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YVONNE MCDERMOTT *

THE ICTR'S FACT-FINDING LEGACY: LESSONS FOR THE FUTURE OF PROOF IN INTERNATIONAL CRIMINAL TRIALS

ABSTRACT: This article analyses the fact-finding practice of the International Criminal Tribunal for Rwanda (ICTR) to underscore some of the broad challenges faced by the Tribunal and to determine what lessons can be learned from its legacy for the future of complex international criminal trials. It fills a gap in the existing literature by taking a broad assessment of the lessons that can be learned from the ICTR's fact-finding practice over the course of its lifetime, as the Tribunal adjudges upon its final case. It argues, *inter alia*, that it is difficult to derive consistent principles on the definition of 'beyond reasonable doubt', the requirement of corroboration, and the weight to be given to different types of witness testimony. It also introduces the fundamental concepts of Bayesian probability, and argues that, given that international criminal judgments are inherently probabilistic in nature, the use of Bayes' Theorem and Bayesian Networks might assist in the decision-making process, in enabling judges to question the strength of their own beliefs as to the truth of a matter. It concludes with some reflections on the function of international criminal tribunals in relation to the historical record of the conflicts upon which they adjudge.

KEYWORDS: Fact-finding, proof, evidence, appeals, ICTR

I INTRODUCTION

Judge Albie Sachs, formerly of the South African Constitutional Court, once noted that, 'Every judgment I write is a lie.'¹ He made this statement because of 'the discrepancy between the calm and apparently ordered way in which it [the judgment] read, and the intense and troubled jumping backwards and forwards that had actually taken place when it was being written.'² The internal uncertainty and introspection that Sachs described is something that every judge and decision-maker, in every jurisdiction, must face. For international criminal tribunals, not only are there unique challenges in the evidential context that inevitably give rise to even more doubts and uncertainties, but the stakes are raised by the expectations placed on their judgments. Tribunals are expected to set an accurate historical record of 'what really happened' in the conflicts and atrocities that they adjudge upon in order to prevent future denials.³ Additionally, they are expected to play a role in restoring peace in affected

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¹ A. Sachs, *The Strange Alchemy of Life and Law* (Oxford: OUP, 2009), 7.

² *Id.*

³ See, *inter alia*, Address by Judge Dennis Byron, President of the ICTR before the United Nations General Assembly (13 October 2008) ('Among the most basic and most important of the Tribunal's

regions, a peace that will inevitably be jeopardised by mistakes. Further, the consequences of their decisions for the right to liberty of individual defendants are greater than in the majority of domestic criminal trials, insofar as those who are convicted are likely to spend their sentences far from their homes and families.⁴

This article examines the fact-finding practice of the International Criminal Tribunal for Rwanda (ICTR) to underscore some of the broad challenges faced by the Tribunal and to determine what lessons can be learned from its legacy for the future of complex international criminal trials. The ICTR's fact-finding practice has not been without criticism to date. In this symposium issue alone, authors note 'serious inconsistencies' in witnesses' accounts;⁵ suggest that the ICTR has, on occasion, failed to fully highlight the bases for inferential judgments;⁶ and accuse one Trial Chamber of basing its judgment on witnesses who were either not credible or who testified to facts that fell outside the indictment.⁷ This symposium issue is not unique; some of these criticisms have arisen, and been discussed at length, elsewhere.⁸ By contrast, this piece takes a broader, more holistic, view of the ICTR's achievements and the challenges it faced in fact-finding, and attempts to extract some principles from its practice on such issues as weighing evidence, drawing inferences, and defining the parameters of the standard of proof beyond reasonable doubt. Instead of focussing on one judgment, or on a small sample of judgments, the piece draws on Trial and Appeal judgments from every contested trial (that is, those trials where a plea agreement did not form the basis of the judgment) from across the ICTR's lifetime.

This analysis is timely, because, at the time of writing, the ICTR had transferred all but its final appeal judgment to the residual Mechanism for the International Criminal Tribunals (MICT). The Tribunal finished hearing appeal submissions in that final case, involving six accused, in April 2015.⁹ This advanced stage in the Tribunal's lifetime presents a good opportunity to undertake a retrospective analysis of its legacy in the realm of fact-finding, and to consider what lessons could be learned for other international criminal tribunals. Part II provides a general introduction to the fact-finding landscape at the ICTR, including the. Parts III, IV and V examine a number of themes, namely: whether principles of evidence can be derived from judgments; the approaches taken by Trial Chambers to the assessment of evidence, and some of the

achievements has been the accumulation of an indisputable historical record'); R. A. Wilson, *Writing History in International Criminal Trials* (Cambridge: CUP, 2011).

⁴ ICTR convicts have served their sentences in Benin, Mali, Italy and Sweden.

⁵ N. Combs, 'A New Look at Fact-finding at the ICTR: Advances in Judicial Acknowledgement', in this volume.

⁶ O. Windridge, 'Assessing Circumstantial Evidence and Inference at the ICTR', in *ibid*.

⁷ T. Anderson and W. Twining, 'Evidential Reasoning in the International Criminal Tribunal for Rwanda: A Case Study of Tharcisse Muvunyi', in *ibid*.

⁸ N. Combs, *Fact-Finding without Facts: The Uncertain Evidentiary Foundations of International Criminal Convictions* (Cambridge: CUP, 2010); B. Lyons, 'Enough is Enough: the Illegitimacy of International Criminal Convictions' (2011) 13 *Journal of Genocide Research* 287.

⁹ *Prosecutor v. Nyiramasuhuko et al.*, (Transcript) ICTR-98-42-A (22 April 2015); the Trial Judgment in this case was issued in *Prosecutor v. Nyiramasuhuko et al.*, (Judgment and Sentence) ICTR-98-42-A (24 June 2011).

challenges that the Tribunal has faced in its fact-finding practice. Part VI concludes with some lessons that can be learned from the ICTR's practice.

II FACT-FINDING AT THE ICTR: THE STANDARD OF PROOF AND THE EVIDENTIAL LANDSCAPE

It is apposite to begin our discussion with a summary of relevant standards and concepts. As is well known, the standard of proof for judgments in the ICTR (and other international criminal tribunals) is that of 'beyond reasonable doubt'.¹⁰ The Appeals Chamber attempted to crystallize the meaning of this standard in *Rutaganda*:

The reasonable doubt standard in criminal law cannot consist in imaginary or frivolous doubt based on empathy or prejudice. It must be based on logic and common sense, and have a rational link to the evidence, lack of evidence or inconsistencies in the evidence.¹¹

Aside from this *dictum*, the ICTR has tended not to go into any further detail on the precise meaning of a 'reasonable doubt', and that is perhaps wise, given its difficulty to pin down with a definition and the confusion it can sometimes caused, as illustrated in domestic contexts.¹² Other international criminal tribunals have, however, provided some further interpretations; for the United States Military Tribunal in *Pohl*, it equated to 'moral certainty',¹³ while the International Criminal Tribunal for the former Yugoslavia (ICTY) in *Delalić* drew on jurisprudence from the common law in its elucidation of the standard, noting Lord Denning's explanation that:

It need not reach certainty but it must carry a high degree of probability. Proof beyond a reasonable doubt does not mean proof beyond the shadow of a doubt. The law would fail to protect the community if it admitted fanciful possibilities to deflect the course of justice. If the evidence is so strong against a man as to leave only a remote possibility in his favour, which can be dismissed with the sentence, 'of course it is possible, but not in the least probable', the case is proved beyond reasonable doubt, but nothing short of that will suffice.¹⁴

In *Ngirabatware*, the Appeals Chamber of the MICT confirmed an approach taken by the ICTY that may be seen as 'the exclusion of every reasonable alternative explanation [other than that of guilt]'.¹⁵ Under this test, it does not mean that no doubt

¹⁰ Rule 87, ICTR RPE.

¹¹ *Prosecutor v. Rutaganda*, (Judgment) ICTR-96-3-A (26 May 2003), para. 488.

¹² In England and Wales, for example, judges no longer use the direction "You must be satisfied of guilt beyond all reasonable doubt." Instead, they direct the jury that 'before they can return a verdict of guilty, they must be sure that the defendant is guilty': *R v. Majid* [2009] EWCA Crim 256, para. 11.

¹³ *United States v. Pohl et al.*, (1948) 5 TWC 1, 965 (United States Military Tribunal). The concept of 'moral certainty' has some pedigree in the common law: B.J. Shapiro, "'To a Moral Certainty': Theories of Knowledge and Anglo-American Juries 1600-1850" (1986) 38 *Hastings Law Journal* 153. The notion of 'certainty' occasionally arises with regard to individual facts before the ICTR: see, e.g. *Kalimanzira v. Prosecutor*, (Judgment) ICTR-05-88-A (20 October 2010), para. 77 ('it is impossible to determine with any reasonable certainty whether any killings in fact occurred following the meeting and, if so, the degree to which they were related to the ceremony') and *Prosecutor v. Bagilishema*, (Judgment) ICTR-95-1A-T (7 June 2001), para. 1014.

¹⁴ *Prosecutor v. Delalić et al.*, (Judgment) IT-96-21-T (16 November 1998), para. 600, citing *Miller v. Minister of Pensions* [1947] 1 All ER 372, 373-4.

¹⁵ *Ngirabatware v. Prosecutor*, (Judgment) MICT-12-29-A (18 December 2014), para. 20, citing *Prosecutor v. Mrkšić and Šljivančanin*, (Judgment) IT-95-13/1-A (5 May 2009), para. 220. For an extensive discussion of the 'alternative hypothesis' approach, see M. Klamburg, 'The Alternative Hypothesis Approach, Robustness and International Criminal Justice: A Plea for a "Combined Approach" to Evaluation of Evidence' (2015) 13 *Journal of International Criminal Justice* 535; S. De

exists as to the guilt of the accused, but when a reading of the evidence suggests a rational possibility of innocence, he or she must be acquitted.¹⁶ Before the International Criminal Court (ICC), Judge Van den Wyngaert clearly followed this approach when she stated that it was her ‘firm belief that another reasonable reading of the evidence is possible in this case.’¹⁷

Despite these attempts to clarify the extent of the standard of proof, it remains controversial in international criminal trials, as seen by recent practice before the ICC. In *Ngudjolo*, the Prosecutor accused the Trial Chamber of basing its acquittal on an alternative reading of the evidence that was not based on ‘evidence, logic, reason or common sense.’¹⁸ The Appeals Chamber disagreed and upheld the acquittal.¹⁹ It should be noted that the Trial Chamber held that it could not entirely rule out the Prosecutor’s hypothesis, but nevertheless, it was unable to reach a conclusion of guilt beyond reasonable doubt.²⁰

We can potentially extrapolate two steps in meeting the standard of proof beyond reasonable doubt from the above discussion. First, is there a reasonable alternative hypothesis to the hypothesis presented by the prosecution, or any doubt in the mind of the judge on the possible guilt of the accused? Second, what is the basis for that doubt or alternative explanation? If it is based on the evidence, a lack of evidence, or inconsistencies in the evidential record, then the accused must be acquitted. In other words, neither positive evidence that contradicts the Prosecutor’s story nor an alternative reading of the evidence that is more likely than the prosecutorial hypothesis is required; the beyond reasonable doubt standard will not be met where the Trial Chamber feels that the evidence cannot fully sustain a conviction, giving rise to doubt, or that an alternative reasonable reading of the evidence is possible. Where the Chamber is not satisfied beyond reasonable doubt of the accused’s guilt, it does not need to be convinced of his or her innocence in order to acquit.²¹

Where an appeal is made on an issue of fact, the standard is whether the Trial Chamber’s conclusion on that issue is one that ‘no reasonable trier of fact’ could have reached,²² and whether that error of fact occasioned a miscarriage of justice.²³ Given

Smet, ‘The International Criminal Standard of Proof at the International Criminal Court – Beyond Reasonable Doubt or Beyond Reason?’ in C. Stahn (ed.), *The Law and Practice of the International Criminal Court* (Oxford: OUP, 2015), 861, 880; R. J. Allen, ‘The Nature of Juridical Proof’ (1991) 13 *Cardozo Law Review* 373, 413

¹⁶ *Mrkšić and Šljivančanin* Appeal Judgment, *ibid.*, para. 220. This notion is also reflected in the writings of J.H. Wigmore, *The Principles of Judicial Proof* (2nd edn, Chicago: Little, Brown & Co., 1931) 28, who stated that where ‘a single other inference remains open, complete proof fails: the desired conclusion is merely the more probable, or a probable, inference’.

¹⁷ *Situation in the DRC: Prosecutor v. Katanga*, (Judgment) ICC-01/04-01/07-3436 (7 March 2014), Minority Opinion of Judge Christine Van den Wyngaert, para. 134.

¹⁸ *Situation in the DRC: Prosecutor v. Ngudjolo Chui* (Judgment on the Prosecutor’s appeal against the decision of Trial Chamber II entitled “Judgment pursuant to article 74 of the Statute”) ICC-01/04-02/12-271 (27 February 2015), para. 42.

¹⁹ By majority, Judges Tarfusser and Trendafilova dissenting. Their dissent discussed in detail elsewhere: Y. McDermott, ‘Inferential Reasoning and Proof in International Criminal Trials’ (2015) 13 *Journal of International Criminal Justice* 507.

²⁰ *Situation in the DRC: Prosecutor v. Ngudjolo Chui*, (Judgment Pursuant to Article 74 of the Statute) ICC-01/04-02/12-3 (12 April 2013), para. 456.

²¹ This point is made, in the context of appeals on questions of fact, in *Prosecutor v. Akayesu*, (Judgment) ICTR-96-4-A (1 June 2001), para. 178.

²² Amongst many others, see: *Zigiranyirazo v. Prosecutor*, (Judgment) ICTR-01-73-A (16 November 2009), para. 10. See also *Karera v. Prosecutor*, (Judgment) ICTR-01-74-A (2 February 2009), para. 9; *Kamuhanda v. Prosecutor*, (Judgment) ICTR-99-54A-A (19 September 2005), para. 7; *Prosecutor v.*

this standard of proof, an appellant cannot merely restate unsuccessful arguments from trial again at appeal. In assessing whether ‘no reasonable trier of fact’ could have reached the same conclusions as the Trial Chamber, a large degree of deference is shown to on its factual findings, and this is evidenced by a number of Appeals Chamber judgments. In *Hategikimana*, for example, the Appeals Chamber acknowledged that the Trial Chamber had not discussed his knowledge of his subordinates’ criminal conduct, but nevertheless concluded that no error was ‘clearly apparent’ from that fact; the Appeals Chamber found that this aspect could be implied from some of the Trial Chamber’s other factual findings.²⁴ As regards the ‘miscarriage of justice’ aspect for alleging errors of fact, the accused must merely show that the factual errors give rise to reasonable doubt, whereas the Prosecutor has to prove that ‘all reasonable doubt of the accused’s guilt has been eliminated’.²⁵

As Anderson and Twining have noted, cases tend to turn on just one ‘jugular’ – a key fact that is fundamental to the ultimate conclusion of the Trial Chamber,²⁶ and that is certainly no different before the ICTR. Examples of such jugular facts include: whether the accused’s alibi defence is reasonably possibly true,²⁷ or whether those who committed the criminal acts were the accused’s subordinates.²⁸

A number of factors differentiate the evidential landscape at the ICTR from other international criminal tribunals. For a start, alibi defences appear to be much more common before the ICTR. Alibis were introduced in over half of all ICTR contested cases; by contrast, fewer than ten defendants (out of 110) tried by the ICTY raised alibi defences.²⁹

The second notable feature of the ICTR compared to its sister tribunal is the preponderance of oral testimony, with less reliance on documentary evidence and written witness statements *in lieu* of oral testimony.³⁰ This means that a great deal of the Trial Chamber’s effort is expended on assessing the credibility of witnesses for both parties. In *Akayesu*, the Trial Chamber set down the conditions for challenging the credibility of witnesses.³¹ First, such challenges must be particularized to the individual witness – it is not sufficient to point to the fact that other witnesses for the party have been found to be lying.³² Second, the foundations for the challenge to the witness’s credibility must be put to the witness during cross-examination, and the witness must be given the opportunity to respond to that allegation; the Trial Chamber described this as ‘simply a matter of justice and fairness to victims and witnesses, principles recognised in all legal systems throughout the world.’³³

Kajelijeli, (Judgment) ICTR-98-44A (23 May 2005), para. 5; *Prosecutor v. Ntakirutimana*, (Judgment) ICTR-96-17-A (13 December 2004), para. 12.

²³ Article 24(1)(b), ICTR Statute.

²⁴ *Hategikimana v. Prosecutor*, (Judgment) ICTR-00-55B-A (8 May 2012), para. 73.

²⁵ *Prosecutor v. Bagilishema*, (Judgment) ICTR-95-1A-A (3 July 2002), para. 14.

²⁶ Anderson and Twining (n 7).

²⁷ *Prosecutor v. Musema*, (Judgment and Sentence) ICTR-96-13-A (27 January 2000), para. 108;

Prosecutor v. Nahimana et al. (Judgment) ICTR-99- 52-T (3 December 2003), para. 99

²⁸ *Prosecutor v. Bagosora et al.* (Judgment and Sentence) ICTR-98-41-T (18 December 2008).

²⁹ This figure of 110 (out of a total of 161 indicted persons before the ICTY) does not include those whose cases were transferred to national jurisdictions, had their indictments withdrawn, or died before the conclusion of proceedings against them.

³⁰ Y. McDermott, ‘The Admissibility and Weight of Written Witness Statements’ (2013) 27 *Leiden Journal of International Law* 971.

³¹ *Prosecutor v. Akayesu*, (Judgment) ICTR-96-4-T (2 September 1998), para. 46

³² *Id.*

³³ *Id.*

The third feature that distinguishes ICTR practice from that of its contemporaries is that alleged errors of fact appear to be much more common in appeal proceedings at the ICTR than before other tribunals, where the majority of appeals centre around errors of law. Indeed, before the ICTY, it is not uncommon for an alleged error of fact to be reframed as an error of law, perhaps owing to the perception that it is easier to successfully allege an error of law on appeal than it is to succeed on an alleged error of fact. For example, in *Strugar*, the Prosecutor's clear objection was that the Trial Chamber should have found that the accused 'knew or had reason to know' that his subordinates were about to commit an offence prior to the attack in question.³⁴ This would appear, on its face, to be a clear error of fact, but the appeal was framed in such a way that the prosecution argued that the Trial Chamber misapprehended the *mens rea* element under Article 7(3), an error of law.³⁵ The prosecution was successful in arguing this ground of appeal.³⁶ By contrast, 'straightforward' appeals on the basis of errors of fact remain common before the ICTR,³⁷ albeit also with infrequent success.³⁸ It should be recalled that the standard of appeal is, by its very nature, higher for alleged errors of appeal, given that the Appeals Chamber's function is not to determine whether the Trial Chamber's findings are 'correct' (this is the standard for alleged errors of law),³⁹ but rather whether they are 'reasonable'.⁴⁰ To this end, deference tends to be shown to the Trial Chamber's factual findings.⁴¹ Having established the general evidential landscape before the ICTR, and the principles that apply, we will now turn to the question of whether principles of proof can be extrapolated from the ICTR's practice to date.

III DERIVING PRINCIPLES OF PROOF FROM ICTR JUDGMENTS

Given that the ICTR has been in operation for over 15 years, one might have thought that relatively clear principles might have emerged on questions of proof, such as the circumstances in which corroboration is required; the weight to be given to different types of evidence, and whether oral testimony is to be preferred to written witness statements, and other such considerations in decision-making. Yet, no clear consistent practice on these issues has emerged within the ICTR, let alone across it and other international criminal tribunals. Indeed, as part of the *International Criminal Procedure: Rules and Principles* volume, four authors attempted to extract those principles (taken to mean the essential pillars to any international criminal justice

³⁴ *Prosecutor v. Strugar* (Judgment) IT-01-42-A (17 July 2008), para. 284.

³⁵ *Ibid.*, paras. 285-290.

³⁶ *Ibid.*, para. 310.

³⁷ To give an example, see the recent Appeals Chamber judgment in *Karemera and Ngirumpatse v. Prosecutor*, (Judgment) ICTR-98-44-A (29 September 2014)

³⁸ *Ibid.*: the appeals on alleged errors of fact were rejected in paras. 193; 204; 206; 207; 216; 229; 243; 258 (despite the fact that the Trial Chamber failed to cite any evidence to support its conclusion); 263; 281; 333; 439; 464; 465; 499; 508-510; 559; 578; and 579. They were successful at paras. 285-286 and 292-293, but these findings had no bearing on the accused's conviction.

³⁹ *Prosecutor v. Krnojelac*, (Judgment) IT-97-25-A (17 September 2003), para. 10.

⁴⁰ *Karemera and Ngirumpatse v. Prosecutor*, (Judgment) ICTR-98-44-A (29 September 2014), para. 52: 'two reasonable triers of facts may reach different but equally reasonable conclusions'; *Prosecutor v. Tadić*, (Judgment) IT-94-1-A (15 July 1999), Separate Opinion of Judge Shahabuddeen, para. 30 ('Not every reasonable exercise of judgment is right, and not every mistaken exercise of judgment is unreasonable.')

⁴¹ See e.g. *Hategekimana* Appeal Judgment (n 24), where all alleged errors of fact were dismissed, even in light of evidential insufficiencies or gaps in the Trial Chamber's reasoning.

system)⁴² and rules ('the prevalent procedural solutions within the international criminal justice system')⁴³ that could be extrapolated on the burden and standard of proof before international criminal tribunals. They concluded that no rules could be derived from their law and practice, and the only principles identified were: that the accused is entitled to the presumption of innocence; that the burden of proof rests with the prosecutor; that guilt must be established beyond reasonable doubt, and the *in dubio pro reo* (if in doubt, the interpretation that favours the accused must be taken) principle.⁴⁴ This section will attempt to decipher what the ICTR's general position was in relation to issues of fact-finding and proof.

As regards the types of evidence that can be used in the ICTR's deliberations, it will be recalled that Rule 89(C) of the Rules of Procedure and Evidence incorporates something of a 'free proof' approach, insofar as it allows a Chamber to admit any relevant evidence that it deems to have probative value.⁴⁵ Under Rule 90(A), witnesses 'shall, in principle, be heard directly by the Chambers unless a Chamber has ordered that the witness be heard by means of a deposition' under Rule 71. Rule 92bis allows for witness statements to be admitted *in lieu* of oral testimony, where they do not go towards proving the acts and conduct of the accused.

The preference for orality was confirmed in *Akayesu*.⁴⁶ In *Bagilishema*, the accused was acquitted when the Trial Chamber could not accept the testimony of prosecution witnesses, in light of serious inconsistencies between their in-court testimony and prior statements.⁴⁷ On appeal, the Prosecutor alleged that the Trial Chamber had erred by placing more weight on written statements than on in-court live testimony.⁴⁸ The Appeals Chamber upheld the Trial Chamber's approach, which had acknowledged that some inconsistencies may be explained by factors such as 'the lapse of time, the language used, the questions put to the witness and the accuracy of interpretation and transcription, and the impact of trauma on the witnesses', but that where such inconsistencies could not be explained, this might call the reliability of the witnesses' accounts into question.⁴⁹

There has been some debate as to the relevance of reliability in admissibility decisions. The Trial Chamber in *Musema* found that 'reliability is the invisible golden thread which runs through all the components of admissibility', and that reliability forms the basis of decisions on the relevance and probative value of the evidence, under Rule 89(C).⁵⁰ Judge Shahabuddeen disagreed, finding that reliability comes after the evidence (presuming it is relevant and with probative value) has been admitted – if it is later found not to be credible, it will simply have no weight and be eliminated from the Chamber's deliberations.⁵¹

⁴² G. Sluiter *et al.*, 'Introduction', in G. Sluiter *et al.* (eds.), *International Criminal Procedure: Rules and Principles* (Oxford: OUP, 2013), 11.

⁴³ *Id.*

⁴⁴ F. Gaynor *et al.*, 'Law of Evidence', in G. Sluiter *et al.* (eds.), *International Criminal Procedure: Rules and Principles* (n 42), 1148.

⁴⁵ Rule 89(C), ICTR RPE.

⁴⁶ *Akayesu* Trial Judgment (n 31), para. 137; *Akayesu* Appeal Judgment (n 21), paras. 131-137.

⁴⁷ *Bagilishema* Trial Judgment (n 13).

⁴⁸ *Bagilishema* Appeal Judgment (n 25).

⁴⁹ *Bagilishema* Trial Judgment (n 13), para. 24; *Bagilishema* Appeal Judgment (n 25), para. 107.

⁵⁰ *Musema* Judgment (n 27), paras. 37-38.

⁵¹ *Musema* Judgment (n 27), Declaration of Judge Shahabuddeen, para. 9.

There is no rule, as such, on corroboration before the ICTR – the *unus testis, nullus testis* rule does not apply,⁵² and it is for the Trial Chamber to assess the credibility of evidence or testimony of each piece of evidence, on the basis of the evidential record as a whole.⁵³ As the Trial Chamber in *Musema* noted:

The Chamber may freely assess the relevance and credibility of all evidence presented to it. The Chamber notes that this freedom to assess evidence extends even to those testimonies which *are* corroborated: the corroboration of testimonies, even by many witnesses, does not establish absolutely the credibility of those testimonies.⁵⁴

That being said, a lack of corroboration can clearly be crucial to the assessment of evidence. In *Bizimungu et al.*, for example, the Trial Chamber held it could conclude that the accused Mugiraneza was present at a rally, solely on the basis of uncorroborated prosecution testimony.⁵⁵ In *Kayishema*, the Trial Chamber emphasised the importance of corroboration in potentially removing doubts about a testimony.⁵⁶ We might extract from this a principle from the ICTR's practice, namely that if one piece of evidence is entirely reliable, there is no need for corroboration (this is what Schum referred to as 'corroborative redundancy'), whereas where none of the sources can be said to be completely reliable, then there is a need for corroboration.⁵⁷

Equally, no clear rule on hearsay can be adduced, aside from the fact that the Trial Chamber can use such evidence in its final deliberations. Chambers have emphasised that hearsay evidence should be approached with caution.⁵⁸ However, it appears that hearsay evidence from expert witnesses will bear weight, as evidenced by the value attached to hearsay witnesses on historical facts.⁵⁹

IV APPROACHES TO THE ASSESSMENT OF EVIDENCE

We have discussed above the ICTR's approach to such issues as hearsay evidence, admissibility, corroboration and reliability. However, quite frequently we can observe that the narrative put forward by one of the parties is confirmed or dismissed on the grounds of what Bentham called 'infirmative suppositions' – these are elements that make an evidentiary fact either improbable or impossible.⁶⁰ With infirmative

⁵² *Akayesu* Trial Judgment (n 31), paras. 132-136; *Prosecutor v. Seromba*, (Judgment) ICTR-2001-66-A (12 March 2008), paras. 91-92.

⁵³ *Ntabakuze v. Prosecutor*, (Judgment) ICTR-98-41A-A (8 May 2012), para. 150 (finding that the Trial Chamber's 'holistic approach to the evidence' was not unreasonable.); see also *Prosecutor v. Kayishema and Ruzindana*, (Judgment (Reasons)) ICTR-95-1-A (1 June 2001), para. 165; *Prosecutor v. Furundžija*, (Judgment) IT-95-17/1-A (21 July 2000), para. 69; *Prosecutor v. Delalić et al.*, (Judgment) IT-96-21-A (20 February 2001), para. 481; *Bagilishema* Appeal Judgment (n 25), para. 88.

⁵⁴ *Musema* Judgment (n 27), para. 46.

⁵⁵ *Prosecutor v. Bizimungu et al.*, (Judgment) ICTR-99-50-T (30 September 2011), para. 229

⁵⁶ *Prosecutor v. Kayishema and Ruzindana*, (Judgment) ICTR-95-1-T (21 May 1999), para. 80.

⁵⁷ D. Schum, 'Evidence and Inferences about Past Events: An Overview of Six Case Studies', in W. Twining and I. Hampsher-Monk (eds), *Evidence and Inference in History and Law: Interdisciplinary Dialogues* (Evanston, IL: Northwestern University Press, 2003) 9, 25.

⁵⁸ *Akayesu* Trial Judgment (n 31), para. 136; *Bagosora* Trial Judgment (n 28), para. 25.

⁵⁹ See e.g. *Bagosora and Nsengiyumva v. Prosecutor*, (Judgment) ICTR-98-41-A (14 December 2011), paras. 220-228 (on historical expert witness Dr. Alison Desforges).

⁶⁰ J. Bentham, *Rationale of Judicial Evidence* (London: Hunt and Clarke, 1827), Vol. III, Chapter XV, 'Probative Force', 221. See further, G. Postema, 'Fact, fictions, and Law: Bentham and the Foundations of Evidence in W. Twining (ed.), *Facts in Law: Proceedings of the 1982 Conference of the Association for Legal and Social Philosophy* 37, 58-59.

suppositions, the past experience of the decision-maker comes into play in deciding whether the evidence makes sense in that light.⁶¹ An example of an infirmative supposition appears in *Bizimungu et al.*, where the Trial Chamber concluded that it was reasonable that the accused would go to the home of his in-laws, where his family were, 'rather than leaving his family and attending an evening meeting approximately 45 minutes away.'⁶² Equally, looking at a time when the accused had not yet assumed his formal duties, the Chamber felt it reasonable that he would have remained with his family at that time.⁶³ Similarly, in *Nzabonimana*, the Trial Chamber considered it 'unlikely that a group of Tutsis fleeing a violent attack at their place of refuge ... would choose to disguise themselves as Hutus and join a group of people gathered in a trading centre for a brief time before continuing on their journey.'⁶⁴ Yet, how can those of us fortunate enough to have never been in such a tragic situation possibly imagine what constitutes reasonable behaviour when fleeing a violent genocidal attack? A third example can be found in Judge Gunawardana's separate opinion in *Bagilishema*, where he suggested that it was unrealistic, as the prosecution asserted, to expect that in the course of a single short and impromptu meeting, the accused 'changed from having a *bone fide* intent to protect the Tutsis, to a genocidal intent to exterminate the Tutsi population on ethnic grounds'.⁶⁵ These generalisations are not always expressly articulated (and, as Paul Roberts has insightfully pointed out on the issue of 'Mr. Seferovic's pigeons' in *Tadić*,⁶⁶ not always strictly necessary, on the basis of the evidence), but are crucial for credibility assessments and proof of facts in international criminal trials.

A key issue in assessing the strength of an appeal on alleged errors of fact is the general position taken by Trial Chambers, which states at the outset that even where particular pieces of evidence, problems, or inconsistencies with the evidence, were not expressly referred to in the judgment, that does not mean that they were not considered.⁶⁷ As the *Musema* Appeals Judgment highlights, this makes it difficult for the appellant, who must not only prove that the finding made by the Trial Chamber is incorrect; in order to show that the finding is one that no reasonable trier of fact could have reached, they must also show that 'the Trial Chamber indeed disregarded some item of evidence',⁶⁸ and this cannot be proven by the bare fact that the Chamber did not refer to that piece of evidence.

As Oliver Windridge⁶⁹ has noted, the standard of assessment for circumstantial evidence is that, if the accused is to be convicted, his or her guilt must be the 'only reasonable inference' that can be drawn from that evidence.⁷⁰ This raises the question of whether the accused needs to provide an alternative, reasonable, inference to counter that presented by the prosecution in its case. Of course, in light of the

⁶¹ J. Jackson, 'Questions of Fact and Questions of Law' in W. Twining (ed.), *Facts in Law: Proceedings of the 1982 Conference of the Association for Legal and Social Philosophy* 85, 95.

⁶² *Bizimungu et al.* Trial Judgment (n 55), para. 507.

⁶³ *Ibid.*, para. 1762.

⁶⁴ *Prosecutor v. Nzabonimana*, (Judgment and Sentence) ICTR-98-44D-T (31 May 2012), para. 718.

⁶⁵ *Prosecutor v. Bagilishema*, (Judgment) ICTR-95-1A, Separate Opinion of Judge Asoka de Z. Gunawardana (7 June 2001), paras. 34-35.

⁶⁶ P. Roberts, 'Why International Criminal Evidence?' in P. Roberts and M. Redmayne (eds.) *Innovations in Evidence and Proof* (Oxford: Hart, 2007) 347, 370-378.

⁶⁷ *Musema v. Prosecutor*, (Judgment) ICTR-96-13-A (16 November 2001), para. 20: ('It does not necessarily follow that because a Trial Chamber did not refer to any particular evidence or testimony in its reasoning, it disregarded it'.)

⁶⁸ *Ibid.*, para. 21.

⁶⁹ Windridge (n 6).

⁷⁰ See, e.g., *Bagosora Appeals Judgment* (n 59), para. 562.

presumption of innocence and the prosecutorial burden of proof, we must answer this question in the negative.⁷¹ It is not necessary to present a specific alternative reasonable inference that can be drawn from the evidence in order to show that guilt was not the only reasonable inference. In *Bagosora and Nsengiyumva*, for example, Nsengiyumva reminded the Appeals Chamber that there was no direct evidence showing that he had ordered the killings that took place in Gisenyi town on 7 April, and submitted that the evidence was ‘open to multiple reasonable inferences consistent with his innocence.’⁷² The Trial Chamber had held that the only reasonable inference was that, as the highest military authority in the prefecture, he must have ordered the killings.⁷³ The Appeals Chamber upheld Nsengiyumva’s appeal, finding that it was not the only reasonable inference that could be drawn from the evidence. Equally, although the standard of proof clearly places no positive burden on the accused, even when he or she invokes a defence of alibi (all that is required is for that alibi evidence to create a reasonable doubt in the mind of the judges), in practice, it would seem from the language of some judgments that the defence case is strengthened where it can persuade the court of an alternative narrative. Take this example from *Kanyarukiga*; the Trial Chamber noted that it ‘[did] not believe the accounts of any of the Defence witnesses ... and believes their accounts ... support the Chamber’s view that the alibi is a fabricated story, contrived in favour of the accused.’⁷⁴

V CHALLENGES TO FACT-FINDING BEFORE THE ICTR

The first clear challenge to fact-finding before the ICTR is the volume of the evidential record. In order to establish the truth of a matter, the Chamber needs *all* of the relevant evidence, and if it cannot access all of the evidence in this way, its factual findings will be defeasible. Given the constraints of time, resources, and witness co-operation before the ICTR, it is simply impossible for the Tribunal (and other international criminal tribunals in the future) to access all of the relevant evidence and, in turn, achieve full certainty over its conclusions. This is not unique to ICTR proceedings; Anderson, Schum and Twining have noted five key challenges in achieving certainty in legal reasoning in any legal context, namely that evidence is always: incomplete, inconclusive, ambiguous (meaning that we cannot decide what the information conveys – an example before the ICTR might include a certain term used by an accused, where it will fall to the Chamber to determine whether that phrase evidences genocidal intent), dissonant (meaning that some evidence will directly contradict other evidence on the record) and lacking in perfect credibility.⁷⁵ This means that reasoning before international criminal trials is always necessarily probabilistic, and that perhaps judgments are not necessarily the best source for an ‘historical record’ on what happened in the conflict, a point I shall return to in a moment.

Given that fact-finding before international criminal tribunals is always going to be an exercise in probability, judges might do well to consider some basic principles of

⁷¹ De Smet (n 15).

⁷² *Bagosora Appeals Judgment* (n 59), paras. 275-279.

⁷³ *Bagosora Trial Judgment* (n 28), para. 338; *Bagosora Appeals Judgment* (n 59), para. 278.

⁷⁴ *Prosecutor v. Kanyarukiga*, (Judgment and Sentence) ICTR-2002-78-T (1 November 2010), para. 129.

⁷⁵ T. Anderson, D. Schum and W. Twining, *Analysis of Evidence* (2nd edn., Cambridge: CUP, 2005), 246.

probability in their deliberations. The first decision that judges will have to decide is what percentage of probability we put on the ‘beyond reasonable doubt’ standard. If this is set at 90%,⁷⁶ it is accepted that one in ten of those found guilty are actually innocent. If the probability ratio is set at 95%,⁷⁷ we accept that one in 20 innocents will be convicted. The level of probability required to satisfy the ‘beyond reasonable doubt’ standard is a legal decision, to be made by judges, but they should be aware of the consequent risk of wrongful conviction when setting that standard. By putting a mathematical figure on the level of certainty required, this exercise forces the decision-maker to interrogate his or her own intuition.⁷⁸ From there, the decision maker can potentially make use of such probability tools as Bayes’ Theorem, which is a mathematical formula that can be used to update the probability of a hypothesis in the light of new evidence.⁷⁹ Bayes’ Theorem gives the correct logical method measuring how a subjective belief of probability should change in light of evidence presented.⁸⁰ In order to apply Bayes’ Theorem, one begins with the prior odds (the likelihood of a hypothesis – in the case of a criminal trial, guilt or innocence) – it will be for the decision-maker to attach subjective probabilities to the likelihood of innocence or guilt at the outset. The prior odds of guilt should be set to sufficiently take into account the presumption of innocence; Friedman suggests that it should be set at 1:X, ‘where X is a large number, perhaps on the order of the entire population of people who might have committed the crime’.⁸¹ Bayes’ Theorem combines these prior odds with the likelihood ratio for the evidence (that is, ‘the likelihood of the evidence if the prosecution’s proposition is true’ and ‘the likelihood of the evidence if the defence proposition is true’)⁸² to calculate the ‘posterior odds’, or the likelihood of innocence/guilt, in light of the evidence. The process can be repeated to take into account each subsequent piece of evidence and adjust the posterior odds accordingly. By today, the inevitable complexity of Bayesian calculations is alleviated by the existence of computer software (including some excellent free programmes, like GeNIe)⁸³ to create so-called ‘Bayes nets’, or graphical representations of the probabilistic relationships between variables and their relationships.

The basic version of Bayesian probability outlined above, especially the subjective setting of prior odds may seem rather unscientific to the outsider, but it is, after all, little more than a quantification of the decision-maker’s mind. A judge might reasonably remark to a clerk or colleague on the bench that she was confident of the accused’s innocence before a certain piece of evidence was introduced, but having seen that piece of evidence, she was now more convinced that he might reasonably be guilty. Bayes’ Theorem challenges the judge to quantify her intensity of belief at both stages, before and after the evidence is taken into account.

⁷⁶ P. Roberts and A. Zuckerman, *Criminal Evidence* (2nd edn, Oxford: Oxford University Press, 2010), 157.

⁷⁷ Combs (n 8), 346 puts the figure at between 90 and 95%; See also M. Klamberg, *Evidence in International Criminal Trials* (Leiden: Brill, 2013) 131.

⁷⁸ Klamberg, *ibid*, 159.

⁷⁹ C. Aitken, P. Roberts and G. Jackson, *Communicating and Interpreting Statistical Evidence in the Administration of Criminal Justice, Practitioner Guide No. 1: Fundamentals of Probability and Statistical Evidence in Criminal Proceedings* (Royal Statistical Society, 2010), available online at <http://www.maths.ed.ac.uk/~cgga/Guide-1-WEB.pdf> (last accessed 21 August 2015), 43.

⁸⁰ B. Robertson and G.A. Vignaux, *Interpreting Evidence* (London: Wiley, 1995), 88.

⁸¹ R. Friedman, ‘A Presumption of Innocence, Not of Even Odds’ (2000) 52 *Stanford Law Review* 873, 885.

⁸² Aitken *et al.* (n 79), 36.

⁸³ GeNIe & SMILE, developed by the University of Pittsburgh, available online at <https://dslpitt.org/genie/> (last accessed 21 August 2015).

This brings us back to the value of having as complete an evidential record as possible. In Keynesian terms, the volume of evidence ensures the ‘weight’ of an argument and the introduction of new evidence ‘will sometimes decrease the probability of an argument, but it will always increase its weight’.⁸⁴ The use of the term ‘weight’ in this context is confusing, because in international criminal law, ‘weight’ refers to a qualitative assessment on the value to be attached to the evidence. Therefore, an alternative term, such as ‘robustness’⁸⁵ or ‘quantum’⁸⁶ of evidence is to be preferred. Where, for example, four defence witnesses testify to a particular matter, the probative value of their combined evidence may be the same as that for two witnesses, but the Keynesian weight (or robustness or quantum of evidence) for that argument will be increased.

What, then, is the value to be placed on the number of witnesses or the volume of evidence? The straightforward answer is none whatsoever – the testimony of one saint would be worth more than that of fifty sinners, and we should encourage against any ‘head-counting’ approach to proof.⁸⁷ Nevertheless, in certain cases, the robustness of the defence case highlighted the weaknesses in the prosecution’s evidence, and apparently created doubt in the minds of the judges. In *Bizimungu et al.*, for example, the prosecution presented just one hearsay witness to attest to the fact that the accused Bizimungu went to Zaire (as it then was) to purchase weapons; this evidence was refuted by the source of that hearsay, and seven defence witnesses testified to the contrary.⁸⁸ It is unsurprising that the Chamber could not accept the prosecution’s narrative in these circumstances.

Before turning to issues on the quality of evidence, it is worthwhile to briefly discuss the issues surrounding the expectation that the ICTR, and its contemporaries, will play a role in setting an accurate historical record. While this is a function frequently ascribed to the tribunals,⁸⁹ it is notable that only one judgment in the ICTR’s entire record actually mentions this apparent goal, and probably not in the broad context that one might expect. In *Kalimanzira*, the Trial Chamber noted that the prosecution and defence evidence, when taken together, presented a ‘broader historical record’ as to what happened on Kabuye Hill on 23 April 1994.⁹⁰ Aside from that, the President of the ICTR noted, in a speech made to commemorate the 20th anniversary of the 1994 genocide that the Tribunal had:

preserved for posterity a record of the atrocities committed, established beyond any doubt or possible denial – in judgment after judgment – that those atrocities constituted a genocide, and brought to justice many of those accused of planning and executing one of the most brutal and efficient killing campaigns the world has ever witnessed.⁹¹

⁸⁴ J.M. Keynes, *A Treatise on Probability* (London [etc.]: Macmillan and Co., 1763), 71.

⁸⁵ Klamberg (n 15).

⁸⁶ H.L. Ho, *A Philosophy of Evidence Law* (Oxford: OUP, 2008), 167.

⁸⁷ See also McDermott (n 19).

⁸⁸ *Bizimungu et al.* Trial Judgment (n 55), paras. 1009 and 1018. Other examples from that case of a similar pattern of defence witnesses far outnumbering and outweighing prosecution evidence can be found at paras. 656; 670 and 759-785.

⁸⁹ Wilson (n 3); M. Damaška, ‘What is the Point of International Criminal Justice?’ (2008) 83 *Chicago-Kent Law Review* 329, 331.

⁹⁰ *Prosecutor v. Kalimanzira*, (Judgment) ICTR-05-88-T (22 June 2009), para. 386.

⁹¹ Remarks by Judge Vagn Joensen, ICTR President, at the ICTR/MICT 20th Commemoration of the 1994 Genocide in Rwanda, 10 April 2014, available online at <http://www.unict.org/en/news/remarks-judge-vagn-joensen-ictr-president-ictrmict-20th-commemoration-1994-genocide-rwanda> (last accessed 21 August 2015).

We might ask whether this expectation that international criminal tribunals can and will set an accurate historical record asks too much of the ICTR and its contemporaries. Perhaps a distinction can be drawn between the ‘historical narrative’ that the ICTR has undoubtedly drawn by establishing that a genocide occurred in Rwanda, that this genocide was planned at the highest levels and implemented through, *inter alia*, a campaign of desensitization towards and dehumanization of the victims of that genocidal campaign. Aside from that broader historical narrative, however, it is unrealistic to expect the ICTR to set an historical *record* – that is, an irrefutable detailed account of what really happened. Take, for example, the findings in *Bagosora et al.* on the murder of several hundred Tutsis who had sought refuge at the Central African Adventist University in Mudende.⁹² The Trial Chamber was convinced of the Rwandan army’s involvement in this massacre.⁹³ On appeal, however, the Appeals Chamber noted that the witnesses had identified the accused’s subordinates from the military based on their uniforms, but that there were other groups who also wore similar uniforms, and thus the involvement of the ‘regular’ army, while likely, was not the only reasonable conclusion that could be drawn, and therefore could not form the basis of a conviction.⁹⁴ While this conclusion is no doubt in conformity with the ICTR’s relevant rules and standards of proof, it could not be said to have set an historical record, to the extent that the families of those victims cannot say that the ICTR irrefutably established who was responsible for their loss. This highlights the Tribunal’s inability to meet the expectation of setting an historical record – it not only has insufficient evidence to hand to draw a full historical record on exactly what happened; it is limited by the scope of its own mandate, which is solely concerned with establishing the guilt or innocence of individual defendants pursuant to the standard of proof beyond reasonable doubt, from doing so.

The quality of the evidence is also problematic before the ICTR. Problems that have arisen in practice include: allegations of witness interference;⁹⁵ witnesses’ uncertainty about the contents of their testimony;⁹⁶ difficulties with translation;⁹⁷ the inherent fallibility of eyewitness testimony, which the ICTR relies a great deal upon, and cultural barriers, including the inexperience of witnesses with maps, and different ways of expressing time, distance and locations.⁹⁸ One area of practice that has improved the ICTR’s ability to assess witnesses’ accounts has been the increased use of site visits. For example, in *Zigiranyirazo*, a site visit enabled the Chamber to assess

⁹² *Bagosora* Trial Judgment (n 28), paras. 1234-1253; *Bagosora* Appeals Judgment (n 59), paras. 349-362.

⁹³ *Bagosora* Trial Judgment (n 28), para. 1253.

⁹⁴ *Bagosora* Appeals Judgment (n 59), para. 377.

⁹⁵ E.g. *Nahimana et al. v. Prosecutor*, (Judgment) ICTR-99-52-A (28 November 2007), paras. 452, 464, 545.

⁹⁶ See, for example, the uncertainties expressed in *Prosecutor v. Nizeyimana*, (Judgment) ICTR-2000-55C-T (19 June 2012), paras. 253, 846, 981 and 1347.

⁹⁷ *Prosecutor v. Ntakirutimana*, (Judgment and Sentence) ICTR-96-10 & ICTR-96-17-T (21 February 2003), para. 228.

⁹⁸ T.A. Doherty, ‘Evidence in International Criminal Tribunals: Contrast between Domestic and International Trials’ (2013) 26 *Leiden Journal of International Law* 937; *Akayesu* Trial Judgment (n 31), para. 156 (‘[C]ultural constraints were evident in their difficulty to be specific as to dates, times, distances and locations. The Chamber also noted the inexperience of witnesses with maps, film and graphic representations of localities, in the light of this understanding, the Chamber did not draw any adverse conclusions regarding the credibility of witnesses based only on their reticence and their sometimes circuitous responses to questions.’)

whether it was possible for the witness to identify the accused from their standpoint.⁹⁹ This is perhaps more acute for the ICTR, given Rwanda's unique geography; because of its hilly terrain, it is actually possible to get a good view of neighbouring hills, which may seem far apart on a map.¹⁰⁰ In *Kanyarukiga*, the Trial Chamber's site visit confirmed to it 'that the route described by the Defence witnesses was too long and precarious to be taken at all on 16 April 1994.'¹⁰¹

VI CONCLUSION AND LESSONS LEARNED

This article highlighted some of the issues surrounding proof in international criminal trials, with a particular focus on the ICTR. It attempted to extract a definition of 'reasonable doubt' for the purposes of the standard of proof from the ICTR's practice to date, and discussed the standard of appeal for questions of fact. We examined the three distinct features of the evidential landscape before the ICTR, as compared to its contemporaries, namely: the importance of live witness testimony, the preponderance of alibi defences, and the centrality of alleged errors of fact to appeals.

One key message that can be extracted from this overview of ICTR practice is the remarkable difficulty in deriving concrete principles of proof from the Tribunal's jurisprudence. Individual Trial Chambers differ in their approach to such issues as the requirements of corroboration; the weight to be attached to hearsay testimony, and the value of oral testimony over written statements.

As regards the assessment of evidence, we recalled that evidence (in all contexts, not just the ICTR) is likely to be both incomplete and inconclusive, with substantial contradiction and ambiguity between witnesses' accounts.¹⁰² By consequence, then, reasoning on facts in (international) criminal trials is necessarily probabilistic in nature. A very brief introduction to Bayesian probability suggested a way in which judges in the future might test their confidence in hypotheses, given the evidence.

Aside from the well-documented challenges on the *quality* of evidence before the ICTR and other international criminal tribunals, and the cultural, linguistic, and other barriers that hamper full assessment of evidence and witness testimony, we noted some issues pertaining to the *quantity* of evidence. For one thing, the volume of evidence is insufficient to establish the historical truth, insofar as *all* relevant evidence would be needed for such an assessment, and the evidential record before the ICTR is necessarily limited. Moreover, perhaps, the (international) criminal trial is ill suited to serving as an historical inquiry, given the limitations of its mandate, and so perhaps that expectation needs to be managed. The second major issue surrounding the quantity of evidence was the impact of 'robustness' (or 'Keynesian weight') on the findings of the Tribunal.

What lessons, then, can we learn from the practice of the ICTR for the future of trials before other international criminal tribunals? For a start, there still remains uncertainty as to the meaning of the 'beyond reasonable doubt' standard, and this is apparent from recent practice before the ICC. Second, generally accepted rules on the weighing of evidence remain to be developed, with Chambers preferring to assess

⁹⁹ *Prosecutor v. Zigiranyirazo* (Transcript) ICTR-01-73-T (28 September 2009). However, it should be noted that the Appeals Chamber overturned the Trial Chamber's finding in this regard, because it had failed to take relevant evidence into account: *Zigiranyirazo* Appeal Judgment (n 28), paras. 44-46.

¹⁰⁰ Phil Clark, 'Addressing mass participation in atrocity: insights for international justice from Rwanda's Gacaca community courts', presentation delivered at University of Johannesburg, International Conference on *The Legacy of the International Criminal Tribunal for Rwanda*, 31 October 2013 (author's notes).

¹⁰¹ *Kanyarukiga* Trial Judgment (n 74), para. 121.

¹⁰² See also Schum (n 57), 33-34.

weight on a case-by-case basis. Third, the nature of reasoning in international criminal trials is inherently probabilistic, and judges and practitioners might benefit from some basic training in probability methods, including but not limited to Bayesian networks. More generally, there is an increasing impetus towards formalising proof in international criminal law, with an emphasis on Wigmorean analysis,¹⁰³ inference to the best explanation,¹⁰⁴ and probability theory.¹⁰⁵ It is hoped that this exciting new direction for evidence scholarship will continue to help strengthen reasoning and proof in international criminal trials.

¹⁰³ E.g. P. Roberts, 'The Priority of Procedure and the Neglect of Evidence and Proof: Facing Facts in International Criminal Law' (2013) 13 *Journal of International Criminal Justice* 479; McDermott (n 20); Anderson and Twining (n 7).

¹⁰⁴ Klamberg (n 15); De Smet (n 15).

¹⁰⁵ De Smet (n 15) and S. De Smet, 'Justified Belief in the Unbelievable', in M. Bergsmo (ed.), *Quality Control in Fact-Finding* (Torkal Opsahl Academic EPublisher, 2013) 77, 80.