Will Artificial Intelligence help or harm arbitration?

Les notions, essentiellement philosophiques, de volonté et de liberté sont au cœur de la matière.

- Emmanuel Gaillard[1]

Arbitration is a form of private dispute resolution. Parties arbitrate disputes through a private system created of their own will and liberty, contractually exiting the public, state-controlled system of dispute resolution.[2] Whilst there are many different types of arbitration, most remain subject to similar challenges, such as the constitution of the tribunal, the seat of the arbitration, and the applicable law. Any law student need only refer to Lord Justice Kerr's 1987 parable, the Macao Sardine Case, to grasp many of the basic concepts in arbitration.[3]

Artificial intelligence, according to the Oxford English Dictionary, is the capacity of computers or other machines to exhibit or simulate intelligent behaviour, or the field of study concerned with this, abbreviated AI. In the UK, the government has defined AI as technologies with the ability to perform tasks that would otherwise require human intelligence, such as visual perception, speech recognition, and language translation.[4] Similarly, the HKMA refers to AI as the performance of human-like cognitive functions,

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[1] Gaillard, E. (2009). Aspects philosophiques du droit de l'arbitrage international, L'Académie de Droit International de la Haye.
[2] See, in this connection, the foundations of the "*lex arbitri*", in Mann, F. A. (1968). Lex Facit Arbitrum. International Arbitration Liber Amicorum for Martin Domke. P. Sanders**:** 157.
[3] Kerr, L. J. (1987). "Arbitration v. Litigation: The Macao Sardine Case." Arbitration International **3**(1): 79-86.
[4] HM Government White Paper, *Industrial Strategy: Building a Britain Fit for the Future* (2017; gov.uk link)

to allow computers to mimic human intelligence so that they can learn, sense, think and act.[5]

At first sight, arbitration, a system of private dispute resolution, and artificial intelligence, the ability of computers exhibit intelligence or perform tasks, might appear to be strange bedfellows. But AI permeates all aspects of life,[6] and questions for the law – and for arbitration – have been raised: how is AI being used? What is the potential for AI application in arbitration – and its risks? To answer these questions, one must first tackle a more fundamental one: what is AI, exactly?

Artificial (specific) intelligence

Despite the efforts of lexicographers, artificial intelligence resists definition. Alan Turing first proposed the concept of a modern computer in a 1936 paper, dealing with an esoteric question concerning incompleteness in mathematical logic.[7] After the Second World War, he would advance his work in a 1950 paper, posing the question "can machines think?" and proposing the imitation game as a test for intelligence, now

[5] Hong Kong Monetary Authority White Paper (in collaboration with PwC), *Reshaping Banking with Artificial Intelligence* (2019; gov.hk link)

[6] The author's partner grew up on a farm, where the longstanding acronym "AI" did not mean artificial intelligence, but artificial insemination. Even artificial insemination is not immune to the growing landscape that artificial intelligence traverses; see Spanaki, K., U. Sivarajah, M. Fakhimi, S. Despoudi and Z. Irani (2021). "Disruptive technologies in agricultural operations: a systematic review of AI-driven AgriTech research." Annals of Operations Research.

[7] Mainly, decidability, and advancing the work of Gödel, Hilbert, and others, and introducing the halting problem; Turing, A. (1937). "On Computable Numbers, with an Application to the Entscheidungsproblem." Proceedings of The London Mathematical Society **41**: 230-265.

commonly referred to as the "Turing test".[8] Researchers in the United States would pick up the concept only a year after his early passing: "artificial intelligence" as a term or concept dates to 1955, set out in a proposal for the Dartmouth Summer Research Project to be held the following year.[9] As one attendee, Allen Newell, recalled the definition discussed at the Dartmouth Project in a classic paper:[10]

"*AI is the field devoted to building artifacts that are intelligent, where 'intelligent' is operationalized through intelligence tests…and other tests of mental ability*."

In reality, current AI systems are specific, narrowly-defined, and "dumb". Much turns on identifying the appropriate test to be applied. In circumstances where a yet more fundamental question of "what is intelligence?" has a multitude of answers, cross-pollination and debate has continued between artificial intelligence and neuroscience.[11] Unlike the popular imagination of machines with minds, from Lang's Metropolis to Kubrick's 2001: A Space Odyssey, human-like, generally intelligent systems live only in fiction and remain beyond current technological ability. We are closer to cyberpunk Major Kusanagi than Spielberg's eschatological David.[12]

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[8] Turing, A. M. (1950). "Computing machinery and intelligence." Mind **59**(October): 433-460. Note that at the time, the word "computer" generally referred to a person who computes, or solves mathematical problems, rather than a machine.

[9] McCarthy, J., M. Minsky, N. Rochester and C. Shannon (1955, August 31). "A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence." John McCarthy is generally considered to have coined the term "artificial intelligence".

[10] Newell, A. (1973). "You can't play 20 questions with nature and win: projective comments on the papers of this symposium." Visual Information Processing: 283–308. The proposal of a test of computer intelligence was made by Turing in his 1950 paper; Turing, A. M. (1950). "Computing machinery and intelligence." Mind **59**(October): 433-460.

[11] See, e.g. Hassabis, D., D. Kumaran, C. Summerfield and M. Botvinick (2017). "Neuroscience-Inspired Artificial Intelligence." Neuron **95**(2): 245-258.; Werbos, P. J. (2009). "Intelligence in the brain: a theory of how it works and how to build it." Neural Networks **22**(3): 200-212. .

[12] Masamune Shirow, *The Ghost in the Shell* (攻殻機動隊) (1989). The protagonist, Major Motoko Kusanagi, is a cyborg possessing only her organic central nervous system while the remainder of her body is prosthetic.

Today, AI is most commonly a euphemism for automation, and dominated by sub-branch of the field known as *machine learning*: computer systems that improve automatically through data and experience.[13] Perhaps unknown to many, such AI-driven algorithmic systems are already here: from traffic control, to voice-controlled digital assistants (such as Apple's Siri and Amazon's Alexa), to social media. Or, as John McCarthy wryly remarked, "*as soon as it works, no one calls it AI anymore*."[14]

AI in arbitration: established applications

AI systems require sufficiently large, consistent, and reliable datasets to operate effectively. In the context of a form of private dispute resolution where confidentiality is often paramount, their application is necessarily limited. Two established applications stand out for the aid offered in arbitral proceedings: technology-assisted review, and legal analytics.

Due to the quantity of underlying data available, it is unsurprising that the most established technological solution for arbitration (or any dispute resolution process) is technology-assisted review for document disclosure. The definition of "document" has embraced the entire range of modern electronically-stored information (and meta-

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Stephen Spielberg, *A.I.* (2001). The protagonist, simply "David", is an artificial general intelligence robotic child capable of love. The film was started by and ultimately dedicated to Stanley Kubrick (who passed away in 1999); the screenplay was based on Brian Aldiss's short story, *Supertoys Last All Summer Long* (Harper's Bazaar, December 1969).

[13] Such as through solving an optimisation problem: see a useful introduction by IBM (link).

[14] Bertrand Meyer (2011, October 28), "*John McCarthy*" (Communications of the ACM; link).

information), from the humble plain text file to entire SQL databases, regardless of format, if deemed to be relevant to an issue in dispute. In litigation, the courts have in the past 10 years started to recognise the value of document triage by AI-driven review platforms; see *Pyrrho Investments v MWB Property* in England (3.1 million documents)[15] and *McConnell Dowell Constructors v Santam* in Australia (1.4 million documents).[16] Typically, a manual review is conducted on a training set representative of the universe of documents, with the output from this manual review processed by the review platform; protocols are implemented to ensure constant review and improvement.[17] Similar review technology is applied for due diligence exercises; consequent transaction-related disputes may implicate the diligence process and query the soundness and reliability of technology-assisted review. There is, however, a natural cap on efficiency: due to the largely heterogenous nature of arbitration, the process starts from scratch for each new case.[18]

Another application in arbitration is AI-driven legal analysis. Two sub-groups can be distinguished here: legal analytics and predictive analysis.

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[15] *Pyrrho Investments Ltd v MWB Property Ltd* [2016] EWHC 256 (Ch); as Master Matthews noted at [18], "*I should say, by way of footnote, that the ideas underpinning this process are not completely new. Primitive versions of this kind of process were being demonstrated to (sometimes sceptical) litigation lawyers in the mid-1980s. I was one of them. But this was before the advent of personal computers, let alone of tablets and smartphones. There was no everyday or home computer culture then, and especially not amongst English lawyers*." See also *Brown v BCA Trading Ltd* [2016] EWHC 1464 (Ch), where the order was contested.

[16] *McConnell Dowell Constructors (Aust) Pty Ltd v. Santam Ltd (No 1)* [2016] VSC 734; Vickery J. at [18] to [31]. Other jurisdictions include the United States (*Da Silva Moore v Publicis Groupe* (11 Civ.1279 (ALC)(AJP), 24 February 2012, Southern District of New York), the first federal case accepting the use of predictive coding in discovery (3 million documents)) and in Ireland (*Irish Bank Resolution Corporation Ltd v Quinn* [2015] IEHC 175; Fullam J. at [17] to [30] (1.7 million documents)).

[17] A form of supervised learning (a sub-category of machine learning). Cormack, G. V. and M. R. Grossman (2014). Evaluation of machine-learning protocols for technology-assisted review in electronic discovery. Proceedings of the 37th international ACM SIGIR conference on Research & development in information retrieval. Gold Coast, Queensland, Australia, Association for Computing Machinery**:** 153–162.

[18] Save for certain areas that may involve arbitrations with related underlying facts and/or documentation, such as in maritime or commodities arbitration.

Legal analytics has developed gradually, from basic data extraction and classification, such as traditional case law services provided by LexisNexis or Thomson Reuters Westlaw, to advanced analysis platforms such as Lex Machina (now part of LexisNexis) and ROSS Intelligence. These services benefit most legal practice areas, including arbitration. However, given the confidential nature of arbitration, penetration of legal analytics is shallow. For example, statistical analysis of cases and trends remain the eminent domain of arbitral institutions, who have privileged access to data.[19] Third party offerings such as Jus Mundi have only started gaining ground comparatively recently.

In parallel, predictive analysis has been of interest to many: given enough data, AI can estimate the outcome of a case with high accuracy (or, at least do no worse than a legal expert[20]). One example is "Marshal", an algorithm that predicts the outcome of cases before the Supreme Court of the United States, with 71% accuracy.[21] However, the volume of data required to achieve this prediction is not easily collected or structured, even in investor-state arbitrations where data may be more accessible, let alone private commercial arbitration.[22] In another study, researchers achieved prediction accuracy of

[19] For example, the annual and periodic reports of the HKIAC, SIAC, LCIA, and other institutions. Researchers sometimes collect market data, e.g. the annual QMUL arbitration survey.
[20] One current theme of research in AI is the phenomenon that AI is often held to a higher standard than humans performing the same task; see Gray, K. (2017). "AI Can Be a Troublesome Teammate." Harvard Business Review(July 2017).
[21] Katz, D. M., M. J. Bommarito and J. Blackman (2017). "A general approach for predicting the behavior of the Supreme Court of the United States." PLoS One **12**(4). See also the influential early proposals in Ruger, T. W., P. T. Kim, A. D. Martin and K. M. Quinn (2004). "The Supreme Court Forecasting Project: Legal and Political Science Approaches to Predicting Supreme Court Decisionmaking." Columbia Law Review **104**(4): 1150-1210.
[22] Marshal was programmed on 249,793 docket votes mapped against 1,501 engineered features, mined from the Supreme Court Database (judgments dating back to 1791; link). The underlying material has been released by the researchers on Github, including source code and data to enable reproduction in Python (scikit 0.18) (link).

around 90%; however, the underlying dataset required significant manual review and analysis.[23] That said, the British and Irish Legal Information Institute (BAILII) has recently granted access to its database of 400,000 searchable cases to the "AI and English Law" research team at the University of Oxford.[24] Whilst predictive analysis remains prohibited by BAILII under this arrangement, permitting researchers to use natural language processing (NLP) is a concession. Watch this space.

Blue sky thinking

Review platforms and legal analytics have existed for some time. Will AI offer new benefits for arbitration in the future?

Recent progress in AI has been accelerated by the convergence of three factors: the volume of available data, improvements in processing power, and development of new techniques (such as natural language processing and neural networks).[25] It is conceivable that legal drafting could be automated, in light of advances in NLP, such as OpenAI's Generative Pre-trained Transformer 3 (GPT-3) language model, released in 2020.[26] GPT-3 is able to produce sensible text that is indistinguishable from any written

[23] Shaikh, R. A., T. P. Sahu and V. Anand (2020). "Predicting Outcomes of Legal Cases based on Legal Factors using Classifiers." Procedia Computer Science **167**: 2393-2402.
[24] An agreement concluded on 14 December 2020, involving the Ministry of Justice; see BAILII Press Release (link); University of Oxford update (link).
[25] E.g., in analyzing memory and language (Wang, P., Y. Qian, F. K. Soong, L. He and H. Zhao (2015). "Part-of-speech tagging with bidirectional long short-term memory recurrent neural network." arXiv preprint arXiv:1510.06168.); or producing summaries (Jiang, W., J. Chen, X. Ding, J. Wu, J. He and G. Wang (2021). "Review Summary Generation in Online Systems: Frameworks for Supervised and Unsupervised Scenarios." ACM Trans. Web **15**(3): Article 13.)
[26] Predictably, GPT-2 and GPT-1 were released in 2019, and 2018 respectively. A GPT-4 is anticipated. See, also, the initial GPT proposal: Radford, A. and K. Narasimhan (2018). Improving Language Understanding by Generative Pre-Training. (OpenAI link)

by a human, the first generation of any language model to achieve this feat.[27] Even though there are clear limitations in its ability, GPT-3 was powerful enough that the researchers cautioned its potential dangers, including abuse of legal processes. They noted, however, that language models that render high quality text generation could improve access to justice by lower existing barriers to carrying out activities that require human penmanship and increase efficacy. Arbitration and other forms of dispute resolution are no doubt in sight.

Well-trained systems could also, in the future, communicate like humans.[28] Google engineers recently trained an open-domain chatbot, Meena, to achieve 79% on a "Sensibleness and Specificity Average" test, within striking distance of human performance (86%), conversing in English and Chinese.[29] However, the social conversation style assessed was relatively simple and deeper conversation remains untested (and difficult to test), with the researchers noting that achieving human-likeness is an incredibly broad and abstract concept. Whilst we may have to wait some years for, say, an artificial machine to play the role of an arbitral participant (or, say, in training), it is a tantalising prospect.

[27] Brown, T. B., B. Mann, N. Ryder, M. Subbiah, J. Kaplan, P. Dhariwal, A. Neelakantan, P. Shyam, G. Sastry and A. Askell (2020). "Language models are few-shot learners." arXiv preprint arXiv:2005.14165. The author strongly recommends reading this paper for its accessibility given the subject matter (alternatively, skip to limitations and broader impact from section 5, page 33). (arXiv link)

[28] Current systems are limited, but can be implemented effectively: see, e.g. DoNotPay's chatbot function to resist parking fines, covered in the Guardian (link).

[29] Adiwardana, D., M.-T. Luong, D. R. So, J. Hall, N. Fiedel, R. Thoppilan, Z. Yang, A. Kulshreshtha, G. Nemade and Y. Lu (2020). "Towards a human-like open-domain chatbot." arXiv preprint arXiv:2001.09977. Recall the Dartmouth definition of AI (see above).

And can an AI system ultimately replace arbitrators and counsel? The author is a Kurzweilian AI optimist and believes in this possibility. Advances have been remarkable, often producing results years ahead of expectation. For example, Google DeepMind's AlphaGo programme has defeated the best human players of Go (圍棋), generally considered to be the most complex traditional board game,[30] and its AlphaFold programme has recently solved one of biology's biggest challenges, correctly predicting protein structure.[31] Such advances, although in apparently distant and disparate disciplines, are relevant to arbitration. Arbitration is, ultimately, a type of (Bayesian) game, playable just as Go is and, therefore, arbitration games must be theoretically machine-solvable. Theoretical modelling of alternative dispute resolution by game theorists, including for arbitration as a Bayesian game, has led, for example, to proposals that there can be an optimal protocol for arbitration, which is deterministic.[32] And arbitration is a form of complex problem. If a problem previously thought unsolvable because of its complexity has been cracked by AI (such as protein

[30] The same team has since continued to use deep neural networks and reinforcement learning techniques to create a programme capable of mastering the game *tabula rasa*; see Silver, D., J. Schrittwieser, K. Simonyan, I. Antonoglou, A. Huang, A. Guez, T. Hubert, L. Baker, M. Lai, A. Bolton, Y. Chen, T. Lillicrap, F. Hui, L. Sifre, G. van den Driessche, T. Graepel and D. Hassabis (2017). "Mastering the game of Go without human knowledge." Nature **550**(7676): 354-359.

[31] By winning the Critical Assessment of protein Structure Prediction (CASP) competition; see Senior, A. W., R. Evans, J. Jumper, J. Kirkpatrick, L. Sifre, T. Green, C. Qin, A. Žídek, A. W. R. Nelson, A. Bridgland, H. Penedones, S. Petersen, K. Simonyan, S. Crossan, P. Kohli, D. T. Jones, D. Silver, K. Kavukcuoglu and D. Hassabis (2020). "Improved protein structure prediction using potentials from deep learning." Ibid. **577**(7792): 706-710.

[32] Interestingly, mediation is stochastic, leading the researchers to recommend that optimal filtering of information in mediation would benefit from a mediator adding "noise" to the process: Goltsman, M., J. Horner, G. Pavlov and F. Squintani (2009). "Mediation, arbitration and negotiation." J. Econ. Theory **144**: 1397-1420.

folding),[33] designing an artificially intelligent arbitral participant may not be impossible.[34]

Risk of harm

Not all AI helps arbitration; certain flaws may harm it. The requirement of a large input data set opens the resulting AI system to criticism and doubt. As with the expression "rubbish in, rubbish out", the AI output relies on the quality of the input. A poor training set may hinder technology-assisted review and, over a large dataset, may promote increasing inefficiency. Deliberate action, such as data poisoning, the injection of false training data with the aim of corrupting the learned model, is also a real threat for any AI system.[35] Or, bias can be hard-coded into datasets. For example, it has long been known that men and women use language differently.[36] Any user of such technology must recognise and allow for its shortcomings.

Another difficulty lies in the algorithmic basis of AI. Unlike a reasoned human being, how or why a result was achieved is not always known (or knowable). In the only reported case in England to date, an automated decision-making process for investments

[33] Protein folding was considered an "NP-hard" problem ("non-deterministic polynomial time"). In broad terms, such a problem was considered to be unsolvable in real time, such as by brute force; Fraenkel, A. S. (1993). "Complexity of protein folding." Bull Math Biol **55**(6): 1199-1210.

[34] Slightly reassuringly for AI pessimists, though, note that the popular card game Magic: the Gathering has been shown to be at least as difficult as Turing's halting problem, and shown that optimal strategy is non-computable, nor is evaluating consequences of prior moves; Churchill, A., S. Biderman and A. Herrick (2019). "Magic: The gathering is Turing complete." arXiv preprint arXiv:1904.09828.

[35] Steinhardt, J., P. W. Koh and P. Liang (2017). Certified defenses for data poisoning attacks. Proceedings of the 31st International Conference on Neural Information Processing Systems.

[36] Newman, M., C. J. Groom, L. D. Handelman and J. Pennebaker (2008). "Gender Differences in Language Use: An Analysis of 14,000 Text Samples." Discourse Processes **45**: 211 - 236.

was in question, whereby the extent of control and knowledge over the AI system was apparently unknown; see *Tyndaris v MMWWVWM*.[37] In this connection, another key development is the blockchain. In essence, a blockchain serves as a single source of decentralised truth where disputes can be identified and resolved continually.[38] Strictly speaking, blockchain itself not an AI system, but researchers have begun to apply machine learning on the Ethereum blockchain.[39] If successful, this could lead to alternative, accessible, and competitive models of dispute resolution. Indeed, some alternatives to traditional private dispute resolution such as arbitration already exist, such as eBay's online algorithmic dispute resolution system.[40] In each of these cases, challenging questions remain of due process in automation and transparency, particularly if the reasoning applied might not be divined from the AI system itself.

A real, practical challenge might also lie in evidence. As AI systems improve, evidence will become easier to falsify, and fakes harder to detect. The rapid development in synthetic media such as "deepfakes" has led to a veritable "arms race" in this area.[41]

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[37] *Tyndaris v MMWWVWM Ltd* [2020] EWHC 778 (Comm). The questions raised were unfortunately unanswered as the claim was struck out for failure to advance security for costs.
[38] World Economic Forum, White Paper: "Bridging the Governance Gap: Dispute resolution for blockchain-based transactions", 10 December 2020 (link). The White Paper notes that the process improves transparency and affords greater privacy, and also allows parties to reach consensus that is certain, recorded, and auditable.
[39] Harris, J. D. and B. Waggoner (2019). "Decentralized and Collaborative AI on Blockchain." 2019 IEEE International Conference on Blockchain (Blockchain): 368-375. As with the US Supreme Court predictive analysis project, this is an open source project with the implementation available on Github (link).
[40] See Barnett, J. and P. Treleaven (2018). "Algorithmic dispute resolution—The automation of professional dispute resolution using AI and blockchain technologies." The Computer Journal **61**(3): 399-408.
[41] See, e.g. Facebook's recent announcement of successful AI-driven reverse-engineering from a single image, 16 June 2021 (Facebook link); see also Nguyen, T. T., C. M. Nguyen, D. T. Nguyen, D. T. Nguyen and S. Nahavandi (2019). "Deep learning for deepfakes creation and detection: A survey." arXiv preprint arXiv:1909.11573.

Lastly, AI must face up to another headline issue of our times: climate change. Many stakeholders in arbitration have (laudably) signed up to the Campaign for Greener Arbitrations and its Green Pledge, committing to reducing the environmental impact of their practice.[42] Sadly, despite its digital nature, the carbon footprint of AI systems can be significant.[43] Although there may be no direct harm to arbitration, it is a worthwhile reminder.

Regardless of AI's assistance or hindrance, arbitration practitioners would do well to prepare for advancing technology encroaching into every aspect of the law.[44] In this connection, the International Bar Association has updated its Rules on Taking Evidence in International Arbitration to account for the importance of cybersecurity and data protection, amongst other changes.[45] The Rules now provide for a tribunal's obligation to consider early in the arbitral proceedings, in consultation with the parties, the treatment of any issues of cybersecurity and data protection. Given the evolving nature of cyberattacks, this was an important first step in acknowledging the impact on arbitration.[46] Indeed, in April 2021, Global Arbitration Review reported that a São Paolo court stayed a partial award in an ICC dispute because the claimants had accessed the defendants' confidential information during the arbitral proceedings by hacking

[42] The Campaign for Greener Arbitrations (link)
[43] Schwartz, R., J. Dodge, N. A. Smith and O. Etzioni (2020). "Green AI." Communications of the ACM **63**(12): 54-63. For example, the GPT-3 team noted that their energy consumption as several thousand petaflop/s-days of computational intensity during training (a petaflop is one quadrillion floating point operations per second). This was alleviated by the fact that once trained the estimated consumption fell to 0.4 kWh per 100 pages of content (approximately equivalent to a 40" TV).
[44] See, for example, a general introduction and proposed responses in 杜明 (2020). 人工智能的法律规制：趋势和前瞻. 人工智能与未来社会发展. 郭毅可. 北京, 科学技术文献出版社**:** 80-101.
[45] See the new Article 2(2)(e) (IBA website link). This also dovetails with additional Rules on remote hearings and exclusion of evidence obtained illegally (e.g. the UK's Computer Misuse Act 1990).
[46] Cyberattacks are increasingly AI-driven. Whilst previously known successful attacks did not require human intervention and self-propagated, e.g. WannaCry, NotPetya, attacks are now constantly evolving, e.g. Mirai.

their servers.[47] More recently, in June 2021, a leading commercial set in London, 4 New Square, fell victim to a ransomware attack.[48] Cybersecurity and other AI-driven technologies will certainly continue to impact arbitration, absent robust management frameworks, especially with the increase in remote hearings.

Respice In Posterum

"[Of the New York Convention] *The tiebreaker amongst the five official languages should be the Chinese version. However, …* [the] *translator was apparently an elderly Mandarin scholar, not an arbitration specialist, writing an old form of Mandarin that few if any understand today… It is arguable that the Chinese text can mean "include" but, on the other hand, it can be argued equally that it cannot. It all depends.*"

- V. V. Veeder[49]

As the late Professor Gaillard wrote, at the heart of it, arbitration is the will and liberty of the parties. In this sense, AI can neither help nor harm it. If the parties freely choose to involve or restrict AI, in any aspect of arbitration, it is a choice validly made and to be respected. It may be that restricting the use of AI could pose its own challenges. For example, if a party is unable to proceed without AI assistance, would they be deprived of a fair trial? In an extreme case such as this, it might not matter that the reasons for

[47] Global Arbitration Review, "*Brazilian pulp award leads to cyber hack challenge*", 12 April 2021 (link).
[48] The Lawyer, 4 New Square struck by ransomware attack, 29 June 2021 (The Lawyer link)
[49] *Is There a Need to Revise the New York Convention*, key note speech given at the International Arbitration Institute Forum, in Dijon, September 2008. (ICCA Link)

the ultimate decision could be unknown. Or, as Lord Neuberger once said, quick and dirty justice is better than the risk of no justice at all.[50]

It may be better to reflect on the late Johnny Veeder QC's tale and recognise that there will always be a great many interpretations: it depends. Perhaps the Chinese scholars would have the last laugh.

欲知得失，請必審名察形。刑恆自定，是我愈靜，事恆自施，是我無為。

-《十大經》

[50] The Evening Standard, 15 November 2013 (Evening Standard link)

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