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The Influence of the Expert Witness in International Criminal Justice

Deference or Education?

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ABSTRACT

International criminal courts and tribunals rely on a wide array of expert witnesses, themselves representing diverse professions. However, significant disparities exist in the deference these experts receive, often based on their field of expertise and perceptions of credibility. These variations reflect a more fundamental question: should courts ever defer to experts or should the courts be educated by them? This debate — deference versus education — ties into fundamental differences in procedural approaches, principally adversarial versus inquisitorial procedure. Thus, the emergence of a hybridized international criminal justice procedure adds a unique layer to the ongoing discussion. Therefore, this study — adopting an explicitly normative perspective — delves into the deference and education debate, distilling best practices, and applying the resulting criteria to the distinct set of practices for evaluating expert testimony within the international criminal justice field: practices that are shaped by the unique goals and norms of the international courts. The study interrogates these practices by considering the courts' reference to explicit normative standards, the role of the trier of fact, and the utility of a division of epistemic labour. It concludes by recommending a hybrid epistemic approach that may enable judges to interact more ably with the wide range of experts encountered in the international criminal justice arena.

1. INTRODUCTION

The assassination of Lebanese Prime Minister Rafik Hariri in 2005 triggered a series of events with significant repercussions for global relations and regional security. It resulted in a landmark case in the international criminal justice arena: a case which provoked serious reconsideration of the relationship between judges and expert witnesses from allied professions, centred around the choice of whether to defer to professional expertise, or be educated by experts.[1] Commencing in the immediate aftermath of his assassination, 2 years

[1] Amended Consolidated Indictment, in Judgment, *Ayyash and others* (STL-11-01), Trial Chamber, 18 August 2020, § 65.

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of painstaking investigation allowed the newly created Special Tribunal for Lebanon (STL) to indict Salim Jamil Ayyash and other alleged co-conspirators, and to try them *in absentia*.[2] In 2020, following a lengthy trial, the tribunal handed down a 2,641-page judgment finding Ayyash and a number of his co-conspirators guilty.[3] The *Ayyash* trial was unique insofar as it was the only internationalized tribunal to deal with offences linked to terrorism.[4] Nonetheless, in procedural terms, the trial was typical of those encountered in the international criminal justice arena, relying on several categories of expert witnesses, each of whom provided testimony critical to building a circumstantial case. These included professionals in forensic pathology and medicine, DNA analysis and identification, explosive devices, historical context, and political analysis.[5] However, the crux of this case turned on the interpretation and evaluation of a complex web of telecommunications data, captured in the form of call logs and cell-site location data.[6] The complexity of that data was vast, involving dozens of mobile phones organized into discrete networks. These networks were rigorously analysed during the investigation and trial. However, the court-appointed telecommunications expert highlighted the scientific limitations of current analytical techniques and methodologies. He was therefore compelled to refuse the judges' repeated requests to make strong attributions as to the ownership of the mobile telephones. The discussions between the bench and the expert show that the court wished to defer to the expert's conclusive attributions. However, the telecommunications professional sought instead to engage pedagogically with the bench by explaining his methodology, its applications, and its limitations.[7] In short, he was inviting the STL judges to better understand the specialized evidence and to be convinced (or unconvinced) by it. However, rather than engage with the evidence, the trial judges continued to press the expert for conclusions to which they might defer. Meanwhile, the expert refused to make conclusive attributions and pedagogically reiterated the limitations of his scientifically grounded methodology.[8]

The court then turned to a 'summarising witness' engaged by the prosecution.[9] This individual admitted a lack of professional expertise in telecommunications but highlighted his skills when organizing digital data. The summarizing witness made the strong attributions necessary for conviction. Conscious of the comparative lack of expertise or methodological rigour underpinning the attributions of the summarizing witness, and the ramifications for the court, the STL judges were forced to characterize his attributions as being based upon common sense, thus amenable to judgment.[10] And those attributions were relied upon to arrive at a guilty verdict.

This example encapsulates the fundamental debate that underpins the STL's treatment of expert witness evidence. Specifically, whether the evidence from expert witnesses is so

[2] Judgment, *Ayyash and others* (STL-11-01/T/TC), Trial Chamber, 18 August 2020 ('*Ayyash* Trial Judgment').

[3] *Ayyash* Trial Judgment, supra note 2.

[4] The jurisdiction of the Tribunal *ratione materiae* was limited to crimes of terrorism under Lebanese penal law, specifically those articles relating to terrorism, illicit associations, crimes and offences against life, and personal integrity. The statutory provisions thus found upon Arts 270, 271, 314, 335, 547, 548, and 549 of the Lebanese Penal Code, alongside Arts 2, 4, 5, and 6 of the Lebanese Law dated January 11th 1958.

[5] *Ayyash* Trial Judgment, *supra* note 2, at § 1028ff.

[6] See Special Tribunal for Lebanon Public Information and Communications Section, 'Primer on Telecommunications Evidence', previously available online at www.stl-tsl.org/sites/default/files/bulletin/Primer.pdf (visited 10 July 2021).

[7] V. Saxe, 'Junk Evidence: A Call to Scrutinize Historical Cell Site Location Evidence', 19 *University of New Hampshire Law Review* (2020) 133–161; A. Blank, 'The Limitations and Admissibility of Using Historical Cellular Site Data to Track the Location of a Cellular Phone', 18 *Richmond Journal of Law & Technology* (2011) 1–43.

[8] *Ayyash* Trial Judgment, *supra* note 2, at § 2107ff.

[9] Donaldson *Voir Dire*, *Ayyash and others* (STL-11-01/T/TC), Trial Chamber, 8 May 2017; Decision allowing prosecution analyst Andrew Donaldson to provide opinion evidence, *Ayyash and others* (STL-11-01/T/TC), Trial Chamber, 2 June 2017.

[10] *Ayyash* Trial Judgment, *supra* note 2, at § 2541.

specialized that the judge must defer to such testimony or whether the expert witness should educate the court so that the judges might achieve a working knowledge of the evidence and might be convinced or unconvinced by it. In the *Ayyash* case, the court rejected education and methodological rigour. Instead, the judges opted to defer to a summarized collection of what they characterized as supposedly common-sense inferences.[11] Thus, the court was able, by this circuitous path, to arrive at substantially identical conclusions to those produced by the 'quasi-expert' summarizing witness. It is clear from the trial documents that the court was conscious of the importance of experts demonstrating a robust scientific methodology for scientific evidence. The judges were also aware of the fact that opinion evidence based upon an insufficiently robust methodology would be of little or no probative value. Faced with these challenges, the court could have engaged in a constructive pedagogic dialogue with the genuine domain expert to ascertain the limitations of his expert testimony accurately. This course may have limited the court's ability to draw robust inferences of guilt or innocence from the testimony. Nonetheless, the resulting judgment would have been comparatively safe. However, such opportunities were rejected.[12]

The *Ayyash* case — its judgment founded upon the reports of experts and non-experts — thus discloses a fundamental procedural and juridical issue: the vexed question of whether international courts should defer to or be educated by, professional expert witnesses. This issue is especially pertinent to the international criminal justice field, given the range of expert witnesses employed in the typical international criminal justice trial, and therefore requires elaboration. However, it should be highlighted at this stage that this study does not seek to merely situate the deference and education debate within the existing practices of international courts and tribunals, though pre-existing practice will be discussed. Rather, the study emerges from a normative understanding of the criminal trial process: an account which extends its normative foundations across all legal systems, from civil to common law, from domestic to international. And it is against these normative foundations that the author seeks to evaluate the procedures and practices of modern international courts and tribunals, in their empirical realities.[13]

Those empirical realities have often been directed by the 'realities on the ground' that render the investigatory stage of international trials comparatively vexed, particularly in relation to the collection of evidence.[14] Therefore, the utilization of forensic expertise in respect of core international crimes (principally relying on forensic archaeologists, pathologists, and anthropologists) has been regrettably underdeveloped, particularly before the Special Court for Sierra Leone (SCSL),[15] the Extraordinary Chambers in the Courts of Cambodia (ECCC)[16] and the International Criminal Tribunal for Rwanda (ICTR).[17] A notable exception was the International Criminal Tribunal for the former Yugoslavia (ICTY), where

[11] Decision allowing prosecution analyst Andrew Donaldson to provide opinion evidence, *Ayyash and others* (STL-11-01/T/TC), Trial Chamber, 2 June 2017, at § 78.

[12] K.M. Richmond and S.A. Piccolo, 'Between Fact and Opinion: The *Sui Generis* Approach to Expert Witness Testimony in International Criminal Trials', 22 *International Criminal Law Review* (2021) 1016–1043.

[13] A. Duff, L. Farmer, S. Marshall, and V. Tadros, 'Towards a Normative Theory of the Criminal Trial', in A. Duff et al. (eds), *The Trial on Trial. Vol. 1: Truth and Due Process* (Hart Publishing, 2004) 1–28.

[14] J. Schurr and C. Ferstman, *Strategies for the Effective Investigation and Prosecution of Serious International Crimes*, International Federation for Human Rights, 2010, available online at https://www.fidh.org/ (visited 10 June 2025), at 23.

[15] Commentators have highlighted the 'inequality of arms' between the SCSL prosecution and defence budgets, which impacted on the defence team's ability to secure testimony from military specialists and forensic experts. C.C. Jalloh, 'Special Court for Sierra Leone: Achieving Justice', 32 *Michigan Journal of International Law* (2010) 395–460, at 441.

[16] K. Rudis, 'Evidentiary Challenges Due to the Lapse of Thirty Years', 136 *War Crimes Memoranda* (2006) 1–43.

[17] J.P. Baraybar, 'On the Need for a Scientific Advisory Unit', in M. Bergsmo, K. Rackwitz, and S. Tianying (eds), *Historical Origins of International Criminal Law: Volume 5*, FICHL Publication Series No. 24 (Torkel Opsahl Academic Publisher, 2017) 173–182, at 175.

widespread use was made of expert testimony in the majority of cases.[18] Indeed, this widespread juridical use of testimony from forensic pathologists and archaeologists led to marked development within those fields, while proving determinative in a number of leading cases.[19] However, the practice at the ICTY stands as a high-water mark, with subsequent use of expert testimony at the International Criminal Court (ICC) proving comparatively limited,[20] notably insufficient,[21] and deployed solely to provide corroboration of witness testimony.[22]

Nonetheless, the ICC Statute, alongside its overarching Rules of Procedure and Evidence, affords its judges a substantial degree of latitude and flexibility with regard to the admission and the treatment of expert witnesses.[23] The ICC Statute and Rules of Procedure and Evidence specify that the evidence presented, including expert testimony, must meet the test of relevance,[24] and that the Trial Chamber must base its decision 'only on evidence submitted and discussed before it at the trial'.[25] Ultimately, the judges will 'rule on the relevance or admissibility of any evidence' (Article 69(4) ICC Statute).[26] However, procedural fairness must be guaranteed when evaluating said evidence (Article 69(4) ICC Statute). It will be argued that, while this approach allows for procedural innovation and flexibility, the comparatively unstructured treatment of expert evidence — particularly in relation to normative scientific considerations and external standards — may detract from the quality of justice in this forum. These factors may prove particularly problematic given the turn towards digital and open source evidence in international criminal proceedings: investigatory techniques that have yet to establish foundational validity through the articulation of robust and accurate methodologies. While the ICC may have taken the initiative to develop internal guidelines with regard to such forms of evidence,[27] these should harmonize with global and regional standards,[28] in addition to fundamental normative considerations, particularly the normative requirement for judges to demonstrate justified belief in expert testimony.

Such a normatively grounded evaluation necessitates that we examine and articulate the fundamental normative goals of the criminal trial.[29] In his analytic survey of the normative epistemological dimensions of (expert) testimony, Pritchard notes that the juridical literature clusters around two approaches. First, the inferentialist model which 'claims that [a

[18] R.A. Wilson, *Incitement on Trial: Prosecuting International Speech Crimes* (Cambridge University Press, 2017), at 185. Wilson provides a trenchant summary of the number of appearances of expert evidence before the ICTY: Medical experts (141 appearances); forensic scientists (126); social scientists (100); prosecution experts (357: 74%); defence experts (124: 26%).

[19] Judgment, *Krstić* (IT-98-33-T), Trial Chamber, 2 August 2001; Judgment, *Popović et al.* (IT-05-88-T), Trial Chamber II, 10 June 2010; Judgment, *Karadžić* (IT-95-5/18-T), Trial Chamber, 24 March 2016; Judgment, *Mladić* (IT-09- 92-T), Trial Chamber I, 22 November 2017.

[20] Decision on the Disclosure of Evidentiary Material Relating to the Prosecutor's Site Visit to Bogoro on 28, 29, and 31 March 2009, *Katanga and Ngudjolo Chui* (ICC-01/04-01/07), Trial Chamber II, 9 October 2009, § 66; Transcript, *Gbagbo and Blé Goudé* (ICC-02/11-01/15-T-232-ENG ET WT 15-01-2019 4/7 SZ T, ICC), Trial Chamber I, 15 January 2019, § 3.

[21] Judgment Pursuant to Art. 74 of the Statute, *Lubanga Dyilo* (ICC-01/04-01/06-2842 14-03-2012 1/624 SL T), Trial Chamber I, 14 March 2012, §§ 176, 423.

[22] Judgment on the Appeal of Mr Thomas Lubanga Dyilo Against his Conviction, *Lubanga Dyilo* (ICC-01/04-01/06-3121-Red 01-12-2014 1/193 NM A5), Appeals Chamber, 1 December 2014, § 236; Judgment, *Ntaganda* (ICC-01/04- 02/06-2359 08-07-2019 1/539 EC T), Trial Chamber VI, 8 July 2019, § 276; C. Fournet, 'Forensic Evidence in Atrocity Trials: A Risky Sampling Strategy?', 69 *Journal of Forensic and Legal Medicine* (2020) 1–6.

[23] B. Krzan, 'Admissibility of Evidence and International Criminal Justice', 7 *Revista Brasileira de Direito Processual Penal* (2021) 161–187.

[24] Art. 69(3) ICCSt.; Rule 64(3) ICC RPE.

[25] Art. 74(2) ICCSt.

[26] Art. 69(4) ICCSt.

[27] ICC Press Statement, 'ICC Prosecutor Karim A.A. Khan KC announces launch of advanced evidence submission platform: OTPLink', 24 May 2023, available online at https://www.icc-cpi.int/news/icc-prosecutor-karim-aa-khan-kc-announces-launch-advanced-evidence-submission-platform-otplink (visited 10 June 2025).

[28] A.M. Marshall, 'Quality Standards and Regulation: Challenges for Digital Forensics', 43 *Measurement and Control* (2010) 243–247.

[29] An outline plan of this normative article is provided at the close of Section 2.

judge or juror] cannot gain a justified belief about a proposition simply on the basis of [assertion], as one needs independent grounds to justify the belief'.[30] Secondly, and in contrast, Pritchard notes the existence of a more pragmatic *credulist* approach which allows for justified belief purely based upon assertion. In terms of expert testimony, these two approaches will be seen to align with the pedagogic and deferential models, discussed *infra*. Consequently, these approaches also align with particular theories of truth, again discussed *infra*. This carries particular ramifications for procedure in international criminal courts, given that the ICC places a premium on 'truth-seeking'.[31]

There should thus be alignment between the theory of truth at play in international proceedings and the overarching model of testimony. Furthermore, these approaches must also structure the relations between the judge and the expert witness. The tensions and implications nested in that choice: whether the judge chooses to defer or to understand go to the heart of theories of truth with wide normative implications. As Jackson states in his normative analysis of expert testimony and trial procedure, given the increasing complexity of courtroom testimony, trial fact-finders will have to adopt 'a more active role in interacting with experts so that they can understand what they say. This may have repercussions for the concentrated trial as [fact-finders] may require more time to be educated about the evidence'.[32] Thus, the normative debate between pedagogic and deferential approaches is fundamental.

However, these issues have yet to generate a broad and developing body of literature within the scholarship on evidence and procedure, particularly in relation to international criminal courts and tribunals. In its purest form, the discussion is limited to a small number of papers by a trio of evidence scholars: Allan, Miller, and Imwinkelried.[33] These works form the cornerstones of the normative debate and will be the subject of sustained analysis. However, their insights are necessarily placed in a broader procedural and systematic perspective through an analysis of the work of the noted evidence scholar Damaška,[34] alongside the juristic scholarship of Cover.[35] These contributions are themselves supplemented with philosophical approaches drawn from the works of Haack, whose 'foundherentist' epistemology is explicitly endorsed by central figures in the field of evidence studies.[36] In addition to being avowedly normative, this debate is explicitly interdisciplinary, focusing as it does on the interactions of legal professionals with experts from the humanities, natural sciences, and social sciences (as well as a body of technical professionals). Thus, there also exists a strong sociological dimension, resonating with the literature on Science and Technology Studies

[30] D. Pritchard, 'Testimony', in A. Duff et al. (eds), *The Trial on Trial Vol. 1: Truth and Due Process* (Hart Publishing, 2004) 101–120, at 101–102.

[31] M. Klinkner, and E. Smith, 'The Right to Truth, Appropriate Forum and the International Criminal Court', in N. Szablewska and S-D. Bachmann (eds), *Current Issues in Transitional Justice: Towards a More Holistic Approach* (Springer International Publishing, 2014) 3–29; A.M. Plevin, 'Beyond a "Victims' Right": Truth-Finding Power and Procedure at the ICC', 25 *Criminal Law Forum* (*CrimLF*) (2014) 441–464; J.V.H. Holtermann, 'One of the Challenges that Can Plausibly Be Raised Against Them: On the Role of Truth in Debates About the Legitimacy of International Criminal Tribunals', in N. Hayashi and C.M. Bailliet (eds), *The Legitimacy of International Criminal Tribunals* (Cambridge University Press, 2018) 206–227.

[32] J.D. Jackson, 'The Function of the Criminal Trial in Legal Inquiry', in A. Duff et al. (eds), *The Trial on Trial Vol. 1: Truth and Due Process* (Hart Publishing, 2004) 121–145, at 144.

[33] See Section 3. See also Roberts' trenchant analysis of the debate between proponents of deference and pedagogy, in P. Roberts, 'Paradigms of Forensic Science and Legal Process: A critical diagnosis', B370: 20140256 *Philosophical Transactions of the Royal Society* (2015) 1–10.

[34] M.R. Damaška, *The Faces of Justice and State Authority: a Comparative Approach to the Legal Process* (Yale University Press, 1986).

[35] R.M. Cover, *Narrative, Violence, and the Law: The Essays of Robert Cover* (University of Michigan Press, 1992).

[36] S. Haack, *Evidence Matters* (Cambridge University Press, 2014).

(STS). Thus, STS scholars — principally Edmond[37] — have contributed to the defence versus education debate, and such work is considered alongside that of Jasanoff[38] and Wynne.[39]

2. AIMS AND OBJECTIVES

By considering this fundamental normative issue through an interdisciplinary doctrinal analysis of the works specified, the present study seeks to address the core questions that structure this special journal issue: specifically, who defines — or possesses the means to define — what counts as professional expertise and praxis within international criminal fora; which forms of expertise and praxis are thereby eliminated or ignored; and, centrally, in what ways — and by whom — are the courts' constructions of expertise challenged, and with what results. It is posited that the present study makes a meaningful contribution to answering these questions in the following ways:

A. Defining Professional Expertise and Praxis in International Criminal Fora

By exploring the dichotomy between deference and education in normative terms, this study illuminates the ways in which the international courts conceptualize and interact with experts from other disciplines. This dynamic directly influences our understanding of what counts as professional expertise and may lead to a heightened awareness of the ways in which systematic procedural approaches (be they adversarial, inquisitorial, or hybridized) and the practices of international criminal courts shape the criteria by which expertise is evaluated and acknowledged. Furthermore, the discussion of courts' reference to normative external standards (or failure to apprehend such normative standards) highlights the ways in which professional expertise is codified and formalized within international criminal tribunals. This process determines which fields and forms of knowledge are prioritized and legitimized, thereby shaping the boundaries of what is recognized as valid professional praxis.

B. Eliminating or Deprecating Certain Forms of Expertise and Praxis

The identification of disparities in the deference accorded to experts drawn from particular fields, and generalized doubts as to their credibility, may point to systemic biases that serve to marginalize or exclude certain forms of expertise.[40] For example, fields perceived as lacking the methodological rigour normally associated with the natural sciences may receive less credence, limiting their influence in shaping judicial outcomes.[41] Further, the present analysis illuminates the ways in which the unique goals and norms of international criminal justice — its underlying *nomos* — shape practices of expert evaluation, and suggests that those forms of expertise which are aligned with institutional norms may be favoured, while others are overlooked. This dynamic has implications for determining which voices are amplified or silenced in international criminal justice fora, and the degree to which international justice

[37] G. Edmond, 'The Next Step or Moonwalking? Expert Evidence, the Public Understanding of Science and the Case against Imwinkelried's Didactic Trial Procedures', 2 *The International Journal of Evidence & Proof* (1998) 13–31.

[38] S. Jasanoff, 'Ordering Knowledge, Ordering Society', in S. Jasanoff (ed.), *States of Knowledge* (Taylor & Francis, 2004) 13–45.

[39] B. Wynne, 'Sheep-Farming after Chernobyl: A Case Study in Communicating Scientific Information', 31 *Environment: Science and Policy for Sustainable Development* (1989) 10–39; B. Wynne, 'Misunderstood Misunderstanding: Social Identities and Public Uptake of Science', 1 *Public Understanding of Science* (1992) 281–304; B. Wynne, 'Social Identities and Public Uptake of Science: Chernobyl, Sellafield, and Environmental Radioactivity Sciences', 19 *Radioactivity in the Environment* (2013) 283–309.

[40] R.A. Wilson, 'Expert Evidence on Trial: Social researchers in the international criminal courtroom', 43 *American Ethnologist* (2016) 730–744; E.J. Imwinkelried, 'A New Era in the Evolution of Scientific Evidence: A Primer on Evaluating the Weight of Scientific Evidence', 23 *William and Mary Law Review* (*Wm. & Mary L. Rev.*) (1981) 261–290.

[41] M. Klamberg, 'Epistemological Controversies and Evaluation of Evidence in International Criminal Trials', in D. Robinson (ed.), *The Oxford Handbook of International Criminal Law* (Oxford University Press, 2020).

adheres to, or departs from, normative understandings of both scientific production and legal procedure.

C. Challenging Constructions of Expertise

By emphasizing the role of the judge in engaging with expert testimony, this study underscores how courts construct their understanding of expertise through active interpretation rather than passive determination.[42] Nonetheless, this leaves unresolved the fact that certain constructions of expertise may yet be challenged, particularly when they clash with alternative or external ontological or epistemic frameworks. Therefore, this article proposes a hybrid epistemic approach that introduces a normative mechanism for systematically engaging with diverse forms of expertise. This approach could empower judges to critically assess and balance competing claims, challenging entrenched biases and improving the inclusivity and robustness of expertise in international criminal justice.

D. Challenging Expertise

By interrogating how courts evaluate and integrate expert testimony, this study explores the consequences of challenging established constructions of expertise. It provides insights into how such challenges can lead to shifts in procedural practices or even international judicial norms. Furthermore, the focus on the division of epistemic labour and the role of external normative standards suggests that courts' engagement with diverse expertise has the potential to transform judicial operations, leading to a more nuanced and comprehensive understanding of justice in international contexts. In summary, this article not only examines how international criminal courts construct and apply notions of expertise but also highlights the mechanisms through which these constructions are shaped, challenged, and developed. It provides a critical lens to understand the power dynamics and epistemic negotiations at play, contributing to broader discussions regarding inclusion, legitimacy, and fairness in international criminal justice.

Thus, the study proceeds as follows. In the following section, the existing literature on the topic is reviewed, and the normative debate is both clarified and elaborated, specifically, highlighting that the current debate is dichotomous and marked by a distinction between common law and civil law procedure. However, the fact that international trials employ a hybrid approach necessitates that we endeavour to situate the debate in the international criminal justice realm. Therefore, the following section isolates three distinct elements of the deference and education dichotomy, each holding ramifications for the international criminal justice field. The first subsection deals with the role of external standards and systems of accreditation. The following subsection deals with the epistemic role of the trier of fact. It recommends the educative approach, which would pedagogically arm the judge with an appropriate body of propositional and conceptual knowledge. This approach, it is posited, is procedurally, theoretically, and epistemically commendable. The final subsection considers the utility of systems founded upon a division of epistemic labour. Section 4 then moves from matters of epistemology to theories of truth. It considers the arguments for either a coherence theory of truth or a foundationalist theory of truth. This section focuses on the hybrid nature of international procedure and thus recommends a degree of ontological and epistemic reflexivity on the part of international criminal justice judges. The concluding section of this study highlights possible obstacles. Taking the foregoing into account, it notes that the unique ontological and epistemic approach to expert testimony discernible in the international arena will necessarily be impacted by the unique teleological impulses of

[42] E.J. Imwinkelried, 'Improving the Presentation of Expert Testimony to the Trier of Fact: An Epistemological Insight in Search of an Evidentiary Theory', 52 *Arizona State Law Journal* (2020) 49–73.

international criminal courts and tribunals. Such impulses may prove problematic when courts and tribunals attempt to apply normative conceptions of trial practice and procedure to international courts. The study therefore closes with a series of specific conclusions and remedial recommendations.

3. DEFERENCE, EDUCATION AND THE EXPERT WITNESS

When considering the debate on the fundamental issue of deference to experts or education by experts, it is necessary to consider, from a normative perspective, the fundamental role of the expert witness within the trial system. If expert testimony is to be of utility to the trier of fact, the expert must bridge the knowledge gap between his or her specialized experience and the common-sense knowledge necessary to understand the technical factual matter at hand. To traverse that gap, two solutions emerge: 'either the necessary background information could be provided through testimony, or fact-finders could defer to the judgment of [experts]'.[43] Take the example of forensic DNA evidence within the context of a criminal trial. The DNA scientist should ideally explain to the judge (or jury) what DNA is, how it is drawn from a crime sample, how the sample is processed, how the results are evaluated, and how the statistical conclusion is arrived at. Such education could aid the judge or jury in their determinations, particularly where investigations, methods, and results are challenged.[44] Alternatively, the scientist could simply report the final statistical results to the judge or jury, the trier of fact relying solely on the scientist's credibility to arrive at a determination.[45] The latter approach is repudiated by modern courts, given that such knowledge claims will be based solely upon the *ipse dixit* of the expert.[46] Specifically, the judge or juror is being asked to accept the veracity of the expert's claims based upon the expert's training, experience, and educational credentials alone. While training, experience, and education are crucial cornerstones of accreditation and procedural recognition (such as inclusion in the ICC Registry list of approved experts),[47] it is widely recognized that these features form a necessary but insufficient base on which to justify a belief in the accuracy and veracity of opinion evidence.[48]

It should be noted that this dichotomous issue assumes differing degrees of significance depending on whether the expert is testifying in a common law or civil law — or indeed hybridized international — system. That is due to the differing levels of importance that each system places on externally mediated scientific standards, their divergent understandings of the role of the judge (hence differing approaches to the understanding of 'truth'), and the degree to which the court is willing to take advantage of a division of epistemic labour. However, it should be reiterated that from a normative perspective, it is desirable for the judge or juror to engage pedagogically with expert witness testimony. This approach accords with modern practice in common law adversarial jurisdictions, wherein Miller and Allen fix the terms of the debate. As they argue, experts — both scientific and technical — draw upon a body of formal education, informal training, and extended immersion in the field,

[43] R. Allen and J. Miller. 'The Common Law Theory of Experts: Deference or Education', 87 *Northwestern University Law Review* (1993) 1131–1147, at 1133.

[44] D.A. Nance and S.B. Morris, 'Juror Understanding of DNA Evidence: An Empirical Assessment of Presentation Formats for Trace Evidence with a Relatively Small Random-Match Probability', 34 *The Journal of Legal Studies* (2005) 395–444.

[45] J.K. Koehler, 'Error and Exaggeration in the Presentation of DNA Evidence at Trial', 34 *Jurimetrics* (1993) 21–39.

[46] T.G. Gutheil and H. Bursztajn, 'Avoiding *Ipse Dixit* Mislabeling: Post-Daubert Approaches to Expert Clinical Opinions', 31 *Journal of the American Academy of Psychiatry and the Law* (2003) 205–210.

[47] G. Chlevickaitė, B. Hol'and C. Bijleveld, 'Judicial Witness Assessments at the ICTY, ICTR and ICC: Is There "Standard Practice" in International Criminal Justice?', 18 *JICJ* (2020) 185–210.

[48] M.J. Saks, 'Banishing *ipse dixit*: The Impact of *Kumho Tire* on Forensic Identification Science', 57 *Washington and Lee Law Review* (2000) 879–900.

building a body of experience whose replication is impossible within the confines of the criminal trial.[49] Hence, to ensure efficient trial management, there is a strong impulse to defer to expert opinion. However, this approach directly challenges the normative principles of rational adjudication in a manner which reaches the core of the ideal trial model.

Specifically, in a criminal law trial, the adjudicator must absorb and deliberate upon the bare sensory inputs and impressions recounted in eyewitness testimony, building upon this basic testimony with inferences relating to what these observations might plausibly warrant. In so doing, the judge or juror is aided by rigorous cross-examination or, in the case of civil law systems, through active inquiry. However, whenever expert witnesses provide opinions on the submitted facts, the ability of the witness to rationally weigh the evidence is potentially limited. This is due to the specialized nature of expert testimony.[50] It is also due to the formidable barriers to providing judges or jurors with the stock of undergirding information, concepts, and principles necessary to weigh the plausibility and relevance of the expert testimony.[51] Hence the impulse to depart from the normative expectations of the rational trial model and to defer to expertise.[52]

Indeed, it is established that civil law systems display a greater tendency to defer to the conclusions of expert reports.[53] Civil procedural systems are neither as temporally limited nor so reliant on instantaneous testimony as those of their common law counterparts. Therefore, the civil law judge, even though they enjoy greater inquisitorial latitude to interact with experts in a pedagogic inquiry, is more likely to instruct the expert on which questions to address in the latter's report, for later judicial review. Furthermore, the dialectic tensions which may drive deeper inquiry are largely absent in civil proceedings. As Damaška states, 'the Continental court reduces the bipolar tensions of factual inquiries, the means of proof being more easily conceived of as repositories of neutral information'.[54]

While this issue has thus received sporadic attention, mainly within the Anglosphere,[55] it has received scant regard in the international criminal justice context. Yet the education and deference debate bears significant implications for the field due to the international criminal justice system's use of hybridized forms of procedure.[56] For the ICC judge enjoys both the opportunity to review reports in addition to making active enquiries of expert witnesses in instantaneous adversarial proceedings. Furthermore, the struggle between deference and education necessarily conditions the three overarching questions at the core of this symposium. As Miller and Allen argue, '[a]lthough the controversies over expert testimony purport to be about other things, they in fact are controversies over whether the [procedural] norm of

[49] Imwinkelried, *supra* note 42.

[50] P. Roberts and C. Aitken, *The Logic of Forensic Proof. Practitioner Guide No.* 3, Royal Statistical Society, Working Group on Statistics and Law Practitioners Guides, 2014, available online at: https://rss.org.uk/news-publication/publications/law-guides (visited 9 April 2025); G. Samuel, 'Is Legal Reasoning Like Medical Reasoning?', 35 *Legal Studies* (2015) 323–347.

[51] J. Peake, 'Creating a Hybrid System of Procedure in International Criminal Law: A Blending of Adversarial and Inquisitorial Processes', 22 *International Law Students Association Quarterly* (2013) 22–29; R. Derham and N. Derham, 'From Ad Hoc to Hybrid: The Rules and Regulations Governing Reception of Expert Evidence at the International Criminal Court', 14 *Int'l J. Evidence & Proof* (2010) 25–56; C. Kress, 'The Procedural Law of the International Criminal Court in Outline: Anatomy of a unique compromise', 1 *JICJ* (2003) 603–617.

[52] For a nuanced defence of the deferential approach, see M. Ubertone, 'A Deference-Based Theory of Expert Evidence', 108 *Archiv für Rechts-und Sozialphilosophie* (2022) 241–269, at 242. Also note the debate between Professors Carlson and Rice on the degree to which an expert may rely on unstated out-of-court materials as a foundational base for in-court testimony, and potential contraventions of the hearsay doctrine: R.L. Carlson, 'Policing the Bases of Modern Expert Testimony', 39 *Vanderbilt Law Review* (1986) 577–593; P.R. Rice, 'Inadmissible Evidence as a Basis for Expert Opinion Testimony: A Response to Professor Carlson', 40 *Vanderbilt Law Review* (1987) 583–596.

[53] M.R. Damaška, *Evidence Law Adrift* (Yale University Press, 1997), at 78.

[54] *Ibid.*

[55] See Allen and Miller, *supra* note 43, at 1133.

[56] *Ibid.*

education should be supplanted by deference when someone qualified as an expert speaks, and thus they can be resolved only by addressing that issue'.[57]

Therefore, the tension between adherence to deference or education — not to be regarded as mutually exclusive concepts — configures not only the role and function of the system's central actors but also serves to structure the overarching system of trial processes: investigation, fact-finding, and adjudication. Necessarily, this dichotomy between deference and education is also linked to the ways in which common law and adversarial systems defer to, or refer to, normative scientific standards and systems of external accreditation, and it is to this topic that discussion now turns.

A. Deference, Education and Standards

The point of departure for an analysis of these interrelated issues — within the context of a focused body of literature — is Imwinkelried's thesis regarding the syllogistic nature of expert testimony.[58] Imwinkelried holds that 'although scientific propositions are derived inductively, in the courtroom scientific testimony is ordinarily presented in a deductive, syllogistic format'.[59] Thus, referring back to the normative theoretical division between inferentialism and credulism, it is clear that experts are generally called upon to present an opinion testimony in an inferential format. Imwinkelried initially cites the landmark US Supreme Court ruling in *Frye v. United States*.[60] Briefly, this judgment advanced the view that scientific evidence should be accepted if it were generally recognized within a particular domain. Imwinkelried cites this case to argue that the general 'principle, procedure, or explanatory theory derived by the inductive scientific technique'[61] — 'the thing from which the [expert's] deduction is made'[62] — represents the major premise of his syllogism. Thus, the set of facts particular to the case — to which the principle is applied — represents the minor premise. The combination of both the major and minor premises leads to a deduced inference. Imwinkelried stresses the distinction between the two premises and the importance of explicitly distinguishing between them.[63] He cautions that failing to do so, may lead to error and imprecision. He further stresses that the expert has no more insight into the underlying facts than does the judge or juror. Indeed, there is a general prohibition against experts testifying on matters of common sense and general inference that are amenable to non-expert interpretation. Such matters fall within the exclusive scope of the judge or juror.[64]

Once again, it should be noted that the literature is limited and tends towards common law instantiations. Thus, Imwinkelried grounds his argument in US Supreme Court jurisprudence, referring to the *Frye* standard. Nonetheless, his argument has broader application. At the time of Imwinkelried's original publication, *Frye* stood as the benchmark for evaluating the tenor of expert witness testimony in US jurisprudence and was typical of many domestic and international approaches. However, the case has been largely superseded by a requirement to assess expert methodologies according to a set of scientific criteria, as specified in the *Daubert* judgment.[65] For present purposes, it is sufficient to note the following points regarding the evolution from *Frye* to *Daubert:* the *Frye* standard held that expert opinion based

[57] Allen and Miller, *supra* note 43, at 1133–1134.

[58] E.J. Imwinkelried, 'The Bases of Expert Testimony: The Syllogistic Structure of Scientific Testimony', 67 *North Carolina Law Review* (1988) 1–28.

[59] *Ibid.*, at 2.

[60] *Frye v. United States* (293 F. 1013 (D.C. Cir. 1923)).

[61] Imwinkelried, *supra* note 58, at 2.

[62] *Ibid.*

[63] Imwinkelried, *supra* note 58, at 3ff.

[64] *Ibid.*

[65] *Daubert v. Merrell Dow Pharmaceuticals, Inc.* (113 S Ct 2786, 2793, 2797 (1993)).

on a scientific technique is inadmissible unless the technique is 'generally accepted' as reliable within the relevant scientific community. However, given the unsettled and diversified nature of progressive research sciences, such an approach inevitably led to the admission of conflicting expert testimony, intractable to the trier of fact. As Judge Hand noted, discussing the 'battle of the experts':

> The trouble with conflicting expert testimony is that it is setting the jury to decide where [experts] disagree. The whole object of the expert is to tell the jury, not facts, as we have seen, but general truths derived from his specialized experience. But how can the jury judge between two statements each founded upon an experience confessedly foreign in kind to their own? It is just because they are incompetent for such a task that an expert is necessary at all.[66]

Such an approach thus led to unnecessary deference to expert opinion. Indeed, the critique from Judge Hand chimes with Allen's critique of *Frye*: specifically, that proponents of deference adhere to a logically impossible position. They cleave to a 'false belief that [it] can occur rationally; it cannot. Putting aside extreme cases of charlatans who are unworthy of discussion, one can rationally choose to whom to defer only if one understands the pertinent field, in which case deference is inherently unnecessary'.[67] The common law courts, alive to the limitations of the *Frye* approach, have now largely disposed of the test in favour of a comparatively developed set of so-called *Daubert* factors. Indeed, the problems generated by the *Frye* approach to expert evaluation have largely been overcome by the subsequent *Daubert* ruling, in which the US Supreme Court set forth several additional modifying criteria according to which the reliability and credibility of expert scientific evidence should be assessed.[68] Specifically, whether the technique had been tested, had been subject to peer review, had a known error rate, had maintained pre-existing standards that were widely accepted in the scientific community, and whether such norms were correctly applied. The unequivocally pedagogic and analytical nature of the *Daubert* approach was clarified in the case of *General Electric Co. v. Joiner* in which the US Supreme Court stressed that the court's focus must remain on the methodology and the techniques employed and not on the expert's conclusion, explaining — as regards admissibility — that 'a court may conclude that there is simply too great an analytical gap between the data and the opinion proffered'.[69] Thus, jurisprudence turned in an explicitly anti-deferential direction, with the *Daubert* factors themselves being expanded to include testimony based upon non-scientific technical expertise, through the determinations in the *Kumho Tire* judgment.[70]

Situating the above in the field of international criminal justice, it may be demonstrated that the international courts have given some credence to these *Daubert* factors, albeit without resort to a formalized procedure.[71] Nor have they availed themselves of the guidance offered by normative critiques of the requirement for pedagogy in judicial inquiry. Returning to Imwinkelried, the author addresses interposing critiques of his original analysis while advancing an educative proposal that is markedly pedagogic. Imwinkelried frees himself from

[66] B.L. Hand, 'Historical and Practical Considerations Regarding Expert Testimony', 15 *Harvard Law Review* (*HarvLRev*) (1901) 40–58, at 54.

[67] E.J. Imwinkelried, 'A New Era in the Evolution of Scientific Evidence: A Primer on Evaluating the Weight of Scientific Evidence', 23 *William & Mary Law Review* (1981) 261–290, at 267.

[68] R. Allen, 'Expertise and the *Daubert* Decision', 84 *Journal of Criminal Law & Criminology* (1993) 1157–1175.

[69] *General Electric Co. v. Joiner* (522 S.Ct. 136 (1997)) at 146.

[70] *Kumho Tire Co., Ltd v. Carmichael* (119 S.Ct. 1167 (1999)).

[71] Donaldson *Voir Dire, Ayyash and others* (STL-11-01/T/TC, 020170508), Trial Chamber, 8 May 2017; Decision allowing prosecution analyst Andrew Donaldson to provide opinion evidence, *Ayyash and others* (STL-11-01/T/TC), Trial Chamber, 2 June 2017.

US procedural norms, contemplating a model which would see judges, court-appointed experts, and jurors adopting the roles of teacher, teaching assistant, and student, respectively. This supplement to the adversarial presentation of expert testimony would, the author suggests, require the judge to absorb relevant material in order to summarize and present that material to the trier of fact through a didactic and pedagogic process.[72]

Imwinkelried's proposal has attracted criticism for its purportedly naive and circumscribed construction of normative scientific activity, alongside his assertion that there are comparatively indisputable scientific propositions to be distilled from the mass of expert testimony and transmitted to the trier of fact.[73] Such reprovals are not without warrant, and the division between judge and juror has little traction within the international criminal justice field. Nonetheless, Imwinkelried's rationale for pedagogically arming the judge with a stock of propositional and conceptual knowledge is normatively, theoretically and epistemically commendable. Furthermore, it may be argued that, from an epistemic perspective, there is little reason to distinguish between judge and juror. Where expert testimony is concerned, both judge and juror occupy the same position. Hence, there is no need to seek recourse to the appointment of putatively neutral experts or to assign to the bench the role of didactic mediator. Such importations, it is suggested, may be traced to the peculiarities of American procedural doctrine. Imwinkelried's argument, after all, is located firmly within that American procedural model, evincing a clear division of epistemic labour between judge and jury. Such distinctions are frequently referred to in the international criminal justice field when international judges seek to define their epistemic role and the relations between international criminal justice judges and expert witnesses. However, they are less crucial than commonly presented.

B. Deference, Education and the Epistemic Role of the Judge

It is notable that within the international criminal justice field, stereotypical perspectives on the epistemic relations between judge and jury persist, and these articulations continue to condition the tension between deference and education. A paradigmatic example is found in the ICC case involving Laurent Gbagbo and Charles Blé Goudé, in which Judge Tarfusser refused to allow testimony from a forensic DNA expert on the importance of external standards and accounting for cognitive bias on the grounds that the members of the bench were 'not a jury'.[74] The implication is that international judges require no pedagogic referral to common external standards. However, despite the teleological impulses of the international criminal justice project — driven by its claims to dispense 'truth' alongside justice — assertions regarding the epistemic privileging of the international criminal judiciary should be approached with scepticism.[75] As conveyed in the discussion of the *Daubert* principles, the common law model assigns to the judge the role of evidential gatekeeper, charged with filtering out testimony that carries the potential to bias or otherwise distort the inferential duties

[72] E.J. Imwinkelried, 'The Next Step after Daubert: Developing a similarly epistemological approach to ensuring the reliability of nonscientific expert testimony', 15 *Cardozo Law Review* (1993) 2271–2294. Allen also posits that '*Daubert* provided a good first step in essentially requiring the trial judge to become sufficiently educated about a proposed testimony to judge it rationally. However, it did not take the equally critical second step of requiring its presentation to the fact finder in the same fashion, thus allowing the deferential mode of presenting expert testimony to continue'. R. Allen, 'Fiddling While Rome Burns: The Story of the Federal Rules and Experts', 86 *Fordham Law Review* (2018) 1551–1558, at 1553.

[73] Edmond, *supra* note 37; E.E. Deason, 'Court-Appointed Expert Witnesses: Scientific Positivism Meets Bias and Deference', 77 *Oregon Law Review* (1998) 59–156.

[74] Transcripts, *Gbagbo and Blé Goudé* (ICC-02/11-01/15 - ICC-02/11-01/15-T-162-ENG ET WT 29-05-2017 1/80 NB T), 29 May 2017.

[75] M.J. Christensen, 'The Judiciary of International Criminal Law: Double Decline and Practical Turn', 17 *JICJ* (2019) 537–555.

of the fact-finder, in an effort to facilitate rational adjudication.[76] Nonetheless, such filtering occurs in *all* common law cases, the vast majority of which do not require the involvement of a jury. Where a jury is involved, the judge, having absorbed the import of the evidence in alignment with the educative model, supervises the presentation of the relevant and reliable testimony to the jury. Crucially, it should be noted that this US model stands as a paragon of testimonial restriction through the use of stringent admissibility criteria. However, on a historical note, it should be stressed that this archetypal model of court procedure — which has exerted influence on the thought and jurisprudence of the international criminal judiciary[77] — is not wholly representative of jury models across Europe and the common-law world. The latter were conceived in conformity with Enlightenment ideals regarding the value of the democratic intellect and the general capacity of the citizenry to appraise legal and factual arguments. Indeed, it is posited that creative and generalizing mischaracterizations regarding the relative ignorance of the layperson in his or her capacity as juror continue to inform much juridical theorizing on the part of international criminal lawyers. This serves to bias and distort clear procedural conceptualizing and development within the international criminal justice sphere. On the other side, it may be stated that the central purpose of *Daubert*-style evaluation criteria is to ensure and maintain the standards of expert testimonial inputs. Derogating from these would lead astray the judge and jury alike. Indeed, Allen provides support for the assertion that no epistemic or conceptual differential can be applied between the judge and jury because 'everyone is expected to have a firm grip on the nature of reality and the existence of causal relationships ... to be able to engage in orderly reasoning, whether deductive, inductive, or even on occasion abductive, and to be able to perceive the relationship between evidence and propositions, between cause and effect'.[78]

It is for the foregoing reasons that Allen delivers a resounding 'No!' in answer to the question of whether there are cases that defy the fact-finding abilities of a lay jury, noting that '[t]he deficits of juridical fact-finders are not cognitive; they are informational'.[79] He further opines that the collective jury may enjoy a greater capacity to adequately understand the evidence than can a sole trier of fact sitting on the bench, asserting that 'it would be a remarkable case that truly defied their collective cognitive abilities'.[80] Counterintuitively, it is a direct consequence of the juror's cognitive capacities and inferential ability — as opposed to a supposed facility and incapacity — that the juror may fall prey to cognitive biases. As Allen further posits, any individual deficits and biases may be ameliorated and overcome by the division of the cognitive load amongst several randomly selected individuals: a procedural safeguard that is markedly absent on the bench.[81] However, as demonstrated in the example of *Gbagbo and Blé Goudé*, lessons regarding the foundational support for the didactic nature of expert testimony and lessons regarding the cognitive equivalence of judge and juror have yet to be appreciated and absorbed.

[76] K.H. Kunert, 'Some Observations on the Origin and Structure of Evidence Rules under the Common Law System and the Civil Law System of Free Proof in the German Code of Criminal Procedure', 16 *Buffalo Law Review Buff* (1966) 122–164.

[77] *Gbagbo and Blé Goudé, supra* note 74.

[78] Allen, *supra* note 68, at 1158.

[79] *Ibid.*

[80] *Ibid.*; J.B. Thayer, 'Jury and Its Development', 5 *Harvard Law Review* (1891) 249–298.

[81] R.F. West, R.J. Meserve, and K.E. Stanovich, 'Cognitive Sophistication does not Attenuate the Bias Blind Spot', 103 *Journal of Personality and Social Psychology* (2012) 506–519; K.E. Stanovich and R.F. West, 'Natural Bias is Independent of Cognitive Ability', 13 *Thinking & Reasoning* (2007) 225–247; A.M. Jeanguenat, B. Budowle, and I.E. Dror, 'Strengthening Forensic DNA Decision-Making Through a Better Understanding of the Influence of Cognitive Bias', 57 *Science & Justice* (2017) 415–420.

C. The Division of Epistemic Labour

Drawing these threads together, it is posited that the international criminal justice fact-finder fulfils an epistemically isolated role due to the unique structuration of international criminal fora, generally characterized by the absence of a jury and a holistic approach to adjudication. This role requires the judge to weigh the totality of evidence absent pedagogic interactions with other agents, either internal to the trial process (expert witnesses) or external to that process (standards and accreditation agencies). On a theoretical level, we might state that the international criminal justice judge is procedurally and structurally limited in his or her ability to exploit the potentials afforded by a division of epistemic labour. One way of resolving this problem is to mobilize the theory of epistemic division within complex societies,[82] which proposes a Division of Epistemic Labour such that the doxastic potentials (i.e. the warranted beliefs) of an epistemic subject — in this instance, a trier of fact in a criminal trial — are both conditioned, and subject to variation, by way of the epistemic perspective(s) of a distributed network, or community, of agents and institutional actors operating beyond the boundaries of the court or tribunal.[83] Goldberg characterizes this matrix of relationships in terms of the epistemic dependence of the epistemic subject, which, in terms of the present study, may suggest a requirement for deference. However, that is expressly not the case. As Ward states in reference to a paradigmatic example instantiated in the English criminal justice system but referable to the international criminal justice arena: 'Non-experts do not have to place blind trust in individual experts: rather, their trust is placed in a complex system by which experts monitor one another. This includes both formal monitoring by the Regulator, the UK Accreditation Service … and informal monitoring of those bodies by academics, practitioners, Parliamentary Committees … and others.'[84]

Ward proceeds to ground the foregoing analysis in practical terms, highlighting that this meso-level matrix of epistemic inter-dependency requires education and conceptual literacy, such that 'judges and lawyers need to keep abreast … of key epistemic "monitors" … and be informed of any cogent critiques of those bodies work'.[85] Thus, Goldberg and Ward both demonstrate the centrality of education and conceptual literacy within an interdependent system of adjudication. This, in turn, requires a contextually aware and reflexive approach to the admissibility of expert evidence. Indeed, within an adversarial system, the admissibility criteria allow the informed trier of fact to utilize information, principles and concepts drawn from Goldberg's distributed constellation of extrinsic actors, including standards agencies, government committees, accreditation agents, regulatory bodies and both public and private expert service providers. However, they also serve a countervailing purpose: to explicitly and iteratively demarcate a distinct boundary between processes, agents, and activities that are intrinsic, or extrinsic to the ongoing proceedings, filtering expert reports and testimony according to a set of explicit and articulated standards, be they domestic, regional or international.

As discussed, in international criminal justice, there is a marked departure from these domestic, regional, and global norms. Notably, the procedural rules of the ICC advance 'no clear admissibility test … in regard to the admission of expert evidence. In particular, no consistent and transparent legal test to safeguard the reliability of expert evidence, including

[82] S. Goldberg, 'The Division of Epistemic Labor', 8 *Episteme* (2011) 112–125; S. Goldberg, *To the Best of Our Knowledge: Social Expectations and Epistemic Normativity* (Oxford University Press, 2018).

[83] J. Habgood-Coote, 'Group Knowledge, Questions, and the Division of Epistemic Labour', 6 *Ergo* (2019) 925–966.

[84] T. Ward, 'Explaining and Trusting Expert Evidence: What is a "Sufficiently Reliable Scientific Basis"?', 24 *Int'l J. Evidence & Proof* (2020) 233–254, at 250.

[85] *Ibid.*, at 250–251.

the underlying methodology and data, can be found in the case law of the ICC'.[86] In addition to this *laissez-faire* approach to admissibility, the ICC, like other international courts and tribunals, assumes an unjustifiably hermetic approach to procedure and adjudication that precludes liaison with a distributed network of epistemic subjects (e.g. the Netherlands Register of Court Experts[87]). In assuming the entire burden of epistemic labour, the trier-of-fact in the international courtroom may find themself relying on potentially unreliable experts due to an absence of discussion around the accreditation of experts, appropriate scientific methodologies, and the integration of domestic, regional, and international standards. Indeed, this *sui generis* approach of epistemic sequestration and broad discretion is exemplified by Regulation 44(5) of the ICC's Regulations of the Court, which remits to the trial chamber a general mandate to specify 'the manner in which [expert] evidence is to be presented'. As Knoops notes, the latitude afforded to the trial chamber runs counter to the normative epistemic requirements of expert testimony, as based upon the mobilization of specialist knowledge.[88] Indeed, what this amounts to in practice is a further shift towards hermetic proceedings based upon deference to expert reports. Furthermore, while a permeable yet highly selective boundary may circumscribe a common law criminal court, the approach of the ICC renders the boundary between the court fully permeable to external agents whose methodologies may be less reliable. In this regard, the self-determination and juridical autonomy of the ICC render it ill-equipped to interrogate those agents upon whose opinions the trier of fact must defer and rely. Such epistemic attenuation must necessarily imbue the court's claims to beget historical truth with a degree of dubiety and requires further analysis.

4. THEORIES OF TRUTH AND EPISTEMIC REFLEXIVITY

Regarding the interaction between the legal field and expert witnesses within international criminal fora, this article posits that the crucial epistemic and procedural distinctions are ultimately rooted in differing perspectives towards the concept of truth. This is because all discussions of historical accuracy, methods of reasoning, analytical approaches, and the role of scientific and technological testimony in the international courtroom, crystallize around particular epistemic theories of truth — drawn from the literature on legal philosophy and epistemology — and generally represented by proponents of either foundationalism or coherentism. Adherents of foundationalism hold that knowledge is structured like an edifice in which certain basic beliefs or foundations support all other beliefs without themselves requiring support. Coherentism, in contrast, argues that beliefs are justified based on how well the individual 'planks' fit together to form a cohesive and mutually supportive matrix,[89] rather than relying on any foundational undergirding.[90]

The foundationalist approach aligns most readily with a common law adversarial procedure constructed upon a bedrock of externally accredited scientific standards. Conversely,

[86] G.J.A. Knoops, 'The Proliferation of Forensic Sciences and Evidence Before International Criminal Tribunals from a Defence Perspective', 30 *Criminal Law Forum* (2019) 33–60, at 36.

[87] See Richmond and Piccolo, *supra* note 12, at 1037–1042, in which the authors argue that international courts and tribunals situated in the Netherlands are legally obliged to adopt domestic Dutch and European regional standards, based upon the wording of their headquarters agreements. See *Verdrag tussen het Koninkrijk der Nederlanden en de Verenigde Naties betreffende de Zetel van het Speciale Tribunaal voor Libanon* (Agreement between the Kingdom of the Netherlands and the United Nations Concerning the Headquarters of the Special Tribunal for Lebanon), New York, 21 December 2007.

[88] G.J.A. Knoops, *International Criminal Evidence at the International Criminal Court: A Defense Perspective* (Brill Publishing, 2024) Ch.14.

[89] S.O. Hansson and E.J. Olsson. 'Providing Foundations for Coherentism', 51 *Erkenntnis* (1999) 243–265.

[90] E. Sosa, 'The Raft and the Pyramid: Coherence Versus Foundations in the Theory of Knowledge', 5 *Midwest Studies in Philosophy* (1980) 3–26.

the inquisitorial and deferential approach to procedural issues aligns with a theory of truth based upon conformity with coherent legal and historical narratives. This raises questions for an international criminal justice system built upon hybridized procedures. To which theory of truth does it align? It is highlighted that there is, in fact, an intermediate position that aligns with the unique epistemic features of hybrid international criminal justice procedures. Following vigorous epistemic debate from both the foundationalist and coherentist schools, a median position emerged in the form of the legal and epistemological work of Haack.[91] Attempting to overcome substantive objections to foundationalism and coherentism, Haack advanced a 'foundherentist' approach: an approach which also aligns with the theoretical perspectives of rationalist evidence scholars.[92] The central features of foundherentism are the claims that 'a subject's experience is relevant to the justification of his empirical beliefs, but there need be no privileged class of empirical beliefs justified exclusively by the support of experience, independently of the support of other beliefs'.[93] Additionally, that 'justification is not exclusively one-directional but involves pervasive relations of mutual support'.[94] Haack intuitively envisages the foundherentist approach as neither raft nor inverted pyramid, but rather 'like filling in a crossword in which each of the solutions depends on certain initial clues (perceptions, experience) and on the solutions provided by other solutions already filled in (mutual support between beliefs)'.[95] Haack's account is particularly instructive in relation to the present discussion because it sees no disjunction between the mobilization of scientific method with legal inference. This holds clear implications for the evaluation of expert testimony in legal proceedings. Indeed, Haack invokes 'critical common sense' as the motive force propelling all investigatory activity, noting that scientists are not 'in possession of a uniquely rational and objective method of inquiry, unavailable to historians, detectives, and the rest of us, and guaranteed to produce true, or probably true, or progressively more nearly true, or progressively more empirically adequate results'.[96] Nonetheless, Haack also notes the specialization and complexity of scientific production: its principles and theories, methods of experimentation, technical terminology, and use of statistics. And it is precisely these informational processes which, it is posited, require to be pedagogically imparted to the trier of fact.

Nonetheless, additional concerns remain regarding the comparative breadth of expert testimony admitted to the international criminal courts and tribunals. Therefore, while Haack's approach provides a useful starting point to discern an applicable standard of epistemic truth, it requires further extension to account for international criminal justice's extraordinarily varied use of different types of experts. Such variety requires a reflexive understanding of law's specific ontological and epistemic status, compared with the varying ontological commitments of other disciplines, such as medicine, psychology, or political analysis.[97] Indeed, while Haack envisages a unity of epistemology and a democratization of approaches between the sciences and other scientific fields of human investigation, difficulties may arise

[91] S. Haack, 'Epistemology with a Knowing Subject', 33 *The Review of Metaphysics* (1979) 309–335; S. Haack, *Evidence and Inquiry: A Pragmatist Reconstruction of Epistemology* (Blackwell, 1993); S. Haack, 'Epistemology Legalized: Or, Truth, Justice, and the American Way', 49 *American Journal of Jurisprudence* (2004) 43–82; S. Haack, 'Of Truth in Science and in Law', in P. Roberts (ed.), *Expert Evidence and Scientific Proof in Criminal Trials* (Routledge, 2017) 93–116.

[92] Anderson, Schum, and Twining collectively state that 'their own position approximates more closely to the "foundeherentism" of Haack (1993)'. See T. Anderson, D. Schum, and W. Twining, *Analysis of Evidence* (Cambridge University Press, 2005), at 79, note 3.

[93] See Haack (1993), *supra* note 91, at 19.

[94] *Ibid.*

[95] *Ibid.*, at 19ff.

[96] *Ibid.*

[97] S. Solomon, 'International Criminal Courts and the Introduction of the Daubert Standard as a Mode of Assessing the Psychological Impact of Warfare on Civilians: A Comparative Perspective' (Doctoral thesis on file at King's College, London, 2019).

when triers of fact are confronted with a heterogeneous mass of evidence which they must evaluate holistically. This may include expert testimony from the natural sciences in addition to interpretations drawn from the humanities and social sciences.[98] How is the judge to synthesize and evaluate inputs from disciplines that are founded upon completely different approaches to the questions of ontology and epistemology? In other words, questions about what can be known and how we can warrant belief in specific claims. This task may prove particularly problematic for the international criminal justice judge, given that adjudication proceeds in the absence of explicit accreditation by external agencies, such as professional bodies or boards.[99] The issue is encapsulated in Imwinkelried's assertion that 'in the final analysis we call testimony "scientific" because it is generated by the distinctive scientific process'.[100] As discussed, Imwinkelried cleaves to a normative view of scientific production, grounded in experimentation and deductivism. However, as Allen and Miller note, this stands as a satisfactory description of only a subset of 'scientific activity'.[101] They note that 'Freudian-influenced psychiatry and clinical psychology, have resisted the application of scientific technique to their discipline. Farmers are very likely experts when a case raising farming issues is tried in an urban setting'.[102] Thus, a broader conception of expert testimony that extends beyond the strictures of progressive scientific activity is required. Edmond offers a similar critique of Imwinkelried's normative distinctions from the perspective of science and technology studies, arguing that Imwinkelried advances a simplistic view of technical and scientific controversies and appeals to restrictively normative conceptions of scientific production to resolve scientific disputes in the courtroom.[103] These critiques are compelling, but they offer little guidance on the normative approach that triers of fact should take. To answer this question, the following section argues for ontological and epistemic reflexivity on the part of the international criminal bench.

A. The Requirement for Ontological and Epistemic Reflexivity

It has been clearly demonstrated that the international courts take a *laissez-faire* approach to the admission of expert testimony absent any but the most basic admissibility criteria. Further, in this article, it has been argued that — in a departure from normative precepts — international criminal courts act hermetically, assuming the entire epistemic burden absent any dialectic interaction with external standards or reference to extrinsic universal principles. Thus, there exists no selectively permeable border or distinction between the court and a distributed network of external epistemic agents. It may be further argued that, within this deferential approach, there exists in the eyes of the court no established conceptual or professional boundary between scientific and technological expert, the political theorist, and the semi-professional assimilator of experiential evidence (typically a member of a non-governmental organization, or NGO). However, the ability to discriminate between categories of experts is fundamental. The difference, it is posited, is one of conceptual generalizability. An expert may mobilize a set of specialized skills, linked to general, pre-existing, and widely acknowledged criteria, and apply these to the facts of the instant case. Whereas a non-expert professional — typically a member of an NGO testifying as an expert before an international court or tribunal — acts as an intermediary whose testimony — while potentially of great value — is closer to that of an experiential witness, the tenor of which is non-

[98] See Wilson, *supra* note 40.

[99] Ward, *supra* note 84, at 250–251.

[100] Imwinkelried, *supra* note 72, at 2281.

[101] Allen and Miller, *supra* note 43, at 1133–1134.

[102] *Ibid.*; E.J. Imwinkelried, 'The Next Step in Conceptualizing the Presentation of Expert Evidence as Education: The Case for Didactic Trial Procedures', 1 *International Journal of Evidence and Proof* (1997) 128–148.

[103] Edmond, *supra* note 37.

scientific and non-generalizable. It may therefore be pertinent to proceed with a discussion of the ways in which truly scientific or technical expert knowledge traverses legal and scientific disciplinary boundaries, while non-expert knowledge lacks that capacity. Wynne's seminal studies on expert and non-expert knowledge are particularly instructive here.[104] In his landmark study, conducted in the wake of the Chernobyl reactor incident, Wynne compared the tacit knowledge of Cumbrian hill farmers — with regard to local areas of contamination — to that of nuclear experts. Wynne was able to demonstrate that the hill-farmers possessed a significant body of tacit primary source knowledge, which compared favourably with the contributory expertise of credentialed nuclear specialists.[105] However, the former group lacked the interactional expertise necessary to enter into a dialogue with the certified experts or to disseminate their expert knowledge to wider publics.[106] As Jasanoff states:

> the farmers and radiation experts possessed different, complementary knowledges about local soils, grazing conditions, and radioactive caesium uptake into vegetation ... but more significant is the fact that these discrepancies were rooted in different life worlds, entailing altogether different perceptions of uncertainty, predictability and control. The knowledges stemming from these divergent experiential contexts were not simply additive; they represented radically 'other' ways of understanding the world.[107]

Jasanoff's account of Wynne's influential study highlights the incommensurability of heterogeneous disciplinary and non-disciplinary, perspectives. The lack of commensurability is profound when these perspectives share no common doxastic commitment. And that divergence in belief may occur on either the perceptual, cognitive, or epistemological levels, or any combination thereof. To return to Wynne's example, in simple terms, the scientists and the landholders may have arrived at similar conclusions, but they did so in vastly different ways. When we transpose this example to the legal realm, where methodologies must be valid, robust, and capable of being communicated to the judge or juror, the divergence between an experienced layman and a credentialed expert becomes stark. Indeed, Wynne's example ably demonstrates the inability of non-experts to reflexively account for, and overcome, the limitations of their purely experiential knowledge. This resonates with Goldberg and Ward's theory of distributed epistemic labour and the requirement for pedagogic interaction and interdependence between epistemic agents. It is posited that this divergence highlights the clear limitations of testimony sought from non-expert NGO actors recounting non-generalizable experiences. These agents, it is posited, should testify only as eyewitnesses or experienced laypersons, if at all.[108] Such problems could be overcome by introducing admissibility criteria, particularly criteria supported by reference to external accrediting and standard-setting agencies. However, as was previously noted, the international criminal justice arena is hermetic in its epistemic evaluations, circumscribed by a non-discriminating institutional boundary, thus lacking the support of a matrix of supporting agents whose input could promote transparency, accuracy, and trust in expert opinion. This hermetic approach leads not only to deference in relation to expert testimony but a marked inability to separate genuine scientific and technological expertise from inexpert eyewitness

[104] Wynne (1989), *supra* note 39.

[105] *Ibid.*

[106] See H. Collins, 'Studies of Expertise and Experience', 37 *Topoi* (2018) 67–77; H. Collins, 'Three Dimensions of Expertise', 12 *Phenomenology and the Cognitive Sciences* (2013) 253–273; H. Collins, and R. Evans, *Rethinking Expertise* (University of Chicago Press, 2019).

[107] Jasanoff, *supra* note 38, at 47.

[108] N.A. Combs, 'Testimonial Deficiencies and Evidentiary Uncertainties in International Criminal Trials', 14 *UCLA Journal of International Foreign Affairs* (2009) 235.

practices. It also opens the proceedings to incursions by representatives of novel and emergent fields of practice. A paradigmatic example relates to recent attempts to professionalize the collection and use of Digital Open Source Information (DOSI) in the international criminal justice field, and the implications of such mobilizations for transparency and rigour in matters of procedure and expert testimony.[109]

The contemporary turn towards digital evidence collection — particularly the use of digital open-source evidence — raises urgent questions when viewed from the perspective of normative evidence theories and with the conclusions drawn from the preceding analysis.[110] Indeed, it is questionable if, and to what degree, non-expert NGO advocacy and digital open-source 'evidence' gathering is commensurable with the established indicia of expertise as applied to the professions.[111] Further, questions emerge regarding the ability of DOSI methods to conform to articulated standards and regulations. In promoting this emergent field of advocacy, proponents of DOSI highlight the central objective of 'speaking truth to power' through fostering investigatory pluralism and democratization, thus enhancing access to justice.[112] In so doing, adherents to DOSI techniques have condemned prior regimes of human rights fact-finding within the international criminal arena as elitist and view them as requiring thoroughgoing reform and democratization.[113] Given the already non-selective nature of the deferential international criminal justice courts, such claims require thorough critical engagement. Proponents of DOSI techniques have attempted to characterize their field as emerging out of a knowledge controversy, thus contributing to a paradigm shift in human rights fact-finding.[114] Nonetheless, the foundational document of the digital evidence field explicitly denies any attempts to displace pre-existing professional standards. Thus, it remains to be seen whether such developments are genuinely facilitating pluralism and democratizing the field or whether DOSI approaches could be open to the criticism of detracting from — marked by an adherence to objective and enforceable standards — while generating data for the mobilization of a quasi-professionalized subfield. Undeterred, DOSI proponents have attempted to articulate standardized tests to 'redress the potential dissonance between DOSI and expert evidence' within the international criminal justice courtroom.[115]

Gillett and Fan concede that 'key challenges arise from the nature of DOSI, including its straddling of expert and lay person domains, the group-based nature of the teams that assess it, and the potentially misleading aspects of DOSI and biases that may impact its interpretation'.[116] Given the established permeability and non-selective nature of the international court and the potential for furnishing the deferential trier of fact with non-expert testimony that is open to bias and misinterpretation, it is posited that the courts should instead seek assistance from acknowledged — potentially accredited — contributory experts, and should avail themselves of the didactic potentials that such experts may furnish, as regards controversial expert testimony. Indeed, the question of whether any particular dispute is a 'genuine'

[109] N. Sunde and V.N. Franqueira, 'Adding Transparency to Uncertainty: An Argument-Based Method for Evaluative Opinions', 47 *Forensic Science International: Digital Investigation* (2023) 1–10.

[110] D. Murray, Y. McDermott and K.A. Koenig, 'Mapping the Use of Open Source Research in UN Human Rights investigations', 14 *Journal of Human Rights Practice* (2022) 554–581; L. Benes, 'OSINT, New Technologies, Education: Expanding Opportunities and Threats. A New Paradigm', 6 *Journal of Strategic Security* (2013) 22–37.

[111] N. Sunde, 'Unpacking the Evidence Elasticity of Digital Traces', 8 *Cogent Social Sciences* (2022) 1–18.

[112] S. Dubberley, A. Koenig and D. Murray (eds), *Digital Witness: Using Open Source Information for Human Rights Investigation, Documentation, and Accountability* (Oxford University Press, 2020).

[113] *Ibid.*

[114] *Ibid.*

[115] M. Gillett, and W. Fan, 'Expert Evidence and Digital Open Source Information: Bringing Online Evidence to the Courtroom', 21 *JICJ* (2023) 661–693.

[116] *Ibid.*; S. Trevisan, 'Open-Source Information in Criminal Proceedings: Lessons from the International Criminal Court and the Berkeley Protocol', 4 *Giurisprudenza Penale* (2021) 1–17.

controversy is an issue which Imwinkelried suggests [lay triers of fact] may find difficult to assess. Taking into account the prior discussion regarding the commensurability of cognitive potential between judge and jury, and of the foundherentist democratization of epistemological approaches, it may be argued that Imwinkelried's proposition requires a degree of revision. However, regarding the ontological commitment of particular fields of enquiry, some element of explicit distinction is warranted and would allow for a comparatively rigorous means of resolving scientific and technical disputes. Indeed, it is posited that both judge and juror would benefit from developing a degree of onto-epistemic awareness and reflexivity capable of addressing the seeming disparities between proliferating technologies and fields of application. The discussion now moves to a consideration of how such an awareness might be developed.

Triers of fact should be encouraged to consider fundamental questions about the nature of inquiry and human knowledge, considering what is there to know, and how a trier of fact may safely warrant his or her factual claims. It should be the work of the court to ensure that triers of fact are able to demonstrate that they have adequately understood the gravamen and limitations of the expert testimony. Further, they possess a reflexive awareness of the ways in which the ontological assumptions founded upon and the warranted beliefs that can be generated are determinative of the dimensions of their object of inquiry and understand how these serve to condition the expert's approach to methodology and investigation. While it is not envisaged that triers of fact demonstrate a nuanced and agile understanding of heterogeneous ontological commitments and epistemic perspectives,[117] it would be sufficient that the trier of fact — by way of judicial training or courtroom instruction — is supported in strengthening his or her awareness of the basic reflexive skills necessary to recognize the broad ontological commitments of diverse agents and institutions, their affordances, and their limitations. In so doing, the trier of fact might utilize their critical common sense to recognize the outlooks of individual fields, understand how the professional's ontological and epistemic perspective shapes their understanding of the issue, and focus on attendant strengths and weaknesses. Thus, triers of fact might, through pedagogical engagement, more ably overcome disciplinary boundaries to achieve competent interdisciplinary understandings which readily resist the influences of quasi-scientific theorizing and junk science.[118]

5. CONCLUSIONS

This article has sought to unearth the conceptual undergirding of expert witness testimony in the international criminal arena and reveal its central features and unique dimensions. In doing so, the article highlights emergent tensions, and power asymmetries, which may be directly linked to the education and deference dichotomy, thus to particular conceptions of law's onto-epistemic status. Specifically, these are: the international criminal justice's lack of recognition of external scientific standards and systems of accreditation, which in other legal fields contribute to a division of epistemic labour: a conventional understanding of the epistemic role and capabilities of the judge and common law juror; and a marked tendency towards a coherentist approach to truth which contributes to a lack of epistemic and ontological reflexivity.

[117] These would include objectivism, constructionism, positivism, and realism (in both its naïve and critical forms), in addition to a working knowledge of the concepts of hermeneutics and the hermeneutic circle. See J. Scotland, 'Exploring the Philosophical Underpinnings of Research: Relating Ontology and Epistemology to the Methodology and Methods of the Scientific, Interpretive, and Critical research paradigms', 5 *English Language Teaching* (2012) 9–16.

[118] K.M. Richmond, 'Re-conceptualising Scientific Expertise in International Criminal Investigations: An STS Perspective.', in M. Sahinol and E.O. Yayalar (eds), *Science, Technology and Society for a Post-Truth Age: Comparative Dialogues on Reflexivity* (Vernon Press, 2023).

In conclusion, it may be posited that these features — an absence of standards, hermetic approaches to the distribution of the epistemic burden, alongside markedly distinct understandings of epistemic deference — are tractable only from the perspective of an emergent form of international procedure and adjudication. Thus, while procedural discussions in the international arena may focus on familiar themes of legal *episteme* — methodological rigour, the *Daubert* criteria, and the indicia of professional practice — such conceptions, and the evidentiary rules and procedures encapsulating them, may be substantially amplified or nullified by the tenor of the overarching adjudicatory system, be it adversarial common law, inquisitorial civilian, Romano-Canonical or a hybridized form as commonly encountered in the field of international criminal justice.

Damaška has offered compelling arguments to the effect that these overarching systems of legal procedure and adjudication are often more significant, and influential, than the specific content of individual evidentiary rules.[119] Damaška emphasizes that evidentiary rules cannot be fully understood in isolation; rather, they should be viewed within the broader context of the organizational structure of the court system, the roles of judges, lawyers and experts, and the overall philosophy of justice. The author further poses that this juristic philosophy may be structured by a particular orientation towards 'truth', which conditions the relationship between expert and trier of fact. Within the field of international criminal justice we are therefore justified in holding that the unique affordances of the expert relationship — its comparative openness, deference, and hermeticism — are structured not merely by the relevant rules of procedure but by the unique *telos* and *nomos* of international courts and tribunals.[120] In a nuanced historical analysis of jurisgenesis in the international arena, which echoes the seminal work of Cover,[121] Gissel[122] has further demonstrated the ways in which the progressive and cosmopolitan impulses of the ICC's architects led to a complete repudiation of the major institutions of statist conservatism. Furthermore, that this involved a rejection of the complex adjudicatory balances and procedural mechanisms which, in terms of the present study, have been shown to govern the generative dialectic between expert and trier of fact. Thus, in the face of an increasingly complex juridical sphere, populated by actors and institutions who have become increasingly reliant on scientific input,[123] the ICC is now confronted with the Herculean task of ruling on admissibility absent the necessary filtering criteria, dialectic impulse or epistemic support necessary to navigate a realm of technological intricacy and scientific accomplishment.

Therefore, in conclusion, this article has recommended that those professional adjudicators and academics charged with the maintenance and development of the procedural architecture of international criminal justice, temper their progressive impulses in favour of rational procedural development. Specifically, the courts should develop and retain the ability to engage in constructive enquiry and debate with expert witnesses. This requires judicial training, engagement with primers and guidelines, and a recognition of external standards-setting bodies and systems of accreditation. Such engagement will not only allow for coherent development but lend rigour to the treatment of expert testimony, while allowing the

[119] M.R. Damaška, 'Truth in Adjudication', 4 *Hastings Law Journal* (1998) 289–308.

[120] L.D. Corrias and G.M. Gordon, 'Judging in the Name of Humanity: International Criminal Tribunals and the Representation of a Global Public', 13 *JICJ* (2015) 97–112; M. Koskenniemi, 'Law, Teleology and International Relations: An Essay in Counter-Disciplinarity', 26 *International Relations* (2012) 3–34.

[121] R.M. Cover, 'Foreword: Nomos and Narrative', 97 *Harvard Law Review* (1983) 4; T. Fisher, 'Nomos Without Narrative', 9 *Theoretical Inquiries in Law* (2008) 473–502; L.C. Backer, 'Robert Cover and International Law: Narrative, Nudges, and Nomadic Nomos', 37 *Touro Law Review* (2021) 2315–2354.

[122] L.E. Gissel, 'Nomos and Narrative in International Criminal Justice: Creating the International Criminal Court', 20 *JICJ* (2022) 117–138.

[123] K.M. Richmond, 'AI, Machine Learning, and International Criminal Investigations: The Lessons From Forensic Science', 5 *Retskraft: Copenhagen Journal of Legal Studies* (2022) 31–58.

courts to filter and select relevant, robust and valid expert testimony. A major step would be the introduction of more nuanced admissibility criteria, ideally through the introduction of formal *Daubert* criteria to ICC procedure and jurisprudence. Indeed, the integrity and distinction which the international justice system craves may only be achieved through establishing a coherent unity of procedural normativity, scientific standardization and rational evaluation.

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