# THE GUIDE TO EVIDENCE IN INTERNATIONAL ARBITRATION

SECOND EDITION

Editors
Amy C Kläsener, Martin Magál and Joseph E Neuhaus

# The Guide to Evidence in International Arbitration

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Second Edition

**Editors**

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# Publisher's Note

Global Arbitration Review (GAR) is delighted to publish the second edition of *The Guide to Evidence in International Arbitration*.

For those unfamiliar with GAR, we are the online home for international arbitration specialists, telling them all they need to know about everything that matters. Most know us for our daily news and analysis service, but we also provide more in-depth content: books such as this one; insight and other know how (including regional reviews); conferences with a bit of flair; time-saving workflow tools; and, most recently, online training in advocacy, damages and the fundamentals of international arbitration.

Do visit www.globalarbitrationreview.com to find out more.

As the unofficial 'official journal' of international arbitration, we often spot gaps in the literature. Recently, we spotted one around 'evidence', not because there are no other books about it, but because there are none that bridge the law and practice in a modern way. Few topics divide the crowd as much as evidence-related ones at GAR Lives.

*The Guide to Evidence in International Arbitration* aims to fill this gap. It offers a holistic view of the issues surrounding evidence in international arbitration, from the strategic, cultural and ethical questions it can throw up to the specifics of what to do in certain situations. Along the way it offers various proposals for improvements to the accepted approach.

We trust you will find it useful. If you do, you may be interested in the other books in the GAR Guides series. They cover energy, construction, M&A, IP disputes, telecoms, investment arbitration, and the challenge and enforcement of awards in the same practical way. We also have guides to advocacy in international arbitration and the assessment of damages, and a handy citation manual (*Universal Citation in International Arbitration* (*UCIA*)).

We are delighted to have worked with so many leading firms and individuals in creating this book. Thank you all.

And great personal thanks to our three editors – Amy, Martin and Joseph – for the energy with which they have pursued the vision, and to my Law Business Research colleagues in production on such a polished work.

**David Samuels**
GAR publisher
September 2023

# Introduction

Amy C Kläsener, Martin Magál and Joseph E Neuhaus[1]

Nearly every arbitration involves the taking of evidence. The applicable procedures affect what evidence is introduced and how. This can, and often is, outcome determinative. Thus, procedural questions around the process for taking evidence are some of the most common and the most important in arbitration.

This book draws together a group of highly experienced practitioners who address the topic from both theoretical and practical perspectives. Although the first edition was timed to reflect the 2020 amendments to the International Bar Association's Rules on the Taking of Evidence in International Arbitration (the IBA Rules), the book is not intended to be another commentary to the IBA Rules.[2] Rather, following in the tradition of some older publications,[3] this book addresses the topic from a number of perspectives. The Rules on the Efficient Conduct of

1 Amy C Kläsener is a partner at Jones Day, Martin Magál is a partner at Allen & Overy Bratislava, s.r.o. and Joseph E Neuhaus is of counsel at Sullivan & Cromwell LLP.

2 See, e.g., Nathan D O'Malley, *Rules of Evidence in International Arbitration: An Annotated Guide* (2nd edition, Routledge, 2019); Roman Khodzkin, Carol Mulcahy and Nicholas Fletcher (eds), *A Guide to the IBA Rules on the Taking of Evidence in International Arbitration* (Oxford University Press, 2019); Peter Ashford, *The IBA Rules on the Taking of Evidence in International Arbitration: A Guide* (Cambridge University Press, 2013); Tobias Zuberbühler, Dieter Hofmann, Christian Oetker and Thomas Rohner (eds), *IBA Rules of Evidence: Commentary on the IBA Rules on the Taking of Evidence in International Arbitration* (Schulthess, 2012).

3 Frédéric G Sourgens, Kabir Duggal and Ian A Laird, *Evidence in International Investment Arbitration* (Oxford University Press, 2018); Jeffrey Waincymer, *Procedure and Evidence in International Arbitration* (Kluwer, 2012); Magnum Y W Ng, *Evidence in Arbitration: The Law and Practice on Taking of Evidence in International Arbitration Proceedings: An Eclectic Approach of Common Law and Civil Law Systems* (VDM, 2009); Teresa Giovannini and Alexis Mourre, *Written Evidence and Discovery in International Arbitration: New Issues and Tendencies*

Proceedings in International Arbitration (the Prague Rules), published in 2018, have become an important counterpoint to the IBA Rules, and we have sought to include a wide variety of civil and common law viewpoints.

The book starts with a series of chapters providing high-level perspectives on the taking of evidence in international arbitration. In Chapter 1, 'Approaches to Evidence across Legal Cultures', James Hope and Marcus Eklund take a bird's-eye perspective, situating the taking of evidence in the wider context of various legal traditions.

In Chapter 2, 'The 2020 IBA Rules on the Taking of Evidence in International Arbitration: A History and Discussion of the 2020 Revisions', Joseph Neuhaus, Andrew Finn and David Blackman introduce the 2020 IBA Rules, both the paths taken and certain proposals that were deliberated by the IBA Rules Subcommittee but ultimately rejected. Joseph Neuhaus co-chaired the Guidelines and Rules Subcommittee tasked with the 2020 revisions, and David Blackman was one of the secretaries on the task force that proposed the revisions. Key changes included the addition of provisions on the taking of evidence in remote hearings, the inclusion of cybersecurity and data protection issues in the remit of the Article 2 consultation, and the introduction of new grounds for objections, namely to the production of evidence from third parties or to evidence procured by corrupt means.

In Chapter 3, 'The Prague Rules: Fresh Prospects for Designing a Bespoke Process', Janet Walker takes stock five years after the release of the Rules on the Efficient Conduct of Proceedings in International Arbitration in 2018. She applies a dual perspective, assessing both the intention behind a provision and how it may be perceived or misperceived by common law counsel. She concludes that the Prague Rules provide a number of fresh prospects for designing a bespoke arbitral process. She encourages practitioners to look beyond what may be initial misgivings and apply procedures that are suggested by those Rules, such as early assessment by the tribunal, greater restraint in document disclosure, assessing the need for witness statements by first evaluating summaries of the proposed testimony, joint commissioning of experts and tribunal-led settlement discussions.

In Chapter 4, 'Party and Counsel Ethics in the Taking of Evidence', Amy Kläsener and Courtney Lotfi address ethical issues in connection with taking evidence. They review approaches to counsel ethics in taking evidence under

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(ICC Institute, Dossier VI, 2009); Laurent Lévy and V V Veeder, *Arbitration and Oral Evidence* (ICC Institute, Dossier II, 2004); Peter V Eijsvogel, *Evidence in International Arbitration Proceedings* (Kluwer, 2001).

national laws and various ethical canons that can be applied in arbitration, including the International Council of Commercial Arbitration's 2021 Guidelines on Standards of Practice in International Arbitration, the 2018 Prague Rules, the 2010 and 2020 IBA Rules, the London Court of International Arbitration's 2014 and 2021 Rules, the IBA's 2013 Guidelines on Counsel Representation and the International Law Association's Hague Principles on Ethical Standards for Counsel Appearing before International Courts and Tribunals of 2010. The authors conclude that ethical problems and disputes can be best prevented by means of active discussion of ethical issues in case management conferences and inclusion of specific rules and requirements in procedural orders.

In Chapter 5, 'Approaches to Managing Evidence as Criteria for Selecting Arbitrators', Michael McIlwrath considers the all-important question of whether and how to consider styles for the taking of evidence in the selection of arbitrators. He helpfully provides a list of specific issues to consider, including, in particular, whether it is strategic to 'domesticate' the procedure for taking evidence. Finally, he provides guidance on how to discern different styles in arbitrator candidates, including through appropriate interviews, arbitrators' self-disclosures and databases on the subject.

The next two chapters address practice tips for the taking of evidence. In Chapter 6, 'Planning and Organising Effective Procedures for Taking Evidence', Beata Gessel-Kalinowska vel Kalisz, Joanna Kisielińska-Garncarek, Barbara Tomczyk and Łukasz Ostas explore options for tailoring the procedure to the needs of the case. The authors discuss from a high-level perspective the various categories of evidence and common procedures for introducing and managing them in arbitral proceedings. In Chapter 7, 'Evidentiary Objections', Cinzia Catelli and Romana Weinöhrl-Brüggemann provide detailed guidance on the various grounds for objecting to requests for production of documentary evidence, witness questions or the admissibility of evidence more generally.

In Chapter 8, 'Standards of Proof and Requirements for Evidence in Special Situations', Michael Hwang and Clarissa Chern take on the more abstract, but very important, topic of standards and burden of proof. The special situations they consider include prima facie evidence and the switching of the burden of proof, allegations of fraud and corruption, and the use of estimations to prove damages.

In Chapter 9, 'Perspectives on Document Disclosure', Damián Vallejo and Esther Romay offer their views on what is probably the most controversial topic in evidence: document requests. They encourage the international arbitration community to draw from diverse legal traditions to mitigate unintended side effects of this mechanism and craft balanced solutions that work in an international context.

The next two chapters address the rapidly developing topics associated with electronic evidence. In Chapter 10, 'Using Technology and e-Disclosure', Julia Sherman, Himmy Lui, Kelly Renehan and Anish Patel explain how electronic evidence is handled in the United States and the United Kingdom, drawing on these regimes and on their experience in recommending best practices for managing electronic evidence in arbitration. In Chapter 11, 'Managing Data Privacy and Cybersecurity Issues', Erik Schäfer explains specifically what participants in the arbitral process need to know about these increasingly important issues. He provides practical suggestions, including a list of issues to address and proposed wording for procedural orders.

In Chapter 12, 'Best Practices for Presenting Quantum Evidence', Laura Hardin and Trevor Dick provide insights and best practice tips from quantum experts to counsel. These range from careful drafting of the expert's instructions to preserving the independence of the expert, and ensuring that experts stay within their expertise, in particular when multiple experts may address related issues. The authors also address the preparation of persuasive reports and of useful joint statements, and effective presentation at hearings, including online hearings.

In Chapter 13, Stefan Riegler, Oleg Temnikov and Venus Valentina Wong address 'Special Issues Arising when Taking Evidence from State Parties'. The involvement of state parties can create asymmetries in terms of access to information. The authors explore how objections raised by state parties, including those based on special political or institutional sensitivity, play out in practice. They also address the introduction of evidence that has been obtained illegally (for example, through leaks) and how both state and commercial parties use this evidence.

In Chapter 14, 'Special Mechanisms for Obtaining Evidence', Anna Masser, Lucia Raimanová, Kendall Pauley and Peter Plachý provide a clear overview of the recent developments in respect of Section 1782 of Title 28 of the US Code for harnessing US discovery in relation to foreign arbitrations. They also address the less well-known tool of freedom of information act requests under national legislation and international law. This mechanism can be a powerful tool for gathering evidence on state parties or in relation to regulated parties. They also address data subject access requests pursuant to EU rules on data protection and reliance on documents obtained in criminal proceedings.

Finally, in Chapter 15, 'Artificial Intelligence in Arbitration: Evidentiary Issues and Prospects', Martin Magál, Katrina Limond and Alexander Calthrop consider how artificial intelligence (AI) may impact the taking of evidence. They look first at AI's potential role in claim development, the preparation of pleadings,

the intelligent searching of documents, real-time analysis of an oral hearing and the prospect of AI-generated evidence. They then embark on an analysis of the limitations and potential risks of using AI to handle evidence in arbitration.

We are very grateful to all the authors for their valuable contributions and hope that this book proves to be an accessible and useful resource for a broad group of international practitioners and parties.

CHAPTER 12

# Best Practices for Presenting Quantum Evidence

Laura Hardin and Trevor Dick[1]

## Introduction

Parties and counsel scrutinise multiple factors when considering the selection of alternative quantum expert candidates. These factors might include the following.

- Does the expert have sufficient practical experience and expertise in the technical matters that the expert evidence is required to address?
- Does the expert have experience in the particular industry or sector pertinent to the matters in dispute?
- How frequently (and how recently) has the expert been cross-examined?
- Has the expert been publicly criticised by a judge or tribunal?
- Has the expert published articles or texts on the issues in dispute?

In our experience, it is far less common for the selection process to focus on the expert's skills in presenting evidence in writing and verbally. Perhaps all quantum experts are considered to be equal when it comes to drafting written evidence and presenting verbal evidence. However, that may not necessarily be the case.

In this chapter, we provide observations and suggestions for best practices in presenting persuasive quantum evidence based on our personal experience in connection with:

- drafting clear and appropriate expert instructions;
- preparing a compelling quantum report;

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1 Laura Hardin and Trevor Dick are managing directors at Alvarez & Marsal. The authors are grateful to Alexander Demuth for his contributions to the previous version of this chapter, which he co-authored.

- producing and presenting the evidence upon which the expert relies; and
- effectively presenting data at hearings.

## Drafting clear and appropriate expert instructions

The framework within which the quantum expert operates is determined partly through instructions. Specific instructions might enhance or limit the expert's ability to provide persuasive evidence. Common issues to consider include:

- framing the scope of work;
- preserving the independence of the expert;
- ensuring that the expert is not asked to venture beyond their expertise; and
- coordinating multiple experts.

### Framing the scope of work

Ideally, the expert's instructions should be framed in consultation with the expert, who ultimately will have to work within the parameters of the instructions. Generally, it is better to err on the side of an instruction being broad rather than narrow or prescriptive. The objective is to instruct the expert on the issues they should review but not to influence the conclusions they might reach. If experts are consulted during the formulation of the instructions, this should help avoid the expert being invited to provide opinions outside their expertise.

Legal instructions can significantly affect how damages are calculated and the result of those calculations. Issues such as the valuation date, the interpretation of whether a tax regime is legal or illegal, and whether an expropriation is legal or illegal or is, in fact, an expropriation, are all examples of issues that could significantly affect the damages determined by the quantum expert. The tribunal and all parties involved should understand that the tribunal's decisions regarding liability and legal issues may necessitate adjustments to the damages model assumptions.

Damages models, particularly very complex ones, may not lend themselves to considering a large range of options. This is because changing one or two variables can unexpectedly impact another variable or often multiple other variables, which in turn might significantly affect the damages calculation. It may be helpful to consider whether multiple scenarios would be useful to the tribunal in making its decision (and what types of scenarios) and build in a certain level of flexibility in the damages model from the outset. Sometimes, it may be simpler to have separate models to assess different legal or factual scenarios rather than trying to build this flexibility into one model.

Another issue is that when there is a pattern of behaviour or a set of measures, it is often difficult to attribute the economic impact to one of a group of measures or behaviours, particularly as the effect of various measures invariably overlaps. In

our experience, tribunals are often interested in separately identifying the impact of individual measures (one assumes this assists their deliberations), so it may be helpful for the expert to consider quantifying the individual impact of the separate measures or behaviours, if possible, at least on an order-of-magnitude basis.[2]

Allowances should also be made for the scope of the quantum expert's opinions to evolve and expand. This is particularly so in the case of the claimant's expert, who may find that the respondent's expert has developed the issues on which they are opining beyond the scope of the claimant's expert's original instructions. The reverse might well apply. Legal instructions can also be supplemented as necessary to expand the scope of the expert's assignment, as needed.

The expert's report should identify any legal instructions and any subsequent amendments to the original legal instructions used as a basis to support the tribunal's understanding of the origin of important elements of, or assumptions reflected in, the damages assessment.

## Preserving the independence of the expert

An incisive observation on issues of party-appointed independence was made by Mark Kantor, who stated:

> *The incentive (the moral hazard) to present an opinion harmonious to the engaging party is in fact present from the very first contact with the party or counsel regarding the expert's possible engagement, regardless of the obligation to maintain objectivity. Some prospective experts resist that lure while others succumb.*[3]

More succinctly, and arguably more cynically, an unknown judge in the nineteenth century stated an opinion that has often been repeated in various apocryphal forms: '[There are] three degrees of liars: the liar simple; the damned liar; and the expert witness.'[4]

The requirement of an expert's independence is cited in most available codes of conduct for experts, usually including professional organisations of which the expert may be a member.

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2 Whether or not it is required from a legal or damages theory standpoint to quantify the impact of individual measures is beyond the scope of this chapter.

3 Mark Kantor, 'A Code of Conduct for Party-Appointed Experts in International Arbitration – Can One be Found?', *Arbitration International*, Vol. 26, Issue 3 (1 September 2010), pp. 323–80.

4 See, e.g., Geoffrey Beresford Hartwell, *GeoffreyBH's Blog*, https://geoffreybh.wordpress.com/2012/05/23/lies-damned-lies-and-experts/.

For example, Article V of the International Bar Association's Rules on the Taking of Evidence in International Arbitration (the IBA Rules) concerns party-appointed experts and requires that an expert's report must contain the following:

- details of the expert's past and present relationships with the parties, their legal advisers or the tribunal; and
- a statement of the expert's independence from the parties, their legal advisers and the tribunal.

Similar requirements for professional independence and objectivity are included in almost every professional code of conduct in every specialist professional organisation to which a quantum expert witness can belong (e.g., the CFA Institute, the American Institute of Certified Professional Accountants, the Institute of Chartered Accountants of England & Wales, the National Association of Certified Valuators and Analysts and the Academy of Experts).

An expert report should include a declaration of independence to demonstrate the expert's awareness and acknowledgement of their professional responsibility.

A popular strategy during cross-examination is to attempt to demonstrate the expert's lack of independence by portraying their calculation as being based on aggressive assumptions that are reverse-engineered to support the case of the side that has hired them. This might sometimes actually be true. If so, it should be drawn to the tribunal's attention.

A distinction should be made, however, between assumptions based on legal instructions or interpretation of the factual matrix based on counsel instruction versus inherently biased assumptions.

Examples of these instructions may be to assume that specific actions by either party are illegal. Given a particular set of instructions, one expert may calculate damages, whereas another expert with a different set of instructions may conclude that there are no damages. This, in and of itself, does not indicate that either expert is not independent or has not approached the assignment in an unbiased or impartial way. These differences may well represent the effect of the legal arguments that are at issue in the case.

One way to address this, and to provide the tribunal with the information required to reach a well-informed assessment of damages, is to instruct the expert to critique the calculation of the opposing expert and provide some level of alternative analysis that considers the opposing party's interpretation of liability issues and the fact pattern.

This can range from conducting a sensitivity analysis of the variables that drive the opposing expert's damages model to completely recalculating damages under different assumptions. In this way, the expert demonstrates independence not only in appearance but also in fact.

Suppose the opposing expert's opinion is not contested on the alternative interpretation of liability or legal assumptions; the tribunal can accept that expert opinion or make its own adjustments. This is particularly important if the calculation presented by the opposing expert both follows a different set of legal assumptions and also contains aggressive or self-serving assumptions or even mistakes that significantly impact the damages calculation. Providing an alternative analysis protects one party from being forced to overcompensate the other or from being under-compensated if the tribunal decides in favour of the opposing party.

## Avoid asking the expert to go beyond their expertise

Article 5 of the IBA Rules, as revised in 2010, states that an expert report must contain 'a description of his or her background, qualifications, training and experience', while the UK Civil Procedure Rules caution that experts should give unbiased opinions on 'matters within their expertise'.

Although there is no specific definition of 'expertise' in international arbitration, one can rest assured that the expert's qualifications will be raised in cross-examination if relevant qualifications and skills appear lacking.

Evidence should include a discussion of the expert's education and experience. An expert report might include an appendix providing further details about the expert's pertinent education, specialisation and case experience.

When hiring experts for a case, it is useful to consider the expert's skills, knowledge, education, expertise and training (often referred to by the acronym SKEET). Take the time up front to define the scope of the expert's testimony and stick to that. This means refraining from asking the expert to make inappropriate assumptions, ignore critical evidence or produce a calculation that will not survive professional scrutiny. It also means avoiding asking an expert to stray out of their lane and testify in areas in which they are not qualified.

In some cases, this may lead to the hiring of multiple experts.

## Coordination of multiple experts

The engagement of multiple experts might complicate the delivery of expert evidence, prompting a number of additional considerations.

First, it is important to ensure that there is limited overlap between the experts' instructions and their assigned scope of work. The scope of each expert's assignment should be clearly demarcated so that there is no conflict between the experts (real or manufactured) that counsel could exploit during cross-examination.

The integration of the experts' work should be described in their respective reports, indicating which inputs and opinions are being put forward by each of them. If there are any areas of overlap, the experts should confirm that they each believe the assumed inputs are reasonable. In general, however, it is best if areas of overlap are minimal or avoided entirely.

Second, it is critical that the timing of the deliverables is carefully considered, such that the experts can achieve their filing deadlines. The work of technical experts, such as engineers (e.g., for production projections) or pricing experts, invariably will feed into the calculations of the quantum expert. This will necessitate that the engineering reports be completed well before the filing deadline.

Counsel should endeavour to decide on what types of experts they will involve in the arbitration at the outset. Too often, we have seen counsel be slow in bringing in technical experts, which can cause delays in filing deadlines or, worse, costly revisions to the quantum models and reports. Damages calculations can be developed without critical inputs only to a certain point, and it is not advisable to wait until the last minute to finalise the analysis.

A quantum expert's report should describe the inputs they have taken from other experts and how they have incorporated them into their calculation (i.e., if any conversions or adjustments have been made).

Third, each expert should work only on the issues within their area of expertise. This does not mean that the quantum expert can plead ignorance about the origins or bases of inputs from technical experts. The quantum expert must always be tasked with testing the reasonableness, to the extent possible, of the assumptions feeding into their damages calculation.[5] For example, are the figures provided in nominal terms (i.e., inflation included) or real terms (i.e., inflation not included)? Do the provided inputs include value-added tax or not? These are just examples of factors affecting the inputs that could result in an incorrect calculation of damages if inputs are misused.

Finally, the quantum expert may not know the full detail of how various inputs were derived. Nevertheless, at least at a high level, they should understand how the inputs are derived and the reasoning behind the applied approach. The

5 This is unless the expert is instructed to assume an input is correct; albeit the expert should carefully consider the implications of their instruction before accepting it.

quantum expert is not just a 'human calculator' but should seek to understand and test why the inputs they are provided are reasonable. In turn, the technical expert should also understand how their inputs feed into the damages calculation at a high level. This helps to avoid some of the potential errors described in the preceding paragraphs and ensures that the technical expert has provided the correct input for the purposes that the quantum expert is using that input.

The expert report should identify the sources of information used, including references to other experts. It may also provide an assessment of the reasonableness of this information, especially when employed as a critical parameter in the damages calculation.

## Preparing a compelling quantum report

It is the quantum expert's role to assist the tribunal in its understanding of damages, including:

- the relevant facts and circumstances (i.e., those that affect damages);
- the adequate approach or methodology to assess damages; and
- the identification and verification of the required assumptions.

The quantum expert's report is the principal tool to discharge their obligation to assist the tribunal. Typically, this is where most of the expert's time is spent.

A quantum expert's report should provide all the information and explanation required to enable the tribunal to comprehend, evaluate and, if needed, adjust the amount of damages put forward by the expert.

Every quantum expert has their own personal style; thus, no two reports (even if based on identical instructions and information) will look the same. Neither does every expert's report achieve the objective of being persuasive.

Based on our cumulative experience of writing hundreds of quantum expert reports (and reading a similar number of reports from opposing experts), we can make several suggestions that, if applied, might assist with preparing a persuasive expert report. They include:

- identifying the audience and writing with their needs in mind;
- the use of visualisations (e.g., graphs, charts and figures);
- the specifics of a responsive expert report; and
- the specifics of a joint statement.

### Identify the audience and write with their needs in mind

The drafting of an expert report (like that of a memorial or a pleading) is an art form. The tribunal might be presented with thousands of pages of submissions to read over in the months leading up to a hearing. The objective is to provide

sufficient detail to portray the critical assumptions and the reasoning behind them accurately and then to summarise those results logically and persuasively. The expert should avoid, however, going too far and merely filling up hundreds of pages with overly detailed descriptions of analyses performed. The balance is surprisingly nuanced.

Quantum expert reports should be as concise as possible without excluding so much detail that the essential elements of the calculations and the expert's conclusions are distorted. This is challenging. If too many details are omitted, as is the practice with some experts seeking to provide the tribunal with an 'easy' answer, they risk misrepresenting the facts and the substance of disagreements with other experts.

Further, experts risk failing to address their audience adequately by:

- excessive use of technical jargon;
- failing to provide sufficient explanations; and
- the use of unduly complicated sentences.

Unscrupulous experts may mislead their audience by relying on alleged facts without providing or referring to relevant evidence, by referring to unrelated third-party data (such as studies or articles), or by reaching a conclusion that considers neither the facts nor the references but appears to be 'out of the blue'.

We suggest that the quantum expert report serves two primary purposes, and the expert should write it with those purposes in mind.

First, it is vital that the report is written so that the tribunal can follow the arguments.

Thus, it is helpful to begin a quantum expert report, particularly in complex cases, with an executive summary that provides an overview of the expert's principal opinions and summarises the key takeaway points of each following section of the report.

This provides the tribunal with a road map to follow, as the expert provides further detail in the subsequent sections. The executive summary should be sufficiently detailed such that the tribunal members understand, at a high level, the key opinions, which will then be in their minds as they read the rest of the report. This should provide the detail behind the analyses that led the expert to form these conclusions.

Second, the quantum expert report should provide the detail necessary for the opposing expert to understand and critique the presented analysis, calculation and conclusion.

More detailed calculations and findings can be layered into the report in:

- footnotes;
- cited appendices providing model output;
- appendices with more detailed explanations of more complex assumptions, inputs or parts of the calculation; and
- the native format model.

This shortens the length of the main report and makes it easier for the reader to absorb the detail of complex calculations without the text becoming overwhelming or cumbersome.

## The use of visualisations

Visual aids, such as graphs, charts and figures, help the reader to form an observation pictorially. Done well, they are excellent tools for streamlining key findings. If presented helpfully, summary tables, graphs, charts and so on will ideally become references for the tribunal at the hearing and during its deliberations. Graphs, charts and figures also break up long stretches of text that can otherwise become monotonous to review.

Explanations of the main points should accompany visuals to ensure that key takeaways are not missed or misinterpreted (e.g., the central message of the visualisation should be expressly stated, such as 'the following graph portrays the relevant earnings during the years 01 to 03').

The components of a graph or diagram (its headings, columns, lines, sections, etc.) should be explained in a legend.

The source data used to create a visualisation should be disclosed to allow a review, recreation or alteration of the graph or figure. Providing this data in an appendix or an exhibit will usually suffice.

To the extent that the visualisation is not straightforward to read or understand, a brief introduction to help the reader interpret its content may be helpful (e.g., when using a bubble chart to include a third variable represented by the size of the bubble in addition to information represented on the x-axis and y-axis). Additionally, the text of the report should succinctly summarise the conclusion the expert has come to that is depicted in the visualisation.

Visualisations should be avoided if they serve no apparent purpose (i.e., merely repeating a limited number of data points already discussed in the report).

Finally, overly complex or crowded visualisations should also be avoided. Although combining all analyses into a single graph may be tempting, the test should always be whether it can be explained and understood easily and quickly.

## Responsive expert reports

The drafting of responsive expert reports requires that the main conclusions of the opposing expert report be critically analysed and that the key assumptions be addressed with thorough counterarguments. This can be achieved by mirroring the structure of the other expert's report or by summarising its content differently. This summary should include the other expert's conclusion and main arguments.

Tribunals might be assisted if the expert can identify the critical assumptions or issues (i.e., those with the most significant effect on the damages) in a comparative table with references to the sections of the expert reports and damages models in which these critical assumptions are described.

Assumptions that the expert believes to be aggressive or incorrect should be highlighted, and the expert should present any analyses or research to demonstrate why the tribunal should not accept these assumptions. In these cases, it can be helpful to perform sensitivity analyses to illustrate the effect on the damages calculation if different and more reasonable assumptions are applied.

## Joint statements

Joint statements, presented in a similar style to a Redfern schedule and drafted jointly by both experts, are a favourite technique of tribunals to attempt to identify the quantum issues on which the experts agree and those on which they do not, including precisely on what bases the experts disagree.

This exercise can be very tedious and challenging. Experts are often reluctant to concede on many issues that are the bases of their opinions, so there are frequently very few areas of true and complete agreement.

The statement's exact language is always the subject of argument and deliberation and invariably goes through multiple iterations. Both sides usually endeavour to have the 'last word' by adjusting their commentary to respond to the commentary of the other side, leading to even more iterations. In the end, the exercise, although difficult for the experts involved, is useful for the tribunal in providing another opportunity to see the opposing arguments side by side.

Putting specific ground rules in place at the outset can assist in making the process of preparing a joint statement more efficient. These include the following.

- The experts may wish to consider one or more likely several in-person or virtual meetings to see if they can identify areas of agreement. Sometimes (perhaps, not often enough) these meetings can aid a collaborative approach towards working together on a joint document from the outset.
- Each party's quantum expert should only be allowed to edit their own arguments, not those of the opposing side. This would seem to be self-explanatory, but it often is not.

- The substance of the joint statement should be based on and sourced to the preceding expert reports and evidence submitted in the arbitration. The joint statement should rarely be used as an opportunity to introduce new arguments or evidence.
- The quantum experts should agree at the outset on how many iterations of the document will be allowed. As in the arbitration itself, generally, the respondent's quantum expert should have the last word as long as it does not introduce new arguments to which the claimant's expert has not had an opportunity to respond.

## Producing and presenting the evidence upon which the expert relies

### Identification of relevant evidence

In international arbitration, information supporting a calculation of damages comes from various sources. The most reliable are usually contemporaneous documents from the parties involved in the arbitration, obtained either directly from the engaging party or through discovery from the opposing party.

Obtaining contemporaneous documents from the engaging party can be challenging, particularly if significant time has passed. Employees who were working at the company at the time may have been promoted to other departments or left the organisation. In cases of alleged expropriation, in which the claimant may have been barred from entering the facilities or shut out of the local accounting systems, there may not be a complete record of contemporaneous documents to support the case. If there are disputes between shareholders, the majority shareholder or joint venture partner may not have given the required access to company records to the other shareholders or partners in the enterprise.

In either case, the imposed (i.e., beyond the control of the instructing party) limitations to contemporaneous documentation should be noted in detail in the expert report because the tribunal often grants leeway in such cases when the record is complete.

If contemporaneous documents are limited, it is helpful for the expert to produce a document request that should be a 'wish list' of all types of documents on which the expert could rely in developing the damages calculation. In this way, counsel and the engaging party can be directed to look for all contemporaneous documentation that may be useful. If the record of contemporaneous documents is not complete, the expert can assist by preparing a document request to attempt to obtain these documents through discovery. In such cases, the expert may have to rely on the statements of witnesses of fact both in conjunction with contemporaneous records and in place of them.

Suppose the opposing party successfully blocks access to contemporaneous documents that may be in its possession. In that case, it may be possible to ask the tribunal to draw an adverse inference as to why the opposing party is unwilling or unable to produce requested documents. Adverse inferences often lead to the production of responsive documents by the opposing party, which might, surprisingly, provide invaluable support for the damages calculation.

Damages model inputs extracted from contemporaneous documents should be benchmarked, whenever possible, with the company's performance in other similar markets, to the performance and metrics of comparable companies in the industry, and with reported performance metrics for the relevant industry from independent third-party sources.

These are excellent information sources to compare with contemporaneous documents or witness statements to confirm the reasonableness of key assumptions. In some parts of the world, comparable company and industry analysis can be challenging to find because third parties less commonly report on them. In these cases, the expert may identify potentially less comparable but still relevant information to use as a proxy to test the reasonableness of their fundamental assumptions.

Finally, in some instances, counsel will ask the expert to make certain assumptions and report on the effect on the damages calculation that results from these instructed assumptions. Quantum experts should take great care in accepting instructed assumptions, particularly if the expert disagrees with them from a technical or any other standpoint.

Instructions on legal issues, liability issues and the interpretation of facts are types of instructed assumptions that are regular components of legal instructions. However, instructions to make a specific assumption about financial or accounting issues, projections or other areas within the quantum expert's purview are less common and should be considered carefully. If the quantum expert adopts these instructed assumptions, they should be identified as such. The instructed assumptions should also be accompanied by appropriate caveats that the expert is not necessarily providing an opinion on the reasonableness of this assumption.

## Production of evidence

When producing a report, the quantum expert should also produce all calculations to provide the opposing quantum expert with the opportunity to thoroughly critique the bases of the damages calculation, being in possession of all the supporting materials.

The production of supporting information should be complete, namely:

- models and calculations in native format; and
- full documents and translations rather than mere excerpts.

Particular attention should be paid to native-format documents such as the damages model or Excel files that contain expert analyses or that are contemporaneous documents being relied upon as inputs to the damages calculation. They can contain privileged information. Calculations should be produced in native format so that the opposing experts can review them expediently. Although possible, it is arduous and inefficient to recreate models based on copies in PDF.

Counsel should endeavour to agree between the parties that native-format documents, where available, will be provided as part of document production. If this is not agreed upon at the outset of the engagement, significant delays in the production of these documents or a refusal to produce the documents can seriously impact the cost and timing of the preparation of damages calculations.

In our view, this should be a standard production requirement so long as it is a quid pro quo arrangement; if one expert is not compelled to provide the native format models, then the other expert cannot be expected to offer them either.

The use of proprietary programs to generate calculations (such as developing hypothetical market pricing scenarios) can be problematic in terms of production. These programs or software can be costly to procure and usually cannot be shared by the expert because of licensing restrictions. In these cases, the response of the opposing expert is somewhat limited if they are unwilling (or the opposing party is unwilling) to purchase the same software.

The party's internal software programs, or programs provided by third parties that the party regularly uses in managing its business, such as deriving inputs for making projections, might have been used by the expert to incorporate into the damages calculations. In this case, allowing the opposing expert access to a test version of the program to run scenarios may be possible. Although there is no obligation to do this, efforts should be made to allow the opposing expert to validate the calculations and the reasonableness of the approach.

Experts should also provide in full any documents they have relied on, not just excerpts. On many occasions, experts take citations out of context or misrepresent the meaning of the passage they are quoting, whether intentionally or not. There may be additional contrary information in an article or study being referenced that the opposing expert has omitted. Therefore, the expert should review the source in its entirety to ensure that the meaning of the citation is represented accurately.

The same rule of providing complete documents where practicable applies to documents in languages other than the language of the arbitration. Typically, the parties agree on translations that are to be supplied if documents in languages other than the language of the arbitration are referenced or relied upon. In these cases, having a complete translation of the document may be highly beneficial to the expert, particularly during testimony at the hearing. This is particularly important if the expert is not fluent in the other language. Although this can involve significant added costs, throughout the arbitration the availability of all the documents in one language should streamline the review process by both parties' counsel and experts, and it should facilitate referencing documents in one common language throughout the arbitration, particularly at the hearing.

## Effectively presenting data at hearings

The hearing is the culmination of what often represents months or years of hard work, multiple reports and, potentially, joint statements. Meticulous and detailed planning up front is the key to success at the hearing. Critical considerations include:

- how and when to present any updates to the calculation;
- preparation of a direct opening statement;
- ground rules for procedures for the hearing;
- the virtual hearing; and
- the use of witness conferencing.

These aspects of the hearing can each be beneficial in presenting the expert's findings to the tribunal to further its understanding of the expert's opinion. However, these areas can also be fraught with peril if the participants do not invest adequate time in preparation. Even a great case with a very favourable set of facts and a solid expert opinion to support the damage suffered can be significantly weakened if the tribunal is confused or even misled by a woeful presentation or a skilful expert on the opposing side.

## Presenting updated calculations

Preparation should, logically, begin with an assessment of whether or not anything in the expert's calculation needs to be updated and when this update should best occur.

Most experts include language in their reports to retain the ability to update their calculations and opinions should new information become available.

However, it is not always a foregone conclusion that the tribunal will allow it. From the expert's perspective, in terms of the duty to provide the most accurate and up-to-date information on which the tribunal may base its decision, it seems only logical that this provision be honoured.

A quantum expert should provide updates for errors discovered (if any) after issuing the expert report. They may consider whether post-filing events significantly affect their calculations (e.g., the sale of some of the assets of the subject entity that the expert is valuing as part of the arbitration, or a change in relevant tax law or industry-specific legislation).

Considerations as to when the update should be disclosed include the scale of the update and the timing of its discovery. When considering a significant change, updating as soon as possible, usually through a supplemental expert report, is preferable. Minor updates (e.g., typographical or other minor errors) could be disclosed at the beginning of the expert's testimony. Notably, the closer to the hearing the need for updates is discovered, particularly any likely to have a significant effect, the less practical it is to make the update and keep the hearing on schedule. One can be criticised by opposing counsel for (appearing to) hold amendments back.

## The direct statement

It has become customary for experts to present to the tribunal at the beginning of their testimony. This direct presentation allows the expert to explain the key points they feel are critical to their damages calculation without the distortions and confusion that can sometimes occur during cross-examination. It can also allow the expert to begin a dialogue with the tribunal and answer its questions directly.

To be most effective, the quantum expert should highlight a few significant points rather than simply rehashing entire reports at a high level. This is also an opportunity to identify for the tribunal the critical issues on which the experts disagree, so the expert should consider how to make these points clearly and succinctly and what visual accompaniment will best aid in accomplishing this objective.

Graphs and tables can demonstrate the effect of critical assumptions and clarify how the experts differ in their approaches to those assumptions.

The expert should reference their report or the sources of information on slides and note which slide they are speaking about while making their presentation, making it easier for the tribunal to reference particular visuals to the transcript after the hearing.

Experts should be given a reasonable time for their presentations. The complexity of the issues is not always reflected in the time allotted to the presentations. For example, it is difficult, if not impossible, to effectively present seven heads of claim with different sources of data and different valuation approaches in, say, 15 minutes. When damages are complex, an appropriate amount of time to make the presentation should be requested.

Finally, the parties should also agree on whether or not the expert can refer to speaker notes during the presentation. It is possible that using notes can make the expert open to discovery by opposing counsel. In the interest of providing a focused presentation in a limited amount of time, speaker notes can be beneficial.

## General hearing procedures

To enable the effective presentation of evidence at the hearing, the parties should reach an agreement in advance regarding which materials the expert may access during their testimony. Being cross-examined should not be a memorisation exercise in which the expert can only access their reports and appendices. Experts should be allowed to access the entire case file on which they have relied, including all sources referenced, case pleadings for both sides, the complete reports of any technical experts on which they have relied, and the complete reports of opposing experts. Some experts might prefer hard-copy documents to electronic, while other experts might like to access both. Either should be permitted.

Furthermore, in the case of damages models, the expert should be allowed to access the native format of their models as needed. Again, testifying should not be a memory test, particularly with complex damages models containing thousands of cells representing hundreds of assumptions. Further, there are many cases in which multiple damages models are submitted.

In any case, the expert can more effectively answer questions if they can access the native format model to aid in recalling how certain aspects of the calculation were performed. This benefits the tribunal as the expert can verify that their answer provides the most complete portrayal of the calculation rather than having to recall the specific details from memory. In fact, with the assistance of their expert, counsel should also become comfortable, to some degree, in questioning the opposing expert using a live model. This can demonstrate weaknesses or errors in the model.

In terms of the length of testimony, care should be taken to give the expert, and the court reporter, adequate breaks throughout the testimony. Expert testimony takes an enormous amount of focus and concentration, which is exhausting over long periods. The expert should be offered the opportunity to take a break at least every one to two hours and as needed.

This same consideration should be taken when considering redirecting the witness. By the end of the testimony, the expert is likely to be tired and still having to potentially face further questioning from the tribunal. Redirect should be as short as possible, limited to only those necessary clarifications and opportunities to answer questions asked in the cross in more detail. Counsel should remember the adage 'less is more' in terms of redirect and that the sweetest three words to a testifying expert, even on redirect, are 'no further questions'.

## The virtual hearing

Virtual hearings have made it critical for the parties to agree in advance on the ground rules for the hearing procedures. Although the covid-19 pandemic is behind us and in-person hearings have resumed, there is likely to be a continuing role for virtual hearings in the future, particularly with smaller matters for which costs may be an issue. Virtual hearings are also useful for parties who, for whatever reason, find it difficult to travel to the usual hearing locales, for geopolitical, personal or professional reasons.

As such, addressing the particular issues that arise in presenting quantum evidence during a virtual hearing are of continuing relevance to international arbitration quantum experts. Although these issues can initially seem trivial, recent experience has demonstrated that they can be the subject of considerable debate between opposing counsels.

To begin with, the timing of the hearing is important, particularly if the participants are on different continents. The quantum expert will often want to attend the opening arguments and potentially listen to the testimony of key fact witnesses and other experts. Additionally, it is desirable for the quantum expert to testify when they are at their best; very early in the morning or very late at night is not likely to be ideal for most quantum experts. Therefore, considering the time differences between various participants is important for the appropriate scheduling of the virtual hearing.

In some cases, elongated proceeding schedules have been implemented, where the hearing is only half a day over a time period that is relatively manageable for all parties involved. In other cases, the parties may wish to have a 'hybrid' virtual hearing where some participants in the hearing are together, and others are remote. For example, the hearing may proceed with the parties attending by virtual means, but counsel, the tribunal and expert witnesses are together in one location. Or it may proceed with counsel and their expert witnesses together in one place, but the tribunal and the clients are remote. We have seen any number of combinations be effectively implemented to suit the needs of the particular arbitration.

One point to consider if experts and counsel are attending from different locations is the logistics of working together in preparation for and during the hearing. It is best to have counsel and experts in the same location to prepare for and facilitate cross-examination of the opposing expert more efficiently and effectively. In a live hearing, it is difficult enough for the expert to communicate to a cross-examining counsel that an answer by the opposing expert was not as fulsome as it could have been, or even that it was incorrect or that there would be a good follow-on question. In a virtual hearing, even with the speed of electronic communications, it is even more difficult for an expert to assist in a timely manner. By the time the expert has finished formulating the question, counsel may have moved on to another topic, and the opportunity may have been lost.

If the quantum expert and counsel must be in separate locations, some thought should be given to how the expert can most effectively communicate with counsel during the cross-examination of the opposing expert if counsel wishes to have this assistance. Setting up secure lines of communication with the second chair counsel is an option, with quick signals that there is a question coming in advance of the detail of the question so that counsel has a chance to consider this input in real time. Alternatively, the expert could save up any follow-on questions or clarifications, and counsel could take a break to review these as a group.

Moving on to the mechanics of the testimony itself, dual cameras (one on the witness and one showing the entirety of the room in which the witness is testifying) can ensure that the witness is alone and not being assisted by anyone during the testimony, which is a frequently voiced concern, particularly with fact witnesses.

On the technical side, we recommend that experts organise three monitors for testifying. The first monitor would show the hearing participants (the tribunal, opposing counsel and shared documents on which the expert is being questioned). Remote testimony leaves much to be desired in terms of assessing the tribunal's reaction to the testimony and, importantly, whether the tribunal is following the points being made during the expert's testimony. Despite these limitations, during their responses the expert should aim to address the tribunal by looking into the camera directly and giving at least the impression of eye contact, just as a testifier would in a live hearing.

Additionally, while it may seem trivial, the lighting of the room in which the quantum expert is testifying and a good-quality microphone greatly enhance the simulation of in-person testimony.

The second monitor provides the expert with all the case documents they have relied on, including the native-format damages models. During the course of answering a question in cross-examination, the expert should have independent

access to these documents in providing a response and should be able to review any documents on which they are being questioned in their entirety and under their control.

This important consideration highlights the difference between in-person and virtual hearings. At an in-person hearing, it is more difficult to whisk away a binder that has been placed in an expert's hands, ensuring that they have adequate time to review the document they are being asked about. This is not the case with a virtual hearing, where the electronic documents are controlled by cross-examining counsel, who can present and remove documents at will.

If the expert has a separate monitor with the document in question under their control, the document cannot be taken away before the expert has had adequate time to consider it. This also gives the expert the ability, while testifying, to consider the document in its entirety rather than being restricted to an excerpt.

The third monitor can provide the live transcript should the expert wish to consult it. This is important, particularly if opposing counsel asks a question referring to previous testimony of the quantum expert, another expert or fact witnesses, as the quantum expert should be able to review the testimony to ensure it is accurately portrayed before responding.

Finally, as with any hearing, virtual or otherwise, the expert should be allowed access to the entire population of documents on which they relied, in hard copy if they wish to have the files in this format.

## Witness conferencing

Under the right circumstances, witness conferencing (also known as 'hot-tubbing') can be an excellent opportunity for the quantum expert to speak directly to the tribunal on questions about which the tribunal is interested without the filter of cross-examination. Rightly or wrongly, cross-examination tends to focus on discrediting the expert, which can often lead to lengthy exchanges on topics that may be largely irrelevant to the expert's opinions, and on how and why their analyses differ from those of the opposing expert.

An active and engaged tribunal will formulate questions for the experts to debate in real time. In this way, witness conferencing gives the tribunal a better insight into the bases for the key assumptions. It can clarify the reasoning behind them more effectively than through cross-examination. This is because the tribunal's objective is to understand the details of the calculation that it needs to assess damages properly rather than trying to discredit the expert or catch them off guard. It allows the tribunal to become more involved in the process, taking on more of a participatory role.

Counsel may hesitate to use witness conferencing for fear of losing control of the process. If, however, the quantum experts are competent, prepared and experienced, then witness conferencing can assist in clarifying disputed issues expediently for the tribunal, focusing on those issues that the tribunal is particularly interested in addressing.

Witness conferencing is particularly useful in identifying less scrupulous experts who have adopted inappropriate or aggressive positions that might not be challenged effectively under cross-examination. It is one thing to argue with counsel who may not have sufficient technical expertise to challenge evasive or incorrect responses. It is quite another to answer an expert in your field who can point out the inconsistencies and weaknesses in an argument.

However, witness conferencing may not be appropriate in all situations. A less prepared, less informed tribunal will not benefit significantly from this approach. Further, witness conferencing involves a more engaging and challenging type of testimony that, in turn, requires a high level of confidence, an ability to think and respond on the spot, and a higher level of assertiveness in challenging the opposing expert.

In our experience, a way to combat this is to have the questions from the tribunal provided to the experts before the witness conferencing so that they can more adequately and thoroughly prepare their responses. This is an approach we have seen implemented very effectively, giving all parties, counsel and experts comfort that they are not being ambushed and can answer the questions using all the knowledge and resources they have at their disposal. This should be the objective of any tribunal (i.e., eliciting the most fulsome response possible) in having experts address together the questions the tribunal would like answered.

Finally, there is a specific skill to challenging an opposing expert without becoming adversarial and attempting to leave a lasting impression, even if you cannot have the last word. Experts with these attributes will generally do well; those with fewer of these skills or more limited experience may not.

In any case, counsel should always consult with their expert and consider the attributes of the opposing expert before agreeing to witness conferencing to make sure they are comfortable taking on this role.

## Conclusions

Instructions should inform the basis of the expert's work and facilitate the production of a persuasive report. To achieve this goal, the work should be appropriately scoped within the expert's area of expertise, including a clear distinction between

the roles when relying on multiple experts. The instructions should preserve the expert's independence to comply with the most basic requirement for the expert's opinion to be considered in the tribunal's evaluation of the matter.

The most persuasive and compelling quantum expert reports consider the audience's needs. These include a concise report presented clearly, supplemented by footnotes, appendices and exhibits that provide more detailed explanations, and complete references to the data used in the expert's assessment. Visualisations (such as graphs, charts or figures) may aid the tribunal's understanding, especially when combined with adequately detailed explanations. Responsive expert reports and joint statements may require adjustments to the approach to providing evidence, but without sacrificing the purpose of these reports (i.e., supporting the tribunal in its assessment of damages).

Producing and presenting relevant evidence (i.e., the information on which the quantum expert relies) is a crucial element of a persuasive report. If available, contemporaneous documents are likely to provide the most reliable evidence. However, as with any other evidence that is relied on, the expert should seek to independently verify the information (e.g., by reference to other available sources or the expert's analysis). Considering the increasing volume of data, documents and models, their production in full (in comparison to only excerpts) and in native format (in contrast to PDF or other file types) is preferable as it allows a more complete review and assessment.

At or approaching the hearing, updates to the damages calculation may be considered, depending on the reason (e.g., external developments, identified errors), their magnitude and the timing of their discovery. The direct statement, often in the form of a presentation, enables the expert to draw the tribunal's attention to the most important (and probably the most disputed) issues, often supported by compelling visuals. During cross-examination (including in virtual settings), the quantum expert should be allowed full access to the information and data on which they relied in preparing their assessment and report so as to provide the tribunal with the best possible support in its evaluation of the quantum issues and to avoid the testimony turning into a memory test.

Although virtual hearings complicate the presentation of evidence at a hearing, establishing ground rules before the hearing and making full use of available technology can help simulate the in-person experience as closely as possible. Finally, witness conferencing can be an effective tool that aids a persuasive presentation, but that requires preparation and should be managed by the tribunal.

Released to coincide with the new IBA rules on evidence, *The Guide to Evidence in International Arbitration* steers a course through what can otherwise be one of the most divisive topics in international arbitration.

*The Guide to Evidence in International Arbitration* fills a gap in the literature by bringing together law and practice and providing a holistic view of the issues surrounding evidence in international arbitration, from strategic, cultural and ethical questions to what to do in certain settings. Along the way it offers various proposals for improvements to the received approach.

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