In more cases, human emotions and value judgments need to be considered. Therefore, when artificial intelligence does not yet have emotional value judgment, the author does not agree with the radical supporters of artificial intelligence who believe that artificial intelligence can replace arbitrators for fair adjudication.

However, taking a step back and thinking, although artificial intelligence cannot completely replace arbitration decisions, it can help parties select arbitrators. Accordingly, one can refer to the operation of using artificial intelligence to select jurors analyzed by Jury Analyst: cooperate with behavioral scientists and use psych statistics and neuro-linguistics to better identify the biases of potential jurors to understand whether external information (i.e., news, social media) may overly influence their views on the case at hand.¹ In addition, the most complex artificial intelligence model can use public information such as social media posts and LinkedIn biographies to generate personality trait scores and predict a person’s views, attitudes, hobbies, and even party affiliations. Therefore, at the individual level, artificial intelligence can decode a person, and parties can select arbitrators based on this.

2.4 Assisting Arbitration Decisions

Artificial intelligence-assisted decision-making is most suitable for situations where there is a large amount of case law available, and the factual and legal scenarios are comparable and repetitive. However, under current conditions, the feasibility basis of this assumption is relatively low. First, most international civil and commercial arbitration information is confidential, making it difficult to form a database most suitable for artificial intelligence training to assist arbitrators in making decisions. In addition, most current generative artificial intelligence lacks “innovation” and only stays at collecting past data and making the same judgments according to new situations. This decision-making method always has the possibility of not being applicable in a society that is moving forward.

At present, it is more feasible to use artificial intelligence to predict and evaluate arbitration cases. Its main implementation method is actually not closely related to arbitrator decision-making. It is to assist parties and lawyers in making decisions before arbitrators make rulings. For example, existing foreign artificial intelligence tools such as LexMachina, Harvey, Casetext, etc., can deeply access extensive judgment databases and improve lawyers’ evaluations of cases. However, domestic legal artificial intelligence started relatively late, and neither the accuracy nor the database size has reached the level of foreign legal artificial intelligence.

3. The Development of Artificial Intelligence Requires Increasing the Transparency of Civil and Commercial Arbitration

3.1 Confidentiality Is Not Conducive to the Combined Development of Arbitration and Artificial Intelligence

Traditional international civil and commercial arbitration takes confidentiality as its value orientation because it can not only maintain the commercial reputation of the parties but also avoid speculators from joining and making the parties fall into unnecessary disputes. However, from the perspective of artificial intelligence data training, confidentiality is not conducive to the combined development of arbitration and artificial intelligence. First, training a GPT model requires a large amount of data. Only by accessing sufficient diverse and comprehensive text data can the GPT model improve its understanding of natural language by learning rich context information and make accurate predictions on unseen data. In addition, the confidentiality of arbitration data is not conducive to improving the accuracy and reliability of artificial intelligence training data. During the data collection process, due to various reasons (such as unreliable data sources and incorrect data labeling), there may be inaccurate or unreliable data. These inaccurate data may have a negative impact on model training. Only by increasing the transparency of arbitration data and increasing the sample of training data can training data be

¹ <https://juryanalyst.com/blog/artificial-machine-intelligence/>

reviewed and verified to ensure the accuracy and reliability of data, thereby improving the training effect of the model. Therefore, promoting the development of artificial intelligence to assist arbitration necessarily contains the value aspiration of increasing the transparency of arbitration.

For the topic of improving arbitration transparency, the need for the integration of generative artificial intelligence and arbitration may be a factor with a relatively low degree of urgency. Some people may hold the view that there is no need to abandon the characteristics and principles of arbitration just to overly cater to the development of technology. Judging from the current research and development progress of generative artificial intelligence, mentioning the integration of arbitration and artificial intelligence may be a bit ahead of time. However, the integration of law and artificial intelligence is already undergoing various explorations in other fields. For example, the official national legal service network has introduced artificial intelligence and answers parties' legal consultations through intelligent output of legal document reports and dialogue with artificial intelligence robots. Some law firms are also actively exploring new application scenarios of digital humans and AI + law in the legal profession. If civil and commercial arbitration remains stagnant, it will inevitably be considered a choice of being complacent.

Looking back at history, the rise of the Internet has not only promoted the global flow of information but also given birth to the concept of big data. In this context, even under the confidentiality system of international civil and commercial arbitration, arbitration data is increasingly easily obtained on a global scale, which also provides a basic data source for training artificial intelligence models. In the development stage of generative artificial intelligence, if artificial intelligence is to improve efficiency and liberate productivity for civil and commercial arbitration, it will inevitably have a higher demand for publicly available information of civil and commercial arbitration.

3.2 The Current Research Status of Transparency in Civil and Commercial Arbitration

There is relatively little research on international commercial arbitration transparency in China, but there is also some discussion. For example, scholar Qian Guo analyzed in detail the negative impacts of the confidentiality of international commercial arbitration from multiple dimensions and proposed solutions such as limiting the confidentiality principle from the dimension of time and establishing an award publicity system.¹ Scholars Liqun Cheng and Yueping Yang analyzed the jurisprudential basis, institutional construction², practical difficulties, and theoretical paths of the publicity of international civil and commercial arbitration awards.³ At present, the more comprehensive research on international civil and commercial arbitration in China is by Ms. Lin Qimin. She demonstrated the feasibility of transparency reform in civil and commercial arbitration and conceived the model of transparency reform.⁴ However, most current research on international commercial arbitration transparency is reflected through discussing confidentiality and its exceptions. The reason is that China's arbitration system still has some room for development. The confidentiality principle of civil and commercial arbitration has always been deeply rooted in people's hearts. Due to the spread of the "UNCITRAL Transparency Rules in Treaty-based Investor-State Arbitration,"⁵ Chinese scholars have noticed the balance between arbitration confidentiality and transparency. Therefore, the research topics of domestic scholars are relatively conservative.

There is relatively rich and in-depth research on this issue abroad. For example, Cindy Galway challenged the idea that international arbitration must always be confidential to be valuable in her article "The Tensions between Confidentiality and Transparency in International Arbitration" and advocated adopting a presumption that arbitration awards should be made public unless both parties oppose.⁶ Catherine A. Rogers emphasized in her article "Transparency in International Commercial Arbitration" that forced transparency reform on the international arbitration system is impractical because parties can effectively avoid these reforms by resorting to

¹ See Qian Guo, (2008). Negative Impacts of Confidentiality in International Commercial Arbitration. *Journal of Liaoning Educational Administration Institute*, (05), 43-46.

² See Liqun Cheng, Jilang Yang, (2012). On the Publication of International Commercial Arbitration Awards. *Legal System and Society*, (21), 119-120.

³ See Yang Yueping, (2014). Realistic Dilemmas and Theoretical Paths of Publication of Commercial Arbitration Awards. *Journal of Huaqiao University (Philosophy & Social Sciences)*, (03), 116-124.

⁴ See Qimin Lin, (2015). *Research on Transparency Issues in International Commercial Arbitration*. *Hebei Law Science*, 33(06), 112-123.

⁵ See United Nations Convention on Transparency in Treaty-based Investor-State Arbitration (New York, 2014) (Mauritius Convention on Transparency).

⁶ See Cindy Galway, (2003). The Tensions between Confidentiality and Transparency in International Arbitration. *American Review of International Arbitration*, 14(121).

“gray market” arbitration. The focus should be on the substantive information sought rather than on the procedures for formulating substantive information.¹ Amy J Schmitz expounded in her article “Untangling the Privacy Paradox in Arbitration” that the privacy of arbitration is not confidentiality and called for arbitration transparency reform.² Victoria Udoh proposed in her article “Transparency in Arbitration, Desired or Necessary?” that transparency rules should be widely applied and confidentiality issues should be activated only when necessary.³ In general, foreign research on arbitration transparency issues is not limited to confidentiality principles. Although there are radical and conservative views, overall, it is based on respecting the balance between the autonomy of the parties and public interests.

4. Concept for Improving the Transparency of International Civil and Commercial Arbitration

Regarding the transparent development of arbitration, whether in support or opposition, this is an inevitable trend. For China’s civil and commercial arbitration to gain further competitiveness under the development trend of international arbitration transparency reform, institutional conception should be carried out in combination with China’s national conditions. Under the rapid development of generative artificial intelligence today, the transparency reform of international civil and commercial arbitration, with the help of the power of emerging technologies, may open up new ideas.

4.1 Intelligent Arbitrator Selection Platform

Scholar Lin Qimin believes that the current method of selecting arbitrators is outdated and backward. An unified database of international arbitrators’ information should be established to provide detailed introductions to the qualifications, resumes, and fee standards of each arbitrator. This way, parties do not need to run around. Instead, a “one-stop shopping model” can provide parties with a reliable source of information.⁴ However, the data collection concept of this database still stays at the surface identity information of arbitrators. Providing too much fragmented information is not enough to form a personal portrait of arbitrators but may lead to unnecessary information leakage and increase the privacy risk of arbitrators.

Combined with the current development level of artificial intelligence, this “one-stop arbitrator selection database” can include data of previous cases adjudicated by arbitrators. After model analysis, personality trait scores can be generated, and the arbitrator’s views, attitudes, hobbies, and even party affiliations can be predicted. Such a database that forms a personality portrait only needs arbitration award information with a relatively low degree of privacy, rather than more private personal information. In addition, artificial intelligence can also be used to assist in determining arbitrators with conflicts of interest. In this way, when facing parties, it is possible to directly make conflict of interest determinations without fully disclosing the relatives of arbitrators. When facing lawyers or other professional institutions, more public information can be authorized. Compared with directly disclosing arbitrator information to parties, such a setting is similar to locking personal information and opening a window. To some extent, it can achieve a balance between protecting personal privacy and transparency.

4.2 Information Disclosure During Arbitration

Disclosing arbitration information should be done in a targeted and reasonable way to ensure the fairness, independence, and transparency of arbitration while balancing the confidentiality needs of arbitration. First, it is necessary to clarify which information should be disclosed. This can include information directly related to the arbitration case and information that has a significant impact on the public interest. At the same time, the confidentiality needs of arbitration should also be considered to avoid disclosing too much sensitive information. Second, the disclosure time should be clearly defined to ensure the timeliness and effectiveness of information. The disclosure time can be set at a specific stage in the arbitration procedure, such as after the submission of an arbitration application and before the issuance of an arbitration award. Third, the disclosure channels should be reasonable and legal to ensure the accuracy and authority of information. Disclosure can be carried out through official channels such as arbitration institutions, courts, and regulatory agencies, or through public channels such as the media. Fourth, when disclosing information, the confidentiality needs of arbitration should be fully considered. For sensitive information such as trade secrets and personal privacy, appropriate protection measures should be taken, such as limiting the disclosure range and encrypting transmission. Fifth, in order to ensure the

¹ See Rogers, Catherine A., (2006). Transparency in International Commercial Arbitration. *Kansas Law Review*, *Bocconi Legal Studies Research Paper No. 06-10*.

² See Schmitz, Amy J., (2006). Untangling the Privacy Paradox in Arbitration. *Kansas Law Review*, 54, p. 1211, *U of Colorado Law Legal Studies Research Paper No. 08-31*.

³ See Udoh, Victoria, (September 9, 2020). *Transparency in Arbitration, Desired or Necessary*.

⁴ See Qimin Lin, (2015). Research on Transparency Issues in International Commercial Arbitration. *Hebei Law Science*, 33(06), 112-123.

standardization and effectiveness of information disclosure, it is necessary to strengthen supervision and law enforcement. Regulatory agencies should supervise, and guide arbitration institutions, lawyers, and other personnel involved in arbitration to ensure that they perform information disclosure obligations in accordance with the law. At the same time, for violations of information disclosure regulations, liability should be investigated in accordance with the law.

In short, disclosing arbitration information should be done in a targeted and reasonable way. It is necessary to ensure the fairness, independence, and transparency of information while balancing the confidentiality needs of civil and commercial arbitration. By clarifying disclosure standards, setting reasonable disclosure times, disclosing through appropriate channels, balancing confidentiality and transparency, and strengthening supervision and law enforcement, the transparency and credibility of arbitration can be effectively improved.

4.3 Publication of Arbitration Awards

At present, the arbitration laws of most countries do not explicitly provide for the publication of arbitration awards. Therefore, unless otherwise agreed by the parties or provided by the arbitration institution, arbitration awards are prohibited from being published. Countries that take publishing arbitration awards as the default position are rare but not nonexistent. One example is Article 38 of the Arbitration Law enacted by Costa Rica in 2011: “Unless otherwise agreed by the parties, all final awards are public”¹; while Norway has adopted a unique approach — excluding the confidentiality obligation, that is, arbitration awards are not confidential unless the parties have otherwise agreed to the contrary.²

Nevertheless, from the perspective of promoting the expansion of arbitration databases and laying the foundation for the development of generative artificial intelligence, the publication of arbitration awards is still an inevitable choice. First of all, arbitration institutions should play a leading role and regularly publish or immediately release the award documents of arbitration cases they administer on their official websites. This can ensure the timely publication of arbitration awards and facilitate public inquiries. In addition, arbitration institutions can also cooperate with database operators and provide the published versions of award documents to the operators, who will uniformly release them and provide paid reading services for readers. This cooperation model can not only reduce the burden on arbitration institutions but also ensure the wide dissemination of awards. In the process of publishing awards, protecting the interests of the parties is of crucial importance. Therefore, when publishing awards, sensitive information related to the parties, arbitrators, etc. should be appropriately omitted to balance the conflict between the public’s right to know and the parties’ right to privacy. However, excessive information hiding may damage the interests of the arbitration system, so it is necessary to find a balance between protecting the interests of the parties and maintaining arbitration transparency. Finally, constructing an arbitration award publication system also needs to consider the constraints of laws and regulations and the needs of arbitration practice. When formulating relevant systems, we should fully study domestic and international laws and regulations to ensure the legality and effectiveness of the publication system. At the same time, we should also pay attention to the actual needs in arbitration practice to ensure that the publication system can meet the reasonable expectations of arbitration parties.

5. Conclusion

Under the premise of continuous technological progress, the potential application of generative artificial intelligence in the field of civil and commercial arbitration is gradually becoming a reality. Although the GPT model has achieved remarkable success in natural language processing, there is still a certain gap compared to strong artificial intelligence. In terms of legal retrieval, document review and production, arbitrator selection, and auxiliary arbitration decision-making, the integration of artificial intelligence is expected to improve arbitration efficiency. However, in this process, there is an obvious tension between the principle of arbitration confidentiality and the data needs of artificial intelligence. In order to promote the combination of artificial intelligence and arbitration, enhancing arbitration transparency has become a necessary trend. This not only requires more effective management and utilization of existing arbitration data but also needs to find a balance between protecting the privacy rights of the parties and the public interest. By constructing an intelligent arbitrator selection platform, reasonably disclosing arbitration information, and publishing arbitration awards, etc., we can enhance the transparency and credibility of arbitration and at the same time provide rich data resources for the development of artificial intelligence. In the future, with the further maturity of technology and the improvement of relevant laws and regulations, the application of artificial intelligence in the field of civil and

¹ International Commercial Arbitration Law Based on the UNCITRAL Model Law, Law No. 8937 of 2011, May 5, 2011, art.38 (Costa Rica).

² Arbitration Act, May 14, 2004, ar. 5(1) (Norway) (“Unless the parties have agreed otherwise, the arbitration proceedings and the decisions reached by the arbitration tribunal are not subject to a duty of confidentiality.”).

commercial arbitration will be more extensive, bringing profound changes to arbitration practice.

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